

# Free Trade Areas with Politically Active Oligopolies

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## **Abstract**

I evaluate in this paper the impact of Free-Trade Areas (FTAs) on the world trade system using an oligopolistic-political-economy model that treats the member countries' external tariffs as endogenously determined. In this context, I find that FTAs are likely a "building block" of the multilateral system. This conclusion is based, first, on the finding that FTAs induce the member governments to lower their external tariffs, and to do so deeply enough to generate trade creation between members and outsiders – thus benefiting the latter. The FTAs members need not gain, but since their governments, in spite of their political preferences, endorse only welfare-improving FTAs, they also gain with the ratified arrangements. Finally, I find also that FTAs make the support for an efficient multilateral liberalization more likely, as they reduce the role of special interests criteria on the governments' trade regimes decisions.

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# I – Introduction

The fast and notable expansion of preferential – or *regional* – trade agreements (PTAs) throughout the world in the last decade is a fact that has attracted increasing attention from trade economists.<sup>1</sup> Bhagwati (1993) divides the concerns regarding such phenomenon into two categories: the “static” issues, which refer mainly to the direct impact of PTAs on world trade flows and welfare; and the “dynamic” time-path issues, which relate to the impact of PTAs on the incentives for further non-discriminatory liberalization. A third topic, which is closely connected with the first two, regards the conditions that create support for the actual formation of FTAs.

In this paper, I address these issues for preferential arrangements in the form of free-trade areas (FTAs), where the participating countries agree to eliminate the internal tariffs but set their external tariffs independently.<sup>2</sup> I examine them by means of an oligopolistic-political-economy model marked specially by one particular feature: an endogenous treatment of the members’ external tariffs. This feature, although incorporated by some of the more recent studies of the “static” consequences of FTAs, has nevertheless been widely disregarded in the analysis of both the endogenous formation of FTAs and their “dynamic” impact. As I demonstrate later, in a world where political economy elements move governments’ policy decisions away from welfare criterions, the endogenization of the external tariffs is critical for all of those perspectives. Essentially, it alters the extent of trade creation/diversion generated by a given FTA, the effectiveness of the lobby activities and, consequently, the degree of political distortions in the governments’ decisions.

More specifically, I employ a N-country, 2-good model to analyze those issues, where one good is competitively supplied but the other is produced by oligopolistic firms. The basic structure resembles the setting of Krishna (1998), who studies the conditions under which FTAs are politically supported and the conditions under which they undermine a multilateral liberalization. I nevertheless significantly depart from his modeling strategy precisely because of the endogenization of the members’ external tariffs. The model also distinguishes considerably from Krishna’s in its political economy structure, as I assume more general preferences for the policymakers and make the political influences explicit. In particular, in the spirit of Grossman and

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<sup>1</sup> The WTO reports in its web page, as updated in June 2000, that “nearly all of the WTO’s 136 Members have notified participation in one or more regional trade agreements (RTAs). [...] In the period 1948-1994, the GATT received 124 notifications of RTAs (relating to trade in goods), and since the creation of the WTO in 1995, 90 additional arrangements covering trade in goods or services have been notified. [...] Out of the total of 214 agreements or enlargements so far notified to the GATT/WTO, 134 are deemed to be currently in force.”

<sup>2</sup> Custom unions – which are not dealt with here –, constitute the other main form of PTAs. They differ from FTAs essentially because their members have a common external trade policy.

Helpman (1994), I allow the oligopolistic industry to shape its government's "political-support function" by means of financial "contributions."

The studies of the "static" consequences of FTAs have only recently started to relax the assumption of exogenous external tariffs, and not surprisingly, the endogenous treatment of the members' external tariffs has frequently led to results substantially distinct from those in the earlier literature, in terms of both trade flows and welfare. The first to account for that were only Kennan and Riezman (1990), who find, by means of simulated examples, that countries tend to reduce their external tariffs after entering in a FTA. Richardson (1993) shows that a motivation for such reduction is the mitigation of the negative impact on tariff revenue that results from the shift of imports from outsiders to the FTA partners. Bagwell and Staiger (1999) indicate that changes in the terms of trade may be also a force toward lower external tariffs.

Both of these motivations arise in this model as well. Moreover, two additional – and reinforcing – effects are identified. One is the "strategic effect," which indicates that in oligopolistic industries there is a further reason for the reduction of external tariffs. Essentially, it reflects the fact that a country's profit-shifting motive for protection is weakened when the country joins a FTA. Intuitively, this happens because, while increases in the external tariffs always shift profits from the outside firms to the domestic ones, under a FTA the partners' firms capture part of that benefit. This decreased ability to shift profits from foreign firms to the domestic ones, in turn, makes the FTA governments more inclined to lower their external tariffs.

The second novel reason inducing lower external tariffs identified here originates from the political economy aspect of the model, which presumes that governments are susceptible to lobbies demanding increased protection. In such case, tariffs serve also a distributive device, by transferring domestic surplus from consumers to domestic producers. I show that a FTA weakens such motivation for protection as well, originating the "distributive effect." At an intuitive level, this happens because with a FTA the domestic firms lose market share in their home market to their counterparts from the partner countries. As a result, the ability of FTA governments to use tariffs to transfer surplus from consumers to producers by means of higher prices loses some of its effectiveness, since part of that benefit now goes to the partners' firms. This effect further induces the FTA governments to lower their external tariffs.

The external tariffs' reduction is itself an indication of potential benign consequences of FTAs, but a precise evaluation requires also the assessment of the *extent* of such outcome. Under this paper's framework, it turns out that the four effects indicated above are jointly strong enough even to ensure "trade creation" between FTA members and non-members, reinforcing the premise

that a FTA might be indeed a “legitimate” form of trade liberalization. Such trade creation necessarily benefit the *non*-member countries. Moreover, though it is not contingent upon political economy considerations, it is nevertheless strengthened by the governments’ political motivation: a stronger political bias, by amplifying the distributive and the strategic effects,<sup>3</sup> induces a sharper reduction of the external tariffs and, as a result, more trade creation. These results are all showed in Section III.

Having seen the immediate consequences of an *exogenous* FTA, one may then wonder whether – or when – governments will actually *want* to create FTAs. In the earlier literature, this question was seen simply as a problem regarding the welfare of potential member countries – if a preferential arrangement were supposed to increase its members’ welfare, then the governments would effectively want to create it; otherwise, they would not. More recently, however, the recognition of the importance of political economy matters in the determination of actual trade policies has shifted the focus toward the analysis of the *political viability* of given trade agreements.

Grossman and Helpman (1995) and Krishna (1998) are two prominent examples of this change of focus. Remarkably, they obtain very similar results from significantly distinct models: only arrangements capable to generate substantial trade diversion might be politically viable. This rule suggests that governments may support arrangements even if they reduce their countries’ welfare.<sup>4</sup>

On the face of these results, there seems to be an incompatibility between the consequences of FTAs obtained in this paper – overall *trade creation* – and the requirement for political feasibility indicated above – substantial *trade diversion*. Such antagonism is only apparent, though. It is in fact simply a consequence of the distinct treatments of the members’ external tariffs, which are endogenous here but assumed exogenously fixed by those authors. With that assumption, they wipe out all of the four distinct forces that induce FTAs members to lower their external tariffs identified here, thus artificially pushing FTAs toward trade diversion.<sup>5</sup>

But if the Grossman-Helpman-Krishna criterion is not compatible with endogenous external tariffs, when will governments actually want FTAs? And what can we say about the welfare consequences of politically viable FTAs? The analysis of Section IV shows that, although

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<sup>3</sup> While the “distributive effect” is due *only* to the governments’ political biases, the “strategic effect,” which arises as long as the industry in consideration is oligopolistic, is also reinforced by the governments’ political preferences.

<sup>4</sup> Grossman and Helpman (1995, p. 680) assert indeed that “the conditions needed for political viability of an FTA may contradict those that insure its social desirability,” although they note that a FTA that is both political viable and efficiency-enhancing may be possible.

<sup>5</sup> It is worth noting that, if the external tariffs were held constant in the model of this paper, FTAs would always be trade diverting, corroborating the presumption that trade diversion might indeed be, at least in some circumstances only an artifact of exogenously fixed external tariffs.

political economy may be responsible for the obstruction of some welfare-enhancing arrangements, it will *never* generate support for welfare-reducing FTAs.

Although possibly striking at first, this result can be understood by noting that a FTA, because of the “strategic” and the “distributive” effects, always reduces the distortions due to political economy. As a consequence, the creation of a FTA, which in general may or may not enhance the participating countries’ welfare, necessarily induces a positive welfare effect due to such “rent dissipation.” Governments, however, do not internalize this effect, as they are fully compensated by their redistributive favors. As a result, the governments underestimate the consequences of any given arrangement, relative to its effects on national welfare, and do so more widely the higher is their political biases. Considering that, and in view of the beneficial effects of trade creation for the non-members, a strong result is then reached: if a FTA is created, it benefits *every* country.

Despite this unambiguous result regarding the helpfulness of free-trade agreements, they may nonetheless still be harmful for the world trade system if they undermine the viability of multilateral liberalization (ML). McLaren (1999), focusing on the role of negotiating costs and sector-specific sunk investments, finds that an anticipated trade bloc, by inducing members to specialize toward each other, tends to reduce the *ex post* gains from multilateral free trade. As a result, countries may lose the initial interest in ML once they engage in regional initiatives. Levy (1997), in a very distinct framework, shows that if the benefits of a ML are positive but not too large for the median voter of a country, then preferential liberalization may undermine the support for ML by providing disproportionate gains to him/her.<sup>6</sup> Both McLaren and Levy consider only the extreme cases of autarky and free-trade – preferential and multilateral –, and accordingly questions regarding external tariffs do not arise by construction.

A study that extends the perspective typically used in the analysis of the “static” issues to the examination of the “dynamic” time-path issues – and which seems to be actually the only one to do that - is Krishna (1998). He asserts that the trade diversion due to a FTA might cause the

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<sup>6</sup> Others examining this topic include Ethier (1998) and Riezman (1999). Ethier focuses on the reverse order, by viewing regional initiatives as a *consequence* of the success of multilateralism. He asserts that they are a benign consequence, though, as they enhance world investment and create incentives for economic reforms in less developed countries. Riezman, on the other hand, analyze how the availability of PTAs in general affects the likelihood of a coalition leading to multilateral free-trade to be in the core. He finds that, if countries are substantially asymmetric, then the availability of PTAs tends to be helpful, because of the threat that smaller countries may pose on the larger ones. On the other hand, in a more symmetric world, PTAs may replace general free-trade in the core, thus harming trade efficiency. It is worth mentioning also the studies focusing on the consequences of PTAs for multilateral *tariff* cooperation, which explicitly consider the absence of formal enforcement constraints in international agreements. Most of this literature concentrates on custom unions, though. Notable exceptions are Bagwell and Staiger (1997 and 1999), who find that in general FTAs create ambiguous effects on the sustainability of multilateral cooperation.

undermining of ML initiatives by offering rents to the political active oligopolistic industries high enough to reverse the political feasibility of a ML that would exist were the FTA not available.

In the present framework, by contrast, I show (Section V) that whereas political economy considerations may induce a government to obstruct a welfare-improving ML, the country's membership in a FTA makes such possibility *less likely* to happen. The reason for that comes again from the “strategic” and the “distributive” effects, which reflect the reduced importance of the political process in the determination of the country's trade barriers under a FTA. The arrangement, consequently, induces the government to center its trade regime decisions more on efficiency than on special interests criteria, becoming consequently less inclined to hinder an efficient ML. The sharp contrast between this results and Krishna's is, once more, a reflex of the treatment of the FTA members' external tariffs: by treating them as endogenously determined, his reasoning for the ML undermining – trade diversion – vanishes, while the cause that enhances the feasibility of a welfare-improving ML – the “rent dissipation” – emerges.

In summary, I find that with an endogenous treatment of the members' external tariffs, FTAs tend to be widely benign arrangements. They will induce the member governments to lower their external tariffs, and to do so deeply enough to generate trade creation even between members and outsiders, thus benefiting the latter. With respect to the members' welfare, they may in principle fall with an arrangement, but in practice they will not, as the governments will not endorse welfare-reducing FTAs in spite of their political preferences. Finally, there is no need to worry about possible harmful effects for the prospects of multilateral liberalization either. In fact, the existence of FTAs make an efficient ML more likely to be supported. Therefore, this paper indicates that FTAs should be seen as genuine “building blocks” of the multilateral trade system.<sup>7</sup>

## II – The Model

Let there be  $N$  countries, with  $N \geq 3$ , and two sectors, one competitive ( $X$ ) and another oligopolistic ( $Q$ ). Both goods are homogeneous, produced under constant returns to scale and use only labor ( $L$ ) as input. I normalize units so that one unit of  $X$  requires one unit of  $L$ , while each unit of  $Q$  requires  $c > 0$  units of  $L$ . Technologies are the same across countries and  $L$  is inelastically supplied in every country. Choosing good  $X$  as numeraire, any equilibrium with diversified production requires wages set to one and implies a marginal cost of  $c$  to produce  $Q$ . In order to

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<sup>7</sup> This terminology is from Bhagwati (1991), who first asked whether PTAs are “stumbling blocks” or “building blocks” of the multilateral trade system.

simplify matters, I assume the existence of only one oligopolistic firm per country. Thus, trade takes place only because of the oligopolistic behavior in the market of  $Q$ .

In the oligopolistic sector, every firm sells in every country, but by selling abroad they bear an increase in their marginal cost, brought by specific import tariffs,  $t$ .<sup>8</sup> Thus, a firm selling in its home country faces a marginal cost of  $c$ , but one of  $c + t_j$  if it sells in foreign country  $j$ . In each of the national markets, assumed to be segmented, the firms compete in a Cournot fashion, whence a foreign firm  $f$  selling in the “home country”  $H$  takes  $t_h$  and the sales of all other firms as given and solves:

$$\text{Max}_{q_h^f} P_h(Q_h)q_h^f - (c + t_h)q_h^f,$$

where  $q_h^f$  represents how much a foreign firm sells in country  $H$ , whose inverse demand is given by  $P_h(Q_h)$ , with  $Q_h$  representing  $H$ 's consumption of the oligopolistic good. For the local firm, the problem is analogous, being changed only because it does not face any tariff when selling at home.

I assume that the representative consumer of each country has a quasilinear utility function  $U$  with a quadratic non-linear part, which generates a linear demand for the oligopolistic good. For the home country, the demand is represented by  $Q_h = A_h - P_h$ , with  $A_h > c$ . The demand for the competitive good, which is the responsible to balance trade, is then found residually as  $X_h = L_h - Q_h P_h(Q_h) = L_h - (A_h Q_h - Q_h^2/2)$ . For the other  $N - 1$  countries, the representation is analogous, though the demand's intercept and slope may vary across countries.

A brief discussion of the assumptions is opportune here. Market segmentation, together with constant marginal costs and a quasilinear utility function, assures that the sales decisions of every firm are independent across markets. Such independence implies that the tariff chosen by each government will be independent of the tariffs set elsewhere as well. This assumption, which is consistent with most of the literature of oligopolistic international trade, facilitates the analysis considerably. Demand linearity is also assumed to simplify matters further.<sup>9</sup>

I now solve for the equilibrium sales in terms of  $t_h$ ,  $A_h$ ,  $c$  and  $N$ . Since preferences and technology are the same for everyone, the only distinction with respect to the quantities sold in a given market regards the origin of the firm, whether domestic or foreign. In an equilibrium without trade agreements, they correspond, respectively, to:

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<sup>8</sup> I ignore transport costs, which are inconsequential for the analysis, and treat the import tariffs as if they were non-discriminatory, unless the country is within a FTA. Nevertheless, because of the symmetry across countries, in the absence of FTAs, nondiscrimination is actually an *equilibrium* result.

<sup>9</sup> The dependence of the paper's results on the assumption of demand linearity is further discussed in the Appendix.

$$q_h^h = \frac{(A-c) + t_h(N-1)}{1+N} \quad \text{and} \quad q_h^f = \frac{(A-c) - 2t_h}{1+N}. \quad (1)$$

One can also easily check that the profit of a firm in any market is given just by the square of its sales volume there. Consequently, it follows from (1) that a firm always benefits from a tariff in its home country, but always loses from tariffs elsewhere.

My definition of the governments' preferences is analogous to the one used by Grossman and Helpman (1994), who assume that governments value a dollar received as a "contribution" ( $D$ ) potentially more than a dollar added to general welfare,  $W$ .<sup>10</sup> Thus, the home government's payoff is specified as:

$$G_h(t_h, D_h) = W_h(t_h) + b_h D_h, \quad \text{with } b_h \geq 0 \text{ and constant.}^{11}$$

I incorporate political activities with a simple principal-agent framework, in the following way. The net payoff of  $H$ 's oligopolistic firm,  $V_h$ , is given by its total profits ( $\Pi_h \equiv \sum_{j=1}^N \pi_j^h$ ) minus the contribution ( $D_h$ ) given to the local government. As in Grossman and Helpman (1995), I assume that the firms are unable to coordinate themselves to lobby internationally and that their market behavior is non-cooperative as well. The goal of a lobby is to affect the policymaker's tariff choice. Since the firm knows its government's preferences, it can map tariffs to  $D_h$ , then balancing marginal gains (with higher tariffs) against marginal losses (from numeraire given to the policymaker). The game, taking the trade regime as given, can then be summarized as:

- (S1) Each firm offers a "menu" of choices composed by pairs  $(t, D)$  to its government.
- (S2) Given the menu offered, each government chooses one pair  $(t, D)$  or uses its best outside option,  $(t^*, 0)$ , where  $t^*$  is the tariff level that maximizes domestic welfare.
- (S3) Given the tariffs, the firms decide simultaneously how much to sell in each market.

Stages (S1) and (S2) take place in isolation in each country, but at (S3) the firms' decisions depend on the worldwide choices at (S2). In equilibrium,  $H$ 's oligopolistic firm requests a tariff  $t_h$  and choose to donate an amount  $D_h$  to its government when solving the problem:

$$\text{Max}_{t_h, D_h} \pi_h^h(t_h) - D_h, \quad (2)$$

<sup>10</sup> These contributions can be understood also as a measure of the "effectiveness" of more general lobby activities, evaluated in terms of the numeraire.

<sup>11</sup> If  $b_h = 0$ , political economy issues do not arise. On the other hand, Krishna's (1998) assumption that governments care only about producer's profits can be represented under this formulation as the special case where  $b \rightarrow \infty$  for all countries. As shall be clear below, in such case tariffs would be always prohibitive.

subject to the other firms' non-cooperative market behavior and to the home government's individual rationality constraint ( $IR_h$ ),  $G_h(t_h, D_h) \geq W_h(t_h^*)$ .<sup>12</sup>

A consequence of the principal-agent specification employed here is that, in equilibrium, the resources  $D_h$  received by the government do not affect its payoff, since  $IR_h$  is always satisfied with equality. Thus, the lobby activities in this model serve only as a way for the oligopolistic firms to extract an extra-surplus from their home countries' consumers.<sup>13</sup> Since in equilibrium a firm offers only one pair  $(D_h^*, t_h)$  to its government, and because  $IR_h$  is binding, we find (after substituting for the definition of  $G_h$ ) that:

$$D_h^*(t_h) = [W_h(t_h^*) - W_h(t_h)]/b_h \geq 0. \quad (3)$$

The tariff choice (or, strictly speaking, the choice of the tariff in excess to its welfare-maximizing level), which is constrained by its "cost,"  $D_h^*$ , completes the firm's problem. Substituting (3) in (2), we find that the tariff selected by the firm comes from the solution of:

$$\text{Max}_{t_h} \frac{1}{b_h} [CS_h(t_h) + T_h(t_h) + (1 + b_b)\pi_h^h(t_h) - W_h(t_h^*)], \quad (4)$$

whose last term within the bracket is a constant and where  $CS_h$  and  $T_h$  represent, respectively, the home country's consumer surplus and tariff revenue. The FOC of the firm's problem is therefore:

$$\frac{\partial CS_h(t_h^p)}{\partial t_h} + \frac{\partial T_h(t_h^p)}{\partial t_h} + \frac{\partial \pi_h^h(t_h^p)}{\partial t_h} (1 + b_b) \geq 0, \quad (5)$$

where  $t_h^p$  is the equilibrium tariff level. If (4) has an interior solution, (5) holds with equality; otherwise, the tariff will be set to a prohibitive level. Noticeably, the tariff that the firm offers to the government in combination with its "contribution,"  $D_h^*(t_h)$ , is the same tariff that a government with a preference for producers (reflected by  $b_b$ ) over the rest of the society would select. That is, the equilibrium tariff is selected *as if* a government with such political bias were choosing it. The difference between the "optimal tariff" ( $t_h^*$ ) and the "politically optimal tariff" ( $t_h^p$ ) – henceforth just the "political tariff" – is therefore due only to the "extra weight"  $b$  posted on  $\pi_h^h$ , making this formulation a version of the general politically driven objective functions analyzed by Baldwin (1987). Solving (5), we then find  $t_h^p$ :

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<sup>12</sup> Note that the timing *within* the second stage is irrelevant, as a direct consequence of the governments' "horizontal" reaction functions when selecting their optimum tariffs. This explains the absence of  $\pi_j^h, j \neq h$ , in problem (2). That is, since  $\pi_j^h$  is affected only by  $t_j$ , which is entirely determined by the internal political game in country  $j$ , firm  $h$  does not need to consider it when lobbying for  $t_h$ .

<sup>13</sup> Giving all the bargaining power to the oligopolistic firms is, in fact, unessential for the analysis. In particular, allowing the government to obtain strictly positive rents from the political process would leave Section III entirely unaffected, and would maintain the qualitative results of Section IV as well.

$$t_h^p = \begin{cases} t_h^* = \frac{3(A_h - c)}{7 + N}, & \text{if } b_h = 0 \\ \frac{(A_h - c)(3 + 2b_h)}{7 + 2b_h + (1 - 2b_h)N}, & \text{if } b_h \in (0, 1/2) \\ \text{prohibitive}, & \text{if } b_h \geq 1/2. \end{cases} \quad (6)$$

The political tariff  $t_h^p$  is increasing in  $b_h$  (and strictly increasing when the solution is interior), and this has a straightforward intuition. The oligopolistic firm will be more willing to lobby for a higher tariff the “cheaper” protection is – or equivalently, the more sensitive to contributions its government is –, and therefore the equilibrium tariff ought to be increasing in  $b_h$ . If  $b_h$  is too high (above  $1/2$ ), the oligopolistic firm obtains a prohibitive tariff – of  $(A - c)/2$  or more. I shall nevertheless restrict the analysis to the more interesting – and certainly closer to the real practices – case where  $b < 1/2$  for every country, thus assuring that non-prohibitive tariffs will arise in equilibrium.

Note, in addition, that tariffs are strictly positive even if  $b_h = 0$ . This protectionist bias is the result of two forces. One is the typical terms of trade motivation, as here no country is “small” in the theoretical sense. The other is the tariffs’ strategic content, as typically emphasized in the literature of strategic trade policy. Here, a government is able to increase the marginal costs of the foreign firms selling in the domestic market by raising its import tariff levels, thus creating a cost advantage to the domestic producer. This makes the foreign firms lose market share to the domestic producer, who increases local sales and profits. Although such motivation for protection arises despite political economy considerations, it is reinforced by the latter, as a higher  $b$  makes governments more concerned (in equilibrium) about producers’ surplus, relative to consumers’. I nevertheless postpone a more thorough discussion of the motivations for protection to the next section, where I appraise also the effects of a FTA on each of them.

Up to now, I ignored the possibility of trade agreements. The determination of the (external) political tariffs and the equilibrium contribution levels with a FTA in place is, however, totally analogous to the preceding analysis. The only change is the introduction of a constraint setting tariffs within the FTA to zero. With a multilateral free-trade agreement in place, on the other hand, all tariffs are eliminated and there is actually no further trade policy to be chosen.

### **III – FTAs, External Tariffs and World Trade Flows**

I evaluate first the impact of a FTA between  $M$  countries on their external tariffs, with a FTA meaning that every firm within the area will face zero tariffs when selling at any of the

members' markets. That is, I analyze how the internal free-trade affects the members' incentives in the determination of their external tariffs. GATT's Article XXIV establishes that they cannot be increased, but here it is actually *not* binding, as Proposition 1 asserts.

**PROPOSITION 1:** *When a group of  $M$  countries,  $M \in [2, N - 1]$ , creates a FTA, they are induced to reduce also their external tariffs, and to reduce them more deeply the larger is the FTA.*

**Proof:** Generalizing equations (1) to incorporate the effects of the FTA and denoting by  $t_e$  the external tariff set under the FTA, one finds that:

$$q_h^h = q_h^p = \frac{(A-c) + t_e(N-M)}{1+N} \quad \text{and} \quad q_h^f = \frac{(A-c) - t_e(1+M)}{1+N}, \quad (1')$$

where  $h$ ,  $p$  and  $f$  index, respectively, the home country firm, its partners' and the firms outside the FTA. Given those quantities, the home country variables under the FTA,  $CS_M(t_e)$ ,  $T_M(t_e)$  and  $\Pi_M(t_e)$ , can be straightforwardly computed. The FTA "political tariff" maximizes the sum  $CS_M(t_e) + T_M(t_e) + (1 + b_h) \Pi_M(t_e)$ , whence we find that:

$$t_e^p = \frac{(A_h - c)(3 + 2b_h)}{(2M - 2b - 1)N + (5 + 2b_h)M + 2}, \quad (6')$$

which is clearly decreasing in  $M$ .<sup>14</sup> Therefore, after a FTA has been formed (or enlarged), its members will find a reduction of its external tariffs optimal. ■

Proposition 1 states that, if a nation eliminates its tariffs against a group of countries, it will also want to reduce its remaining tariffs – i.e., that tariffs are "complementary." In order to show the driving forces behind Proposition 1 and clarify its intuition, I first identify the governments' motivations for and against protection and then show how a FTA affects each of them. To help exposition, I indicate the tariffs against the partners by  $t_{int}$  – although it will be zero with the FTA in force.<sup>15</sup> Thus, using the notation established in Proposition 1's proof – but dropping hereafter the subscripts  $M$  and  $h$  whenever there is no ambiguity – note that the effect of a marginal change in  $t_e$  on government  $H$ 's (equilibrium) payoff is given by:

$$\begin{aligned} \frac{\partial G}{\partial t_e} &= \frac{\partial CS}{\partial t_e} + \frac{\partial T}{\partial t_e} + (1+b) \frac{\partial \Pi}{\partial t_e} \\ &= \left( \frac{\partial U}{\partial Q} \frac{\partial Q}{\partial t_e} - P \frac{\partial Q}{\partial t_e} - \frac{\partial P}{\partial t_e} Q \right) + \left[ (N-M) \left( q_h^f + t_e \frac{\partial q_h^f}{\partial t_e} \right) + (M-1) t_{int} \frac{\partial q_h^p}{\partial t_e} \right] + (1+b) \left[ (P-c) \frac{\partial q_h^h}{\partial t_e} + q_h^h \frac{\partial P}{\partial t_e} \right]. \end{aligned} \quad (7)$$

<sup>14</sup> Naturally, if  $M = 1$ , (1') simplifies to (1) and (6') simplifies to (6), the case without a FTA.

<sup>15</sup> This will also make clear that the whole argument does not really require the facilitating assumption that  $t_{int} = 0$  under the FTA. In fact, as long as it is reduced by the preferential arrangement, all the paper's qualitative results remain unaltered.

Since  $\partial U/\partial Q = P$ , with some manipulation this expression can be rewritten as:

$$\frac{\partial G}{\partial t_e} = \left[ (N - M)q_h^f \left( 1 - \frac{\partial P}{\partial t_e} \right) - (M - 1)q_h^p \frac{\partial P}{\partial t_e} \right] + \left[ t_e(N - M) \frac{\partial q_h^f}{\partial t_e} + t_{int}(M - 1) \frac{\partial q_h^p}{\partial t_e} \right] + \left[ (1 + b)(P - c) \frac{\partial q_h^h}{\partial t_e} \right] + \left[ bq_h^h \frac{\partial P}{\partial t_e} \right]. \quad (7')$$

From (1') it is straightforward to see that  $\partial q_h^f/\partial t_e < 0$  and  $\partial q_h^p/\partial t_e > 0$ , for  $j \neq f$ . A little more algebra ensures also that  $\partial P/\partial t_e \in (0, 1)$ . We can then obtain the signs of each effect generated by varying  $t_e$ .

The first square bracket in (7') represents the terms of trade effect (*tot*). Its first element reflects the impact of an increase in  $t_e$  on home's *tot* with the outside countries, *tot(f)*, while the second represents the effect on home's *tot* with the other FTA members, *tot(p)*. The former is positive, but the latter is negative. The second square bracket represents the impact on tariff revenue due to the shift in the volume and the origin of imports caused by a change in  $t_e$ . An increase in  $t_e$  reduces the volume of imports from the outside countries while increasing the imports from the partners. Whereas the latter raises revenues proportional to  $t_{int}$ , a sufficient condition for the whole expression to be negative is that  $t_{int} \leq t_e$ . The third square bracket represents the strategic reason for protection. Once  $P > c$ , an increase in  $t_e$  shifts sales – and thus profits – from the outside firms to the domestic producers. This effect is magnified by the governments' political economy concerns (i.e., by a  $b > 0$ ). Finally, the last bracket represents the distributive motive for protection. As long as  $b > 0$ , a tariff benefits the government also by increasing the local price, since a higher price shifts domestic surplus from consumers to producers, who have a higher weight in the government's (equilibrium) payoff function.

The sum of these factors, when set to zero, constitute the necessary (and here also sufficient) FOC for the equilibrium  $t_e$ . I compare now that FOC before and after the FTA by analyzing the effects of changing  $t_{int} = t_e$  to  $t_{int} = 0$  on each component of (7'). Critical for the following discussion is the recognition that the elimination – or the reduction – of the internal tariffs, which is what characterizes the FTA, will necessarily increase competition in the home markets for a *given* external tariff. Those receiving the advantage – the partners' firms – will then increase sales in the home market at the expense of the local firm and of those outside the FTA. Overall, however, aggregate sales will increase, forcing the price down. As can be inferred from the comparative statics analysis of Dixit (1986), these kinds of effects are general, as they do *not* depend on the specifics of the demand structure.<sup>16</sup>

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<sup>16</sup> I discuss the robustness of the assumed demand linearity more thoroughly in the Appendix.

(1) *The change in the terms of trade effect*

The increase in  $H$ 's  $tot(f)$  due to a marginally higher  $t_e$  is less significant under the FTA than it would otherwise be, as for any given  $t_e$  the FTA reduces the imports from the outside countries. On the other hand, the FTA makes the worsening of  $H$ 's  $tot(p)$  due to a higher  $t_e$  more significant, as for a given  $t_e$  the FTA expands the imports from the partners. Thus, the FTA makes  $H$ 's  $tot(f)$  improvement less relevant, but  $H$ 's  $tot(p)$  deterioration more critical; both push for a lower external tariff.

(2) *The loss in tariff revenue – the “tariff revenue effect”*

A second force pushing for lower external tariffs arises because any increase in  $t_e$  tends to raise less tariff revenue with the FTA in force than otherwise. With initial  $t_{int} = t_e$ , an increase in  $t_e$  would reduce  $q_h^f$  but would also increase  $q_h^p$ , which generates some tariff revenue before the FTA and thus partially compensates the revenue loss due to a lower  $q_h^f$ . With the FTA, on the other hand,  $t_{int} = 0$  and the increase in  $q_h^p$  that accompanies the reduction in  $q_h^f$  following an increase in  $t_e$  raises no revenue. Hence, because of the loss of tariff revenue caused by the shift of imports from those who pay duties to those who do not, the incentives to raise  $t_e$  are lessened under the FTA.

(3) *The weakening of the strategic motive for protection – the “strategic effect”*

Because for any given  $t_e$  the FTA increases domestic competition and lowers the local price, it reduces also the mark-up for the home firm. As a result, any fraction of the market taken by the local firm from the outside ones generates less profit under the FTA than it would otherwise. Consequently, the FTA reduces the home government's ability to use its tariff to shift foreign profits to the local firm, thus decreasing its marginal “profit-shifting” incentives to raise  $t_e$ . Note also that this “strategic effect” is stronger the more important is the government's political economy concerns, since this implies (in equilibrium) a more important role for profits – and thus for the profit-shifting motive – in the tariffs' determination process.

(4) *The weakening of the distributive motive for protection – the “distributive effect”*

Because for any given  $t_e$  the FTA reduces the local firm's domestic sales, each increase in  $P$  brought by a higher  $t_e$  becomes less valuable for the local firm, with the benefits of such increase being partially captured by the partners' firms. Consequently, the FTA reduces the home government's ability to use its tariff to shift consumers' surplus to producers', thus softening its marginal “distributive” incentives to raise  $t_e$ .

Those four reasons constitute the economic motivations leading to Proposition 1. They reinforce each other at inducing governments forming a FTA to reduce their external tariffs. It is also direct to see that all of them are strengthened once the FTA is enlarged – i.e., once  $M$  increases.<sup>17</sup>

It should be noted, however, that I am not the first to claim that a FTA induces a reduction of its members' external tariffs. The first to note that were Kennan and Riezman (1990), who simulated some examples in a general equilibrium trade model. Richardson (1993) and, more recently, Bagwell and Staiger (1999) have also noted this possibility. The former shows, in a perfect competition setting, that countries within a FTA might compete for tariff revenues generated by imports from non-preferential sources, and that this would result in lower external tariffs. Though the model structures are quite distinct, Richardson's reasoning could be seen as the correspondent of the tariff revenue effect identified above. Bagwell and Staiger (1999) also identify a "tariff complementarity" between tariffs applied on distinct sources of a good, in a "competing exporters" model with fixed supply and competitive markets. In this paper's specification, their reasoning could be seen as analogous to the change in the terms of trade effect and the tariff revenue effect taken together.

The weakening of the strategic and the distributive motives for protection, on the other hand, are novel to the literature. They indicate that a "dissipation of rents" will follow the creation of a FTA. That is, the FTA will make the shifting of rents from the foreign firms and from the local consumers to the domestic producer more difficult. As a consequence, the latter will have less incentive to lobby for higher tariffs under the FTA than otherwise.

It is true, however, that Proposition 1 need not hold for *any* specification. There are, in fact, studies pointing to the other direction, i.e., suggesting that tariffs might increase as a consequence of FTAs. Examples of these are Panagariya and Findlay (1996) and Cadot et al. (1999), both of them employing a 3-good-3-country specific factors model. Cadot et al. use a reasoning similar to Richardson (1993) and assert that the introduction of political economy issues *a la* Grossman and Helpman (1994, 1995), when general equilibrium effects through the labor market are taken into account, *may* turn Richardson's results around, though noting that in most cases this will not happen. Panagariya and Findlay, on the other hand, assume that tariffs arise from the allocation of labor itself into lobby activities. Then, since a FTA between two countries makes lobbying for

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<sup>17</sup> Notice in addition that the analysis with a distinct number of oligopolistic firms in each country could be also done here without additional costs, as the role of more firms would be similar to the role of the parameter  $M$ . For instance, a FTA with a country possessing  $n_p$  firms would be equivalent (from the home country's perspective) to a FTA with  $n_p$  countries having each one firm. Thus, the model would predict, for example, reductions of Mexico's external tariffs considerably larger than those on the U.S. external tariffs, after the creation of NAFTA.

protection against the partner innocuous, it reduces the overall demand for labor. This, in turn, reduces wages and makes the use of labor to lobby against the third country more attractive, whence the external tariffs tend to increase.<sup>18</sup>

Important as they may be, the model used here does not capture these kinds of general equilibrium effects. On the other hand, it clarifies a wide spectrum of motivations that might lead to the claimed external tariffs' reduction, incorporating as special cases other studies reaching the same result, as pointed above, while identifying the novel strategic and distributive effects. The mitigation of the strategic and the distributive motives for protection has also an additional – and crucial – implication. As I shall clarify in the next section, they indicate that the political economy distortions in the governments' tariff decisions are smaller when countries are integrated in FTAs, whence governments will be more likely to support a welfare-improving multilateral liberalization when countries are grouped in FTAs.

The external tariffs' reduction is important also to indicate that countries left out of FTAs are not necessarily worse off afterwards. Indeed, in this model the reduction is strong enough to ensure an *increase* of the non-preferential imports in each of the FTA markets, a contingency usually neglected in the literature. This result reflects the net effect of two forces with opposite directions, from the perspective of the FTA non-members: (a) more stringent competition within each of the FTA markets, because of the elimination of the intra-FTA tariffs; and (b) the reduction of the external tariffs (Proposition 1). The former push  $q_n^f$  down, but the latter bring it up and actually dominate (a). Hence, FTAs in economic environments like the one studied here generate overall net “trade creation,” as Proposition 2 shows:

**PROPOSITION 2:** *A FTA generates overall “trade creation,” as it induces an increase of the trade flows between every pair of countries. More specifically, a FTA with  $M$  countries,  $M \in [2, N - 1]$ , has the following effects on the volumes of trade:*

- (i) *The trade flows between the FTA member countries strictly increase.*
- (ii) *The trade flows between the FTA member and non-member countries strictly increase.*
- (iii) *The trade flows between the FTA non-member countries remain constant.*

Though items (i) and (iii) are relatively straightforward, item (ii) is the most interesting – and perhaps surprising – part of Proposition 2, proved in the Appendix. It indicates that a FTA

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<sup>18</sup> Assertions that external tariffs should increase once a PTA is formed are typical also in the analysis of Customs Unions where the focus is on market power effects. A widely cited example of that literature is Krugman (1991).

might be indeed an “authentic” form of trade liberalization, as the reduction of trade barriers benefits *all* foreign exporters in spite of the discrimination that the arrangement imposes on the non-members. Item (ii) is also in stark contrast with the results of Krishna (1998), who uses a similar framework but concludes that FTAs cause mainly *trade diversion*, by *reducing* the trade flows between FTA members and non-members. Here, Proposition 2 implies the opposite, associating FTAs with *trade creation*. The reason for such difference relies primarily on the endogeneity of tariffs, which is present here but, as indicated in the onset, is assumed away by Krishna.<sup>19, 20</sup>

Kennan and Riezman (1990) and Bagwell and Staiger (1999) find that FTAs might lead to overall trade creation as well. None of those works and neither this paper can, however, assure generality to that result. Nevertheless, as the proof of the proposition indicates, what is required is only that the FTA indirect and positive effect on  $q_h^f$  through the change of the external tariff outweighs the FTA direct and negative impact on  $q_h^f$  through enhanced competition. Naturally, this might be accomplished by other specifications as well.<sup>21</sup>

It is worth analyzing also the role of political economy in the trade creation result. Note first that political economy, as manifested in the parameter  $b$ , is not critical for Propositions 1 and 2, which hold even if  $b = 0$ . However, I have already indicated that the equilibrium tariff increases with  $b$ , as a higher  $b$  increases the importance of both the strategic and the distributive motives for protection. But then, considering that a FTA weakens both of these “proportional-to- $b$ ” protectionist motivations, one may expect the FTA-induced external tariffs’ reduction and volume of trade created to be proportional to  $b$  as well. Proposition 3, which is proved in the Appendix, shows that this is indeed the case.

***PROPOSITION 3:*** *The FTA-induced external tariffs’ reduction and trade creation are larger the more politically motivated are the FTA member governments.*

Proposition 3 shows that, while governments more easily influenced by political lobbies are more protectionist, they will be also more affected by the trade-creating aspect of a FTA. Therefore,

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<sup>19</sup> I explore the consequences of endogenizing external tariffs in Krishna’s framework more thoroughly in Ornelas (2000).

<sup>20</sup> Grossman and Helpman (1995) also find that FTAs are more likely to be formed when it generates ‘net’ trade diversion. As Krishna (1998) – though under a quite distinct framework –, they also assume exogenous external tariffs.

<sup>21</sup> It is important to stress that, even without Proposition 2, Proposition 1 would still ensure a shift *toward* trade creation – and toward making non-members better off. On the other hand, frameworks that treat the external tariffs as exogenous shutdown this indirect effect, and non-members can never gain with a FTA.

the dissipation of rents promoted by a FTA will have its widest consequences precisely on the more politically influenced economies.

The proposition also provides a test for inter-industry comparisons. It implies that the constitution of a FTA should induce larger external tariffs' reduction and trade creation precisely in the more politically active sectors. Moreover, since the strategic motive for protection is specific to oligopolistic settings, the proposition suggests also that those effects should be stronger in more concentrated industries.

## IV – Will Governments Want to Form FTAs?

I consider that a specific FTA of generic size  $M$  becomes exogenously available to the home government – as a result of diplomatic negotiations with the other potential members, for instance. I then investigate the conditions under which the government endorses the arrangement.

I note first that a FTA may or may not be welfare-improving.<sup>22</sup> On the one hand, it necessarily increases consumer surplus, as a result of both the elimination of the internal trade barriers and the reduction of the external ones. On the other hand, the impact of a FTA on tariff revenue and profits is in general ambiguous. Whereas the overall lower trade barriers tend to reduce tariff revenue, the revenue due to the increase of imports from non-members (Proposition 2) may, under some circumstances, outweigh that effect. Regarding profits, the earnings in the local market surely fall, because of the enhanced competition. In contrast, the free access to the other members' markets necessarily increases the export profits.<sup>23</sup>

The decision of the home government about whether to support an arrangement or not depends in part on its welfare consequences. It is, however, also influenced by the FTA impact on the lobby contributions. Specifically, the government endorses the FTA only if the arrangement increases *its* equilibrium payoff, be that criterion in accordance with the change in the national welfare or not.

More specifically, the home government's initial equilibrium payoff is given by  $G = W(t^p) + bD^*(t^p)$ , dropping the subscript "h" for notational convenience. Denoting the country's aggregate export profits by  $\Pi^{ROW}\{t^p\}$ <sup>24</sup> and its *local* welfare – i.e., its total welfare minus the export profits –

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<sup>22</sup> Unless explicitly stated otherwise, whenever I refer to welfare changes due to a trade agreement, I will be referring to the welfare of a participating country, not to world or outsiders' welfare.

<sup>23</sup> Although these profits are partially outweighed by the partners' lower external tariffs, it can be easily seen from the comparison between  $q_h^f$  in equation (1) and  $q_h^p$  in equation (1') that they will always increase with a FTA. Note also that a FTA does not alter the export – and the consequent profits – from members to non-member countries.

by  $W_M^l(t^p)$ , I can use the expression for  $D^*(t^p)$  derived in Section II [equation (3)] to respecify the government's initial payoff as:

$$G = W^l(t^*) + \Pi^{ROW}[\{t_j^p\}]. \quad (8)$$

Equation (8) reflects the fact that the principal-agent specification ensures that the government is (just) compensated for raising its own tariff beyond the level that maximizes local welfare. As a result, the government's payoff is the same it would get in the absence of any political economy – in which case it would set the tariff at the level that maximizes local welfare,  $t^*$ . Therefore, the government's payoff is higher than actual national surplus, and it does not internalize any welfare distortion due to its use of the “political” tariff. Naturally, it does not internalize the effects of the political tariffs *elsewhere*, since it is not compensated for the foreign political economy distortions.

If the government decides to enter in the FTA, both aggregate welfare and the political contributions change. Indicating the variables under the FTA by a subscript  $M$ , the government's payoff under the FTA can be analogously specified as:

$$G_M = W_M^l(t_e^*) + \Pi_M^{ROW}[\{t_j^p\}]. \quad (9)$$

Thus, the government will be willing to endorse the FTA iff  $G_M \geq G$ . Defining  $\Pi_{\Delta M}^{ROW} \equiv \Pi_M^{ROW}[\{t_j^p\}] - \Pi^{ROW}[\{t_j^p\}]$ , this condition can be rewritten as:

$$\Pi_{\Delta M}^{ROW} \geq W^l(t^*) - W_M^l(t_e^*). \quad (10)$$

Notice that  $\Pi_{\Delta M}^{ROW} > 0$  always, as the FTA does not alter the export profits in the outsiders' markets but surely increases them in the partners' markets.

The condition under which the FTA is welfare-improving, in contrast, is that:

$$\Pi_{\Delta M}^{ROW} > W^l(t^p) - W_M^l(t_e^p). \quad (11)$$

It is then clear from conditions (10) and (11) that governments do not face the “right” incentives when deciding whether or not to endorse a FTA, as they do not evaluate the trade regimes from an efficiency perspective, but rather from the appraisal of their “politically distorted” equilibrium payoffs.

What could then be said about the governments' appraisal of FTAs? Will those payoff distortions make a government evaluate a FTA from a more optimistic perspective than would a

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<sup>24</sup> The functional dependence of country  $H$ 's export profits on  $\{t^p\}$  indicates that they depend on the trade barriers imposed by all countries  $j \neq H$ . Those tariffs will depend on the political susceptibility of the foreign countries' governments – i.e., on the level of their political parameters – and also on the foreign countries' trade regimes – that is, on whether they participate in FTAs and, if so, on their sizes.

welfare-maximizer entity, or will the opposite occur? Before answering that, it is useful to evaluate first the relationship between the impact of a FTA on the welfare of a participating country and its internal political economy. This will help position the government's view of a FTA in relation to the arrangement's welfare consequences.

**Proposition 4:** *A FTA improves the welfare of a participating country by more (or reduces it by less), the stronger is its government's political bias.*

**Proof:** Defining  $W_{\Delta M}^l(b) \equiv W_M^l[t_e^p(b)] - W^l[t^p(b)]$ , the impact of a FTA on the welfare of a participating country can be denoted as  $W_{\Delta M}^l(b) + \Pi_{\Delta M}^{ROW}$ . Since  $\Pi_{\Delta M}^{ROW}$  depends only on the *external* political conditions, the proposition's claim can be represented simply as  $\partial W_{\Delta M}^l(b)/\partial b > 0$ , and although  $M$  is an integer, showing that  $\frac{\partial}{\partial b} \left[ \frac{\partial W_M^l(t_e^p)}{\partial M} \right] > 0$  is sufficient to prove it. After substituting  $t_e^p$  [from equation (6')] into the definition of local welfare, this derivative can be straightforwardly computed. Proceeding along these lines, calculations reveal that:

$$\frac{\partial}{\partial b} \left[ \frac{\partial W_M^l(t_e^p)}{\partial M} \right] = \frac{4(A-c)^2 b(M+1)(N+1)[(N/2-1-b)M + (2+b)N - 1/2]}{[(M-1/2-b)N + (1/2+b)M + 1]^4} \quad (12)$$

which is strictly positive  $\forall N \geq 3, M \geq 1$  and  $b < 1/2$ , thus ratifying the proposition. ■

Considering the results of the previous section, the proposition's intuition becomes relatively simple. When countries integrate in a FTA, the "political tariff" diverges *less* from the "optimal tariff" than it would otherwise, as a result of the FTA-induced strategic and distributive effects. Consequently, the political activities, which push national welfare away from its optimal level, become less relevant. Hence, by dissipating the political rents, the welfare impact of a FTA becomes more prominent precisely when the political forces are stronger.

Using that result, I can now evaluate the governments' view of a FTA vis-à-vis the arrangement's welfare consequences. Proposition 5 shows that the political distortions will always make governments overlook part of the welfare gains from a FTA, but that will at least ensure that no welfare-reducing arrangements can be supported.

**Proposition 5:** *A politically motivated government will never endorse a welfare-reducing FTA; it may, nevertheless, also obstruct a welfare-improving FTA. This is more likely to happen the more politically biased*

is the government.

**Proof:** Proposition 4 implies that, for  $\bar{b} > \underline{b}$ ,

$$W_{\Delta M}^l(\bar{b}) + \Pi_{\Delta M}^{ROW} > W_{\Delta M}^l(\underline{b}) + \Pi_{\Delta M}^{ROW}. \quad (13)$$

Setting  $\underline{b} = 0$  and noting that  $t^p(b=0) = t^*$  and  $t_e^p(b=0) = t_e^*$ , (13) can then be rewritten as:

$$W^l(t^*) - W_M^l(t^*) > W^l(t^p) - W_M^l(t_e^p). \quad (14)$$

Inequality (14) shows that the right-hand-side of (10) is necessarily greater than the right-hand-side of (11), so (10)  $\Rightarrow$  (11). Recalling that a politically motivated government endorses a FTA whenever condition (10) holds, while the FTA is welfare-improving only if condition (11) is satisfied, this means that a government never endorses a welfare-reducing FTA. On the other hand, (14) is compatible with a FTA that leads to:

$$W^l(t^*) - W_M^l(t^*) > \Pi_{\Delta M}^{ROW} > W^l(t^p) - W_M^l(t_e^p), \quad (15)$$

which corresponds to the case where the FTA is welfare-enhancing but is not supported by the government – i.e., among conditions (10) and (11), only the latter is satisfied. Finally, since the right-hand-side of (15) decreases with the local government’s political parameter (from Proposition 4) but its other terms do not change with  $b$ , a higher  $b$  makes condition (15) hold under a broader range of parameters, and in this sense the obstruction of a welfare-enhancing FTA becomes more likely when the home government’s political bias is stronger. ■

Proposition 5 indicates that political economy tends to make FTAs approved under fewer circumstances than it would be socially optimal. This is a direct consequence of the distortions imposed by the political activities on the country, but which are not internalized by the government. These political distortions, on the other hand, will never induce a government to support welfare-reducing preferential arrangements. In this sense, Proposition 5 could be understood as indicating that the political biases tend to make governments more “conservative” in their decisions regarding the approval of FTAs, endorsing only those arrangements substantially improve national welfare.

Proposition 5, in conjunction with Proposition 2, can be used also to evaluate the consequences of FTAs *for world* welfare. On the one hand, Proposition 5 indicates that the governments of member countries will endorse only arrangements that enhance their countries’ welfare. On the other hand, Proposition 2 implies that FTAs benefit the outside countries, because of the overall trade creation that the arrangements produce. Hence, we find that if a FTA is created, *all* countries benefit from it.

**Corollary 1:** *Since, in spite of political economy considerations, a government endorses a FTA only if it enhances its country's welfare, and since trade creation ensures gains for the non-members, every country gains when a FTA is formed.*

Corollary 1 indicates that, as far as the “static” effects of FTAs are concerned, they should be viewed as “stepping stones” of the multilateral trade system. Note in particular the distinction between Corollary 1 and the results of Grossman and Helpman (1995) and Krishna (1998) discussed in the outset: while in those frameworks FTAs arise mostly when they are harmful, here they take place only if they are helpful. It is worth stressing that, in a framework like the one used here, where governments can affect terms of trade, can make use of tariffs for strategic reasons, and are affected by political influences, Corollary 1 may seem too surprising. It is nevertheless just a consequence of the external tariffs’ reduction identified in Proposition 1, which leads to Proposition 2, and in particular to the “strategic” and the “distributive” effects, which are ultimately the driving forces behind Proposition 5.

## **V – FTAs and Multilateral Liberalization**

I study now the impact that free-trade agreements may have on the prospects of multilateral liberalization (ML). The previous section showed that, if a FTA is formed, it will benefit every country, members and outsiders. But even if preferential trade arrangements are beneficial in the “static” sense, they might be still harmful if they undermine the viability of multilateral liberalization.

Some authors, as Levy (1997), Krishna (1998) and McLaren (1999), have showed that this may be indeed a serious possibility. I address this issue by evaluating how the membership in a FTA, and in FTAs of distinct sizes, alters the willingness of a government to support a ML, assumed to be exogenously available to the country. As those authors, I define “multilateral liberalization” as the elimination of all world trade barriers.

As in the appraisal of FTAs, when deciding whether to support a ML or not, the home government considers not only its welfare effects, but also the elimination of the lobby contributions that multilateral free-trade would imply. That is, the government supports a ML only if general free-trade, the change in the national welfare notwithstanding, enhances *its* equilibrium payoff.

When the country is member of a FTA of generic size  $M$ , the government’s payoff is given by equation (9). I consider this to be the “initial” situation now, noting that this is without loss of

generality, as a  $M = 1$  represents the case when the country is not within any FTA. Under general free-trade, on the other hand, all tariffs are set to zero and there is no scope for lobbying, so  $G_{FT} = W_{FT}$ , where the subscript “FT” indicates that the variable is evaluated under multilateral free-trade. Thus, the government will be willing to support a ML iff  $G_{FT} > G_M$ , or equivalently, iff:

$$W_{FT} > W_M^l(t_e^*) + \Pi_M^{ROW}[\{t_j^p\}]. \quad (16)$$

In contrast, a ML is welfare-improving for the country whenever:

$$W_{FT} > W_M^l(t_e^p) + \Pi_M^{ROW}[\{t_j^p\}].^{25} \quad (17)$$

As in the evaluation of FTAs, it is clear that governments do not face the “right” incentives with respect to whether or not to support a ML, as they appraise the status quo regime from the perspective of their “politically distorted” equilibrium payoffs. Such distortion may lead to an inefficient decision when:

$$W_M^l(t_e^*) + \Pi_M^{ROW}[\{t_j^p\}] > W_{FT} > W_M^l(t_e^p) + \Pi_M^{ROW}[\{t_j^p\}]. \quad (18)$$

In that case, although general free-trade improves the country’s welfare, the government does not want to liberalize multilaterally. So, if condition (22) holds, the government makes a “wrong” decision regarding the support of a ML.

In order to analyze how the establishment of FTAs affect the incentives for ML, I evaluate how the parameters’ range under which a ML improves the home country’s aggregate welfare, but is not supported by its government, changes when the country enters in a FTA – or enlarges its current one. It is in this sense that I will assert that it is more or less “likely” that the government will support a ML. Rewriting condition (22) as:

$$W_M^l(t_e^*) > W_{FT} - \Pi_M^{ROW}[\{t_j^p\}] > W_M^l(t_e^p), \quad (18')$$

one can then affirm that, the narrower is that interval – i.e., the smaller is the difference  $[W_M^l(t_e^*) - W_M^l(t_e^p)]$  –, the less likely the home government will inefficiently choose not to liberalize multilaterally.<sup>26</sup> With that understanding, Proposition 6 shows that the undermining of a welfare-enhancing ML becomes *less likely* once countries form FTAs – or enlarges their current ones.

**PROPOSITION 6:** *A government is more likely to support an welfare-improving ML if its country is within a FTA (or within a larger FTA) than otherwise.*

<sup>25</sup> Notice that a ML might enhance the country’s welfare, but this need not be the case, as long as the trade regimes and the local political economy activities vary across countries. If all countries shared the same trade regime (i.e., if the world were divided in symmetric FTAs – or if it did not have any FTA), a ML would be surely welfare-improving for all countries, but otherwise this may not be the case. In particular, when the rest of the world is already substantially open, a ML is less beneficial and may not compensate the costs of the own liberalization.

<sup>26</sup> Note that  $W_M^l(t_e^*) - W_M^l(t_e^p)$  is always positive, since by definition  $t_e^*$  is the tariff that maximizes local welfare.

**Proof:** Since Proposition 4 asserts that  $\frac{\partial}{\partial b} \left[ \frac{\partial W_M^l[t_e^p(b)]}{\partial M} \right] > 0 \quad \forall M \in [1, N]$  and  $\forall b \in [0, \frac{1}{2}]$ , it is also true that

$\{W_{M2}^l[t_e^p(\bar{b})] - W_{M1}^l[t_e^p(\underline{b})]\} - \{W_{M2}^l[t_e^p(\bar{b})] - W_{M1}^l[t_e^p(\underline{b})]\} > 0 \quad \forall \bar{b}, \underline{b}, M1$  and  $M2$  such that  $\frac{1}{2} > \bar{b} > \underline{b} > 0$  and  $N > M2 > M1 \geq 1$ . In particular, this is true for  $\underline{b} = 0$ , so since  $t_e^p(b = 0) = t_e^*$ , rearranging this expression one finds that  $\{W_{M2}^l(t_e^*) - W_{M2}^l[t_e^p(\bar{b})]\} < \{W_{M1}^l(t_e^*) - W_{M1}^l[t_e^p(\bar{b})]\}$ , thus proving the proposition. ■

The rationale behind Proposition 6 is simple. As indicated above, governments do not consider a ML from an efficiency perspective, evaluating the status quo regime based on  $W_{M^l}(t_e^*)$ , rather than on  $W_{M^l}(t_e^p)$ . But when their countries integrate in a (larger) FTA, because the FTA-induced strategic and distributive effects reduce the discrepancy between the “political tariff” and the “optimal tariff,” the difference between  $W_{M^l}(t_e^*)$  and  $W_{M^l}(t_e^p)$  reduces and the governments’ decisions regarding the support of ML get *closer* to the efficient ones. Or more plainly, because FTAs dissipate rents, welfare considerations tend to predominate over political concerns in trade decisions taken under FTAs.

Proposition 6 is illustrated in figure 1. The figure shows how  $[W_M^l(t_e^*) - W_M^l(t_e^p)]$  behaves as  $M$  changes. For  $(A - c) = N = 10$ , it displays that expression for  $b = .15$ ,  $b = .25$  and  $b = .35$ . In all cases, the figure clearly shows the effect of a wider integration in diluting the impact of political economy forces in the local welfare. The figure also clarifies the role of the political parameter  $b$ , the responsible to make the undermining of an efficient ML possible. While the role of a FTA in raising the support for an efficient ML is not much relevant when  $b$  is low, it gets increasing importance as  $b$  rises. Under a high  $b$ , protection is “cheap,” what in turn induces strong political activities – and large distortions in the government’s equilibrium payoff.

It is opportune here to position Proposition 6 within the related literature. Note first that it shares a similarity with Staiger’s (1995) “bicycle theory.” Staiger’s main point is that a partial trade liberalization today facilitates future advances in the same direction. His reasoning is that the first step induces a reallocation of workers with sector-specific skills away from protected industries. Afterwards, those workers lose their sector-specific skills and, thus, their ability to obtain rents in the protected industry, hence reducing the resistance to further liberalization. Here, though in a very distinct context, a very similar reasoning is found: a partial liberalization (in the form of a FTA), also by help dissipating protectionist rents, acts as a facilitating device for further (multilateral) liberalization as well – i.e., FTAs work as “building blocks” of multilateral liberalization.

Proposition 6 relates also with the work of Maggi and Rodriguez-Clare (1998). Those authors identify conditions under which a government may seek a trade agreement as a commitment device aimed to neutralize harmful effects that political activities might have on its long run payoff. In their paper, these harmful effects emerge because of distortions in investment decisions that take place under protectionist regimes, and by which governments are not compensated. Here, a trade agreement (in the form of a FTA) might prevent detrimental future consequences of political activities as well, not with respect to inefficient investment decisions, but rather with those related to the hindering of an efficient ML.

With respect to the other authors evaluating the consequences of preferential agreements for the political viability of further multilateral liberalization, both Levy (1997) and Krishna (1998) find results in total opposition with Proposition 6.<sup>27</sup> Two methodological factors explain such divergence. One line of distinction between the modeling strategies here and in those works is, once again, the effect of the arrangements on the external tariffs, not an issue in their frameworks but, as seen, a critical one here. A second important difference regards the identity of the active agent in the decision of whether or not to endorse a FTA. In both Levy's and Krishna's models, this role is given to the private agent – the median voter in the former and the oligopolistic industry in the latter –, while the government has a passive position. Here, on the other hand, the government and the oligopolistic industry interact to determine the political equilibrium under any given trade regime, but it is the government who ultimately decides the destiny of a trade agreement, after considering the change in the political equilibrium that the agreement would imply.

## **VI – Concluding Remarks**

I study in this paper a topic that has attracted increasing attention from trade economists in recent years: the consequences of the spread of free-trade arrangements for the world trade system. Besides the positive interest that the topic certainly draws, there is also a normative reason for its study, which is the possible redesign of the WTO rules concerning preferential trade agreements. In order to analyze that, I use a framework that has as a critical element the endogenization of the FTAs members' external tariffs.

I examine first the “static” impact of a FTA on its members' external tariffs and on world trade flows, when I show that countries tend to reduce their external tariffs after joining a FTA. Four reasons contribute for that. First, a FTA reduces the terms of trade gains of each increase in

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<sup>27</sup> This is also the case of McLaren (1999). His reasoning, however, has no relation with political economy issues, but arises rather from the consideration of the role of adjustment and negotiating costs.

the external tariff. Second, a FTA reduces also the tariff revenue generated by each increase in the external tariff (the “tariff revenue effect”). Third, the profit-shifting motive for protection gets weaker under a FTA (the “strategic effect”). And fourth, a FTA also reduces the scope for national surplus redistribution by means of trade policies (the “distributive effect”). This external tariffs’ reduction is shown to be strong enough to enhance the trade flows between FTA members and non-members, as compared with the pre-FTA figures. As a consequence, a FTA ensures an overall “trade creation,” from which the outside countries benefit. I also show that, because both the strategic and the distributive effects are reinforced when the oligopolistic firms are politically active, the FTA-induced external tariffs’ reduction and trade created are larger the more politically motivated are the member governments.

Because the oligopolistic firms compensate their governments for the establishment of tariffs beyond their “optimal” levels, the governments’ decisions regarding other trade policies are moved away from efficiency criteria. Despite that, I show that governments will endorse only arrangements that enhance their countries’ welfare – although this relationship is not an equivalence, since some welfare-improving agreements may not be supported. As a consequence, if a FTA takes place, given that the outsiders are benefited from the trade creation that it induces, *every* country gains from it.

The compensation that governments receive from their political susceptibility are responsible also to shift their trade regimes decisions away from efficiency criterions. These “distorted preferences” may lead to the hindering of a welfare-improving multilateral liberalization in this model whenever the oligopolistic firms are politically active. I show, however, that the obstruction of an efficient ML is *less* likely to happen precisely when countries are integrated within FTAs. In such a case, the strategic and the distributive effects make political economy less relevant in the determination of trade decisions. This, in turn, induce governments to evaluate the costs and benefits of a ML more efficiently (i.e., less affected by special interests), indicating that the “dynamic” time-path impact of FTAs on the multilateral trade system seems as favorable as their “static” consequences.

The few empirical studies aimed to evaluate the impact of PTAs, though in general not very conclusive, seem consistent with the general conclusions of this paper. An example is Anderson and Norheim (1993), who find that the trade growth since the thirties has not been impaired by the proliferation of trade agreements, though trade within partners have increased faster – as Proposition 2 would imply, if taken from a dynamic perspective. More recently, Grether and Olarreaga (1998) also reveal trade figures in conformity with the theoretical conclusions of this

paper. They find that more open countries tend to have larger shares of preferential trade, a result that is consistent with the results identified here – though with an inverse causation.<sup>28</sup>

Summing up, this paper suggests that considering FTAs a threat to the multilateral trade system might constitute an exaggeration. A word of caution is, nevertheless, worth mentioning. The model used here is stylized in many aspects and does not incorporate a number of elements that are likely to be important to a “full” analysis of the topic in question. It abstracts from comparative advantage issues and from the existence of *partial* cooperation at the multilateral level, for example, as a way to make the mechanisms analyzed here more transparent. One must, therefore, have in mind these considerations while interpreting the paper’s results.

In any case, however, by studying FTAs under circumstances still not well explored in the literature, though presumably quite important to the topic’s understanding, I identify motivations that seem to support the view that FTAs might be, *yes*, a “building block” of the multilateral system.

## Appendix

### (A) The effects of a FTA on a member’s external tariff under a general demand structure:

I detail here the impact of a FTA on a country’s marginal incentives to determine its external tariffs under more general demand structures. I note also that, as long as the oligopolistic goods remain “strategic substitutes” (i.e.,  $\partial q^i/\partial q^j < 0$ ,  $i \neq j$ ), the analysis would apply for heterogeneous goods as well.

The marginal effect of an increase in  $t_e$  on the home government’s (equilibrium) objective function is represented by equation (7'). Applying the analysis of Dixit (1986), one obtains straightforwardly that  $\partial P/\partial t_e > 0$ ,  $\partial q^h/\partial t_e < 0$  and  $\partial q^j/\partial t_e > 0$ ,  $j = h, p$ , in any “well-behaved” case – i.e., provided that stability conditions are satisfied. As indicated in Section III, the Dixit’s analysis allows one to find also that, for a *given*  $t_e$ , the foreign firms getting into the FTA increase their sales at  $H$  and sustain a higher aggregate consumption and a lower price level in that market, the simultaneous reduction of the other firms’ sales notwithstanding. With these results, we can then obtain the signs of each effect generated by varying  $t_e$  when  $t_{int} = 0$ . For that purpose, I assume the home country FTA expands from  $M_1$  to  $M_2$  countries, with  $M_1 < M_2 < N$ ,<sup>29</sup> and denote this change by  $\Delta M$ .

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<sup>28</sup> Winters and Chang (2000) estimate the price effects of the Spain accession to the EC, finding that the elimination of tariffs against imports from members generated an increase on those countries’ export prices to Spain, relative to the non-members’ prices. It is worth noting that, whereas the authors present that evidence as an indication that EC non-members were harmed, their findings are also compatible with the model used here, where the non-member exporters gain, but gain *less* than the member exporters.

<sup>29</sup> Naturally, if  $M_1 = 1$ , this corresponds to the *creation* of a FTA, and otherwise it is the *enlargement* of an existent one.

The change in the terms of trade effect caused by  $\Delta M$  can be expressed as  $-q_h^f \left(1 - \frac{\partial P}{\partial t_e}\right) + (N - M) \left[ \frac{\Delta q_h^f}{\Delta M} \left(1 - \frac{\partial P}{\partial t_e}\right) - q_h^f \frac{\Delta}{\Delta M} \left(\frac{\partial P}{\partial t_e}\right) \right] - q_h^p \frac{\partial P}{\partial t_e} + (M - 1) \left[ -\frac{\Delta q_h^p}{\Delta M} \frac{\partial P}{\partial t_e} - q_h^p \frac{\Delta}{\Delta M} \left(\frac{\partial P}{\partial t_e}\right) \right]$ . The third and, provided that  $\partial P / \partial t_e < 1$ , the first term above are both negative, as with the first element of the two square brackets. Therefore, sufficient conditions for the whole expression to be negative – and therefore favor a lower external tariff under the new regime – are that  $\Delta(\partial P / \partial t_e) / \Delta M > 0$  and  $\partial P / \partial t_e < 1$  – or at least that  $\Delta(\partial P / \partial t_e) / \Delta M$  and  $(1 - \partial P / \partial t_e)$  be not *too* negative. Noting that  $\Delta(\partial P / \partial t_e) / \Delta M = P''(\partial Q / \partial t_e) \Delta Q / \Delta M$ , where  $P''$  denotes the demand curvature and since  $\partial Q / \partial t_e < 0$  and  $\Delta Q / \Delta M > 0$ , and that  $\partial P / \partial t_e > 1$  only with a sufficiently convex demand (see Dixit, 1986), the whole expression will remain negative as long as the demand is not too convex. [In the linear demand case,  $\partial P / \partial t_e < 1$  but  $\Delta(\partial P / \partial t_e) / \Delta M < 0$ . The latter is, however, not strong enough to reverse the expression's negative sign.]

With respect to the “tariff revenue effect,” before the FTA expansion its correspondent term in (7') can be expressed as  $\left[ (N - M_2) t_e \frac{\partial q_h^f}{\partial t_e} + (M_2 - M_1) t_e \frac{\partial q_h^p}{\partial t_e} \right]$ , while afterwards it becomes  $\left[ (N - M_2) t_e \frac{\partial q_h^f}{\partial t_e} \right]$ . Since  $\partial q_h^p / \partial t_e > 0$ , the whole expression becomes more negative after the FTA expansion unless the change in  $\partial q_h^p / \partial t_e$  is positive and large enough to overturn the FTA direct effect. [In the linear demand case,  $\Delta(\partial q_h^p / \partial t_e) / \Delta M < 0$ , thus *reinforcing* the direct effect.]

The “strategic effect,” in turn, corresponds to a change of  $(1 + b) \left[ (P - c) \frac{\Delta P}{\Delta M} \left(\frac{\partial q_h^h}{\partial t_e}\right) + \frac{\Delta}{\Delta M} \left(\frac{\partial q_h^h}{\partial t_e}\right) \right]$  when the FTA expands. Since  $\partial q_h^h / \partial t_e > 0$  and  $\Delta P / \Delta M < 0$ , it favors a lower external tariff unless  $\Delta(\partial q_h^h / \partial t_e) / \Delta M > 0$  and large enough to outweigh the FTA direct effect in increasing competition and reducing the local price. [In the linear demand case,  $\Delta(\partial q_h^h / \partial t_e) / \Delta M < 0$ , also *reinforcing* the direct effect.]

Finally, the “distributive effect” corresponds to a change of  $b \left[ (P - c) \frac{\Delta q_h^h}{\Delta M} \left(\frac{\partial P}{\partial t_e}\right) + q_h^h \frac{\Delta}{\Delta M} \left(\frac{\partial P}{\partial t_e}\right) \right]$  when the FTA expands. Since  $\partial P / \partial t_e > 0$  and  $\Delta q_h^h / \Delta M < 0$ , it favors a lower external tariff unless  $\Delta(\partial P / \partial t_e) / \Delta M > 0$  and large enough to offset the FTA direct effect in increasing competition and reducing the local sales of the domestic industry. Using again the fact that  $\Delta(\partial P / \partial t_e) / \Delta M = P''(\partial Q / \partial t_e) \Delta Q / \Delta M$ , this constraint is equivalent to a demand not too *concave* – in contrast with the requirement on the terms of trade effect. [In the linear demand case,  $\Delta(\partial P / \partial t_e) / \Delta M < 0$ , once again *reinforcing* the direct effect.]

In summary, the paper's results are based on the seemingly least questionable, direct effects of a FTA – namely, that in each member country, with everything else constant, it enhances competition by offering free access to the partners' exporters. This, in turn, reduces the domestic and the non-member firms' sales in the local market, but increases the partners' sales to an extent that suffices to ensure a reduction the local price. All arguments used in the discussion of Proposition 1 focus on these effects. Whereas there exist other, subtler reasons related to the demand curvature that may play in the opposite direction, it is unclear that

they could be strong enough to overturn the direct effects. Nonetheless, in the most conservative perspective, I can at least state that the results hold if the demand is neither too convex nor too concave.

**(B) Proof of Proposition 2:**

(i) Take any pair of countries participating in the FTA. The sales from one to the other change from  $q_h^f$  (from equations 1) to  $q_h^p$  (from equations 1'). But since  $t_e^p$  and  $t_h^p$  are both strictly greater than zero, the result follows trivially from the comparison between  $q_h^f$  and  $q_h^p$ .

(ii) Take any pair of countries composed by a member and a non-member country. The sales from the former to the latter are unaltered by the FTA, since the tariffs outside the FTA do not change. On the other hand, the sales from the non-member to the member strictly increase with the FTA – or with its enlargement. In order to show that, note first that the impact of the FTA on the non-member exports to the member can be characterized by the sign of  $\Delta q_h^f / \Delta M$ . But there is both a direct and an indirect effect of  $M$  on  $q_h^f$ :

$\frac{\Delta q_h^f}{\Delta M} = \frac{\Delta q_h^f}{\Delta M} \Big|_{t_e^p \text{ fixed}} + \frac{\Delta q_h^f}{\Delta t_e^d} \frac{\Delta t_e^p}{\Delta M}$ . The first term is the FTA direct effect, which is negative because of the FTA

impact on  $q_h^f$  through enhanced competition. The second term corresponds to the FTA indirect effect on  $q_h^f$  through the change in the external tariff, which is positive because of Proposition 1. Proposition 2 states that the second term dominates the first. But from equations (1') and (6'), having  $DEN(t_e^p)$  denoting the denominator of  $t_e^p$  and evaluating  $\Delta q_h^f / \Delta M$  with derivatives, calculations reveal that:

$$\frac{\Delta q_{h,M}^f}{\Delta M} = \frac{(3+2b)}{DEN(t_e^d)} t_e^p > 0, \quad (19)$$

so indeed the FTA indirect effect outweighs its direct effect on  $q_h^f$ .

(iii) Since tariffs do not change outside the FTA, the result follows immediately. ■

**(C) Proof of Proposition 3:**

The proposition states that the external tariffs' reduction induced by a FTA should be larger when governments are more politically motivated – that is, when  $b$  is higher. Although  $M$  is an integer, showing

that  $\frac{\partial^2 t_e^p}{\partial M \partial b} < 0$  suffices for the proof. Calculations reveal that:

$$\frac{\partial^2 t_e^d}{\partial M \partial b} = -\frac{1}{[DEN(t_e^d)]^2} \left\{ \left[ \frac{\partial t_e^d}{\partial b} (5+2b+2N) + 2t_e^d \right] DEN(t_e^d) - t_e^d (5+2b+2N) \frac{\partial DEN(t_e^d)}{\partial b} \right\}. \quad (20)$$

The square bracket and  $DEN(t_e^p)$  are both positive. But since  $\partial DEN(t_e^p) / \partial b = -2(N-M) < 0$ , then the whole expression (20) must be negative.

Proposition 3 asserts also that the higher is  $b$ , the more trade a FTA will create. In order to show that, I differentiate expression (19), which gives the volume of trade created by a FTA, with respect to  $b$ , obtaining as a result:

$$\frac{\partial \left( \frac{\Delta q_{h,M}^f}{\Delta M} \right)}{\partial b} = \frac{2}{DEN(t_e^p)} \left[ t_e^p + \left( \frac{3}{2} + b \right) \frac{\partial t_e^p}{\partial b} - \frac{1}{DEN(t_e^p)} \frac{\partial DEN(t_e^p)}{\partial b} \right]. \quad (21)$$

This is certainly positive, as  $\partial DEN(t_e^p)/\partial b < 0$  but all other terms are positive. ■

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**Figure 1 - The impact of the political process on the local welfare**

