

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

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**Abstract:** As the new round of multilateral trade negotiations approaches, there is a strong demand for a negotiating rule which would give credit for autonomous liberalisation undertaken since the previous round of negotiations. This note shows that the desirability of such a rule depends on when it is instituted. It makes little sense to agree on such a rule at the *beginning* of a new round of negotiations, but may make sense to do so at the *end* of a round of a negotiations. In the former case, such a rule creates an excuse for not liberalising further and necessarily leads to higher inter-temporal protection than a no-credit rule. In the latter case, the rule could help induce and/or enhance early liberalisation by reducing the gains from retaining protection as negotiating currency, and may lead to lower inter-temporal protection under plausible conditions.

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## **Non technical summary**

As the new round of multilateral negotiations approaches, there is a strong demand for a negotiating rule which would give credit for autonomous liberalization undertaken since the previous round of negotiations. 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 were reported to have also expressed interest in the possibility of developing countries obtaining negotiating credit for trade policy reforms introduced under Fund or Bank programmes.

We consider a country in which an internal political change has created an impulse to liberalize, and examine the impact of the four different types of credit rules that have been proposed: 1) no credit rule; 2) a rule to give credit is instituted ex-post –at the beginning of a new round of negotiations; 3) a rule to give credit is instituted ex-ante –at the end of the previous round of negotiations; and 4) a rule that requires *automatic* 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 inter-temporally maximising government will see its future terms of trade loss associated with the unilateral liberalization being neutralised by the negotiating credit it will receive. Second, this will imply that 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.

As opposed to these positive aspects, the drawback of any credit rule is that during the multilateral negotiations, the tariff reduction by the unilateral liberalizing countries 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? 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 is also superior to 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.

A credit rule that grants automatic reciprocal concessions to unilaterally liberalizing countries is not sustainable because it can inflict significant costs on countries that are obliged to reduce their protection - and who may in fact end up worse off than before the original unilateral liberalization.

Is a credit rule for unilateral liberalization undertaken between negotiating rounds desirable? The answer seems to be a qualified yes, provided that such a rule can be established at the end of a round of negotiations, as this will induce (greater) unilateral liberalization between rounds, and could also lead to lower inter-temporal protection. However to agree to such a rule at the beginning of a new round of negotiations, can only have the undesirable effect of limiting the liberalization during rounds. Hence, we would argue that such a rule should not govern negotiations during the next round – rather it should be an outcome of the round.

## 1. Introduction

As the new round approaches, there is a strong demand for a negotiating rule which would give credit for autonomous liberalization undertaken since the previous round of negotiations. This note shows that the desirability of such a rule depends on when it is instituted. It makes little sense to agree on such a rule at the *beginning* of a new round of negotiations, but good sense to do so at the *end* of a round of a negotiations. In the former case, such a rule creates an excuse for not liberalizing further; in the latter case, it helps induce early liberalization by eliminating the gains from retaining protection as negotiating currency.

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. During the Uruguay Round, discussions on this issue took place in both the Negotiating Group on the Functioning of the GATT System and the Negotiating Group on Market Access.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup> In fact, it was

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<sup>1</sup>See “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>.

<sup>2</sup> See Finger, et al. (1997) and Fung and Ng (1998) for institutional and empirical details on these issues .

<sup>3</sup> 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

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.<sup>4</sup> 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.<sup>5</sup> Rather, we see the expression of demands for credit once again at the beginning of a new round of negotiations.

This paper seeks to compare the implications of three possible rules for granting credit for autonomous liberalization: (i) no credit is given; (ii) a rule for giving credit is instituted at the beginning of a (new) round of negotiations; and (iii) a rule for giving credit is established at the end of a (past) round of negotiations. Section 2 describes the basic model in which these rules are examined. Section 3 contains the body of the analysis. Section 4 examines the implications for the analysis of the distinction between applied and legally bound rates. Section 5 presents the main policy implications.

## 2. A Simple Model

Following traditional trade theory assume a two-country two-good world, where country *A* imports good 1 and country *B* imports good 2.<sup>6</sup> 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:<sup>7</sup>

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(MTN.GNG/MA/W/13, 19 December 1991) on (a) Credit for tariff bindings and liberalization of NTMs; (b) Recognition for autonomous liberalization measures.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> Given the two-country assumption, multilateral also implies bilateral.

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

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 2 imposes on imports of good 2. For simplicity, we limit the trade instrument to tariffs.

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.<sup>8</sup> 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). For simplicity, we assume symmetry in the bargaining process<sup>9</sup> and we assume that the (expected) multilateral tariff reduction in period  $T+1$  will be given by a proportion  $(1-a)$ .<sup>10</sup> Again, for simplicity, we

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<sup>7</sup> See Hillman (1981), Grossman and Helpman (1994, 1996).

<sup>8</sup> 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.

<sup>9</sup> This allows us to abstract from the problems associated with imbalances in bargaining power as in Maggi (1999).

<sup>10</sup> Here  $a$  is exogenously given. However, as will be discussed later, in the presence of a unilateral tariff reduction in period  $T$ ,  $a$  cannot be smaller than the unilateral tariff reduction that occurred in period  $T$  for an agreement to be incentive compatible for country  $B$ .

assume that governments do not discount the future (i.e. 1 dollar today is the same as 1 dollar tomorrow)<sup>11</sup> In period  $T$ , the government's inter-temporal objective function, denoted by  $\Psi^i$ , is then given by:

$$\Psi^i = V_T^i(t_1^A; t_2^B) + V_{T+1}^i(a_1^A; a_2^B) \quad (3)$$

where subscript  $T$  denotes the time period. If the two governments set tariffs non-cooperatively, denoted  $t_1^*$  and  $t_2^*$ , then:

$$t_1^* = \underset{t_1^A}{\operatorname{argmax}} \Psi^A \quad \text{and} \quad t_2^* = \underset{t_2^B}{\operatorname{argmax}} \Psi^B \quad (4)$$

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. As convincingly argued by Bagwell and Staiger (1999) and Levy (1999), in this setting 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).<sup>12</sup>

Assume that a previous round of negotiations in period  $T-1$ , call it Uruguay Round, led to a set of tariffs  $(t_1^U; t_2^U)$ , such that  $t_1^U < t_1^*$  and  $t_2^U < t_2^*$ . Obviously, for the negotiation to be successfully achieved  $\Psi_{T-1}^i(t_1^U; t_2^U) > \Psi_{T-1}^i(t_1^*; t_2^*)$ . If this participation constraint were not satisfied for both countries, then at least one country would have refused to sign the agreement. These set of tariff are binding according to WTO rules and therefore any tariff chosen at period  $T$  by countries  $A$  and  $B$  cannot be higher than  $(t_1^U; t_2^U)$ .

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<sup>11</sup> Assuming a more traditional discount factor between 0.90-0.95 will not modify our qualitative results.

<sup>12</sup> See the appendix for a proof that reciprocity in terms of value of trade neutralises the terms-of-trade effects.

### 3. Rules for Giving Credit for Unilateral Liberalization

Why might the government of a country (say  $A$ ) consider undertaking unilateral liberalisation 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 next 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  $T$ . We consider four possibilities: (i) no credit is granted for unilateral liberalization;<sup>13</sup> (ii) a rule to give credit for autonomous liberalization is instituted ex-post - at the beginning of a new round of negotiations in period  $T+1$ ;<sup>14</sup> (iii) a rule to give credit for autonomous liberalization is instituted ex-ante - at the end of the previous round of negotiations in period  $T-1$ ; and (iv) a rule is set that requires *automatic* reciprocal tariff concessions in period  $T$  to the country that unilaterally liberalizes.<sup>15</sup>

#### 3.1 No credit is given for autonomous 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:

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<sup>13</sup> This is what officially happened during the Uruguay Round in sectors other than agriculture. However, Fung and Ng (1998) have found some evidence that credit was "unofficially" accorded to some countries.

<sup>14</sup> This is what is being currently demanded by several countries. See for instance, a recent communication to the WTO General Council by Brazil, "Preparations for the 1999 Ministerial Conferences", WT/GC/W/333, 23 September 1999 and what to some extent happen during the agriculture negotiations in the Uruguay Round.

<sup>15</sup> This idea was advanced in the "non-paper" by Mexico in 1991 and re-considered in the WTO document WT/COMTD/W/4, 29 May 1995 (referred above).

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

where,  $t_1^N$  is the intertemporal 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, i.e., the “terms-of-trade effect”. 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. 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  $R_T^B$  its country's  $B$  inter-temporal reaction function.<sup>16</sup> Reaction functions after the change in country's  $A$  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 behaviour of country  $A$  would be to increase its tariff. Since this is impossible, given that  $t_1^U$  is binding, the tariff in period  $T$  of country  $A$  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  $T$ .

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<sup>16</sup> Without loss of generality we assume here for exposition purposes that tariff 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.

To summarise an increase in preference for economic efficiency may or may not lead to a unilateral liberalization, depending on the size of this change. In period  $T+1$ , i.e., after the new multilateral negotiations the tariff will then be  $\mathbf{a}t_1^N$  in the case the unilateral liberalization took place and  $\mathbf{a}t_1^U > \mathbf{a}t_1^N$  in its absence. The tariff of country  $B$  in period  $T+1$  will be given by  $\mathbf{a}t_2^U$  regardless of whether country  $A$  has liberalized.<sup>17</sup>

### 3.2 A rule for unilateral liberalization established ex-post

Since the rule is instituted ex-post, i.e., in period  $T+1$ , it could not have influenced 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.

However, since the country will now get credit for unilateral liberalization, the outcome of the multilateral tariff reduction in period  $T+1$  will obviously be different. If all countries agree to reduce protection by a proportion  $(1-\alpha)$ , then country  $A$ 's tariffs in period  $T+1$  would be  $\mathbf{a}t_1^U$ , regardless of whether country  $A$  had chosen to unilaterally liberalize.

Finally, note that in the presence of an ex-post credit rule and in the case where country  $A$  has unilaterally liberalized in period  $T$ , country  $B$  will only participate in a multilateral agreement if the multilateral tariff reduction is greater than the unilateral tariff reduction by country  $A$ . Otherwise, country  $B$  would end up reducing its tariff without obtaining any incremental tariff reduction by country  $A$ .<sup>18</sup> To see this in figure 1, note that a tariff

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<sup>17</sup> As will be discussed later, country  $B$  may optimally and unilaterally reduce its tariff in the presence of a unilateral liberalization by country  $A$ .

<sup>18</sup> To see this note, first note that  $\partial V_{T+1}^B / \partial t_1 < 0$ . That is, an increase on country  $A$ 's tariff necessarily decreases country  $B$ 's value of the objective function due to the terms-of-trade loss. Thus if  $(1-\mathbf{a})$  is smaller than the unilateral tariff reduction and credit is granted, country  $A$  has the choice of either

reduction only by country  $B$  from the levels at period  $T$ , i.e., moving vertically downwards from  $\{t_1^N; t_2^U\}$ , necessarily implies moving to a lower iso-value curve.<sup>19</sup>

### 3.3 A rule for 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, by according credit, countries may liberalize sooner as their preference for free-trade increases, because credit neutralises the future terms-of-trade loss in coming negotiations. Second, 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  $t_1^N$ . As seen in the previous section, this will also lead to a larger “necessary” tariff reduction during the multilateral round (i.e.,  $\mathbf{a}$  has to be larger than the unilateral liberalization by country  $A$  for the multilateral agreement to be incentive compatible for country  $B$ ). Third, this may also induce automatic unilateral liberalization in the rest-of-the world where there has been no change in government’s preference towards free-trade.

However as discussed in section 3.2, according credit for unilateral liberalization may also lead to smaller tariff reductions during the multilateral negotiations, given that the tariff reduction negotiated during the round will be calculated from  $t_1^U$  and not  $t_1^N$ .

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increasing its tariff or leaving it at  $t_1^N$ . This will either decrease the value of the government’s objective function or leave it unchanged. Second, country  $B$  will have to reduce its tariff by  $(1-\mathbf{a})$ , which reduce the value of the  $B$ ’s government objective function, i.e.,  $\partial V_{T+1}^B / \partial t_2 \big|_{\{t_1^N; t_2^U\}} < 0$ .

<sup>19</sup> Again, as in Bagwell and Staiger (1999), the same results could be obtained had tariffs been strategic substitutes.

### 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:

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

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's  $A$  preferences for economic efficiency in period  $T$  will lead to a larger shift of country's  $A$  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 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.<sup>20</sup>

This will not happen in figure 1 as the optimal reaction for country *B* in that figure will be to increase its tariffs, which is legally not allowed. However as shown in figure 2, if the shift in country's *A* 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.

### 3.4 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 automatically offer tariff concessions in period *T* to the country that is liberalizing unilaterally.<sup>21</sup> At first sight, this may seem a desirable rule, as it will not only neutralize the term-of-trade loss in *T+1*, but also in period *T*. This in turn will lead to sooner and larger unilateral liberalization as discussed above, which by law would have to be matched by other countries.

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<sup>20</sup> This relies on the assumption of strategic complements. Had we assume 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 result. The opposite can never happen.

<sup>21</sup> This 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).

However, as shown in figure 3, automatic credit rule may not be sustainable, because government's that are obliged to automatically liberalize may end up worse off than before the unilateral liberalization by 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 3 illustrates this. After country's  $A$  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 governments 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  $B$  and not be acceptable. We do not consider this rule in the rest of the paper.

### 3.5 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  $(1-a)$ , which for the moment is exogeneously given. 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 4 shows the profile of tariffs through time under three different types of rules. The black columns represent the evolution of tariffs under no credit rule; the grey column under an ex-post credit rule and the white column the ex-ante credit rule.

If the objective is to achieve a greater extent of trade liberalization, then as shown by figure 4, 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,  $\mathbf{a} t_1^N < \mathbf{a} t_1^U$ , 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 in period  $T+1$ .

The question then, is whether the average intertemporal level of protection is higher or lower

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. Then it is clear that the intertemporal average tariffs is lower under the ex-ante credit rule, i.e.,  $t_1^{N*} + \mathbf{a} t_1^U < t_1^U + \mathbf{a} t_1^U$ . In the case where the tariff reduction would have occurred in the absence of the ex-ante credit rule, as depicted in figure 4, the intertemporal tariff is smaller if  $t_1^{N*} + \mathbf{a} t_1^U < t_1^N + \mathbf{a} t_1^N$ . This inequality can be rewritten as:

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

Inequality (6) implies that the intertemporal 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 27 percent of the tariff variation.<sup>22</sup> This in turn implies that for inequality (8) to hold  $a < 27/63 = .43$ . 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.

Moreover, if we relax the assumption that  $a$  is exogeneously given, then it is clear that the necessary multilateral tariff reduction will have to be larger in the presence of an ex-ante credit rule than in its absence, as discussed in section 3.2. The rationale is that the unilateral tariff reduction imposes a lower bound on the level of the multilateral tariff reduction. And the unilateral tariff reduction will be larger in the presence of an ex-ante credit rule. Furthermore, it may induce larger trade liberalization in the rest of the world. These factors reinforce the desirability of an ex-ante credit rule for unilateral liberalization.

#### **4. Distinguishing between changes in the bound and the 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.<sup>23</sup> At the same time, demands for credit for autonomous liberalization have often been accompanied also by demands for credit for bindings per se.<sup>24</sup> What are the implications of the distinction between bound and applied rates for our analysis?

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<sup>22</sup> 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 (7) is always satisfied as the right-hand-side goes to 1.

<sup>23</sup> See “Credit and Recognition for Autonomous Liberalization Measures”, WTO Committee on Trade and Development, WT/COMTD/W/4, 29 May 1995.

<sup>24</sup> 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.

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% higher than the applied rate which has been unilaterally reduced to 10% in period  $T$ . Whom would *C* be willing to pay more for a reduction in the bound rate to 10%? It would seem obvious that it would pay *B* more, because a reduction in its bound rate would also imply a reduction in its applied rate. But would it be willing to pay *A* anything at all? The value of the reduction of country *A*'s bound tariff to the applied level in the next round depends on how likely *A* is to increase its tariff in the future beyond the applied level today. 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.

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 intertemporal market for changes in applied rates – through credit rules. 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 credibility of the threat. In our framework, unilateral liberalization in period  $T$  can be seen as revealing a governments' true preferences and rendering any threat of an increase in protection incredible – hence the implicit assumption that the probability of *A* increasing its protection is zero.

## 5. Concluding remarks

Is a credit rule for unilateral liberalization undertaken between negotiating rounds desirable? The answer seems to be yes, provided that such a rule can be established at the end of a round of negotiations, as this will induce (greater) unilateral liberalization in between rounds, and could also lead to lower inter-temporal protection. However to agree to such a rule at the beginning of a new round of negotiations, can only have the undesirable effect of limiting the liberalization during rounds. (It could be argued, of course, that such a rule 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.) Hence, we would argue that such a rule should not govern negotiations during the next round – rather it should be an outcome of the round.

One point in defence of such a rule being created now 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 liberalization undertaken unilaterally. Finger, et al. (1997) and Fung and Ng (1998) provide some support for this view by demonstrating 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 trends facts may 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. But we should not read too much in these examples because there has probably been a much greater increase in the weight attached to social welfare as opposed to political economy considerations in services policy-making than in agricultural policy-making.

Finally, one argument for giving credit ex-post for unilateral liberalization must be acknowledged. This is when a particular country has eliminated virtually all its protection and 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 purpose of providing the liberalizers with some negotiating currency. The current empirical relevance of this situation is, however, limited.

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## Appendix 1<sup>25</sup>

GATT's reciprocity in multilateral trade negotiations implies that any change in import volumes following a tariff reduction by country  $A$  should be matched by an equal increase in import volumes of country  $B$ . This in turn implies that any multilateral tariff reduction will leave relative world prices unchanged.

To see this, and without loss of generality, choose units so that all world prices are initially equal to 1. Trade balance implies:

$$\Delta(p_1^w m_1^A) = \Delta(p_2^w m_2^B) \Leftrightarrow \Delta p_1^w m_1^A + p_1^w \Delta m_1^A = \Delta p_2^w m_2^B + p_2^w \Delta m_2^B \quad (*)$$

where  $\Delta$  denotes a change; subscripts refer to goods 1 and 2 and superscripts to countries  $A$  and  $B$ .  $p$  are prices and  $m$  are imports.

Rearranging (\*) and recalling that world prices are initially equal to 1 by choice of units, yields:

$$\Delta m_1^A - \Delta m_2^B = (\Delta p_1^w - \Delta p_2^w) m_2^B \quad (**)$$

Then note that reciprocity implies that the left hand side of (\*\*) equals to zero. Then to satisfy equation (\*\*), world relative prices must remain constant, i.e.,  $\Delta p_1^w = \Delta p_2^w$ .

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<sup>25</sup> This is drawn from Bagwell and Staiger (1999), p. 224.

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

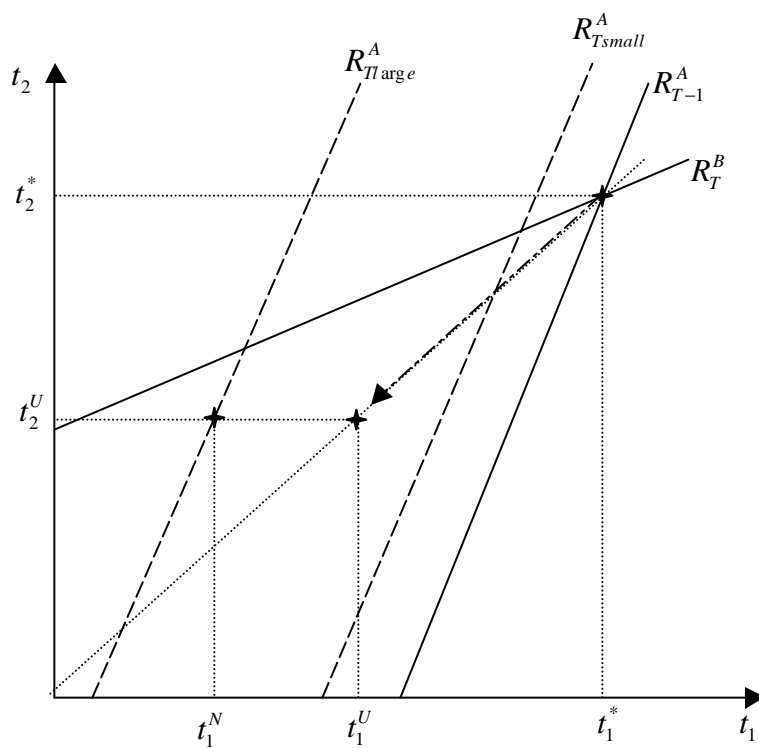


Figure 2: *Inducing liberalization in the rest-of-the-world*

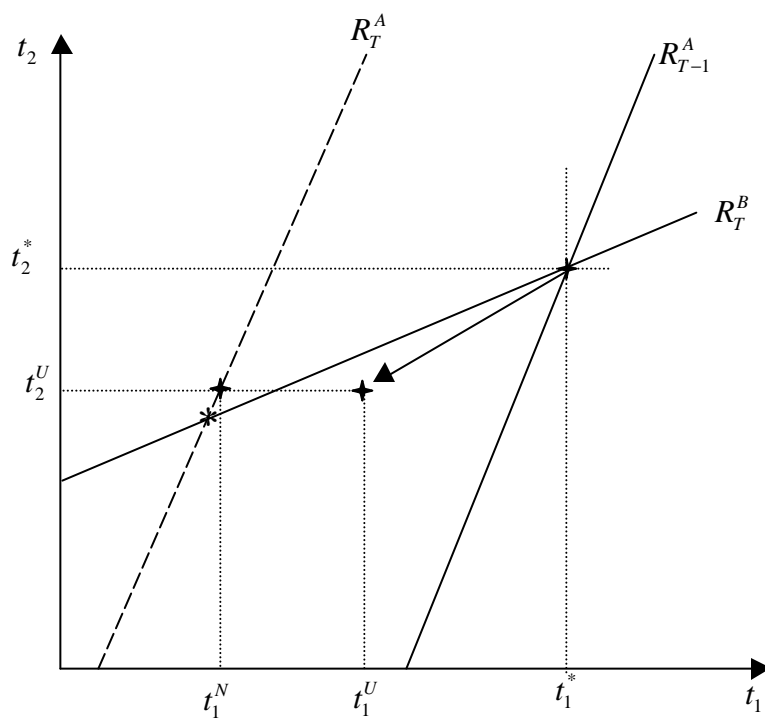


Figure 3: Automatic credit inducing rest-of-the-world to be worse off

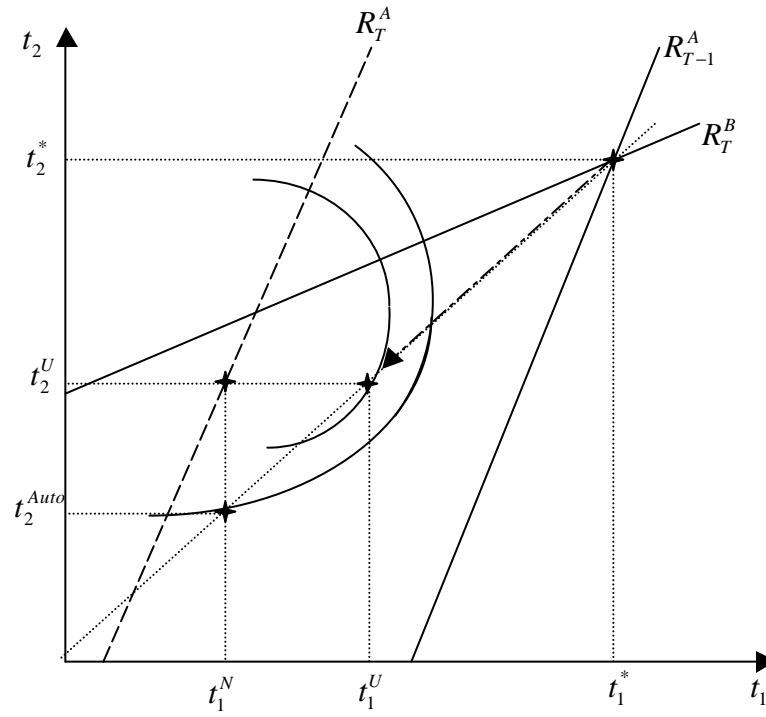


Figure 4: Comparing tariff profiles under different rules

