

Winners and Losers in a Free Trade Area between The United States and MERCOSUR

Marcel Vaillant – Alvaro Ons

Resumen

Este documento considera una eventual zona de libre comercio entre los EUA y el MERCOSUR con el propósito de construir dos listas de productos (SA 6 dígitos), una expansiva (oportunidades comerciales) y otra defensiva (peligros comerciales), para cada uno de los países participantes en el acuerdo. El modelo teórico de referencia es el modelo de Grossman y Helpman de la economía política de los acuerdos de libre comercio. Se desarrolló una metodología original para la determinación de peligros y oportunidades basada en índices de especialización comercial e información de política comercial. Las asimetrías de tamaño económico han sido introducidas en el análisis a través de una implementación empírica de la tipología teórica de regímenes de protección (protección ampliada y reducida). Las principales conclusiones son: i) los productores agrícolas de EUA enfrentan peligros mientras que los productores agrícolas del MERCOSUR podrían tener oportunidades; ii) no hay oportunidades claras para los productores de EUA en el MERCOSUR (mercado reducido) mientras que los productores de manufacturas del MERCOSUR enfrentan peligros en el mercado regional; y iii) las oportunidades del MERCOSUR están concentradas en manufacturas livianas.

Abstract

This document considers an eventual Free Trade Area between the US and MERCOSUR with the objective of constructing two lists of products (HS 6 digits), one expansive (trade opportunities) and one defensive (trade perils), for each of the participants in the agreement. The theoretical model of reference is the Grossman and Helpman model of the politics of Free Trade Agreements. An original methodology for the opportunities and perils determination based on trade specialisation indexes and trade policy data has been developed. The economic size asymmetries have been introduced into the analysis through an empirical implementation of the regimes of protection typology provided by the theory (enhanced and reduced protection). The main conclusions are: i) agricultural producers in the US face a peril while agricultural producers in MERCOSUR could have opportunities (improvement in international prices); ii) there are no evident opportunities for US producers in the MERCOSUR (reduced size of the market) while producers of manufactures in the MERCOSUR face an evident peril in the regional market; and iii) MERCOSUR opportunities are concentrated in lighter manufactures.

Winners and Losers in a Free Trade Area between The United States and MERCOSUR

Marcel Vaillant – Álvaro Ons

1. Introduction

Three successive summits of heads of state and government of the Americas, and six ministerial meetings, have established the terms for carrying forward and concluding the negotiations for the creation of the Free Trade Area of the Americas (FTAA), which should come into force in the second half of the present decade. A renewed impulse has been given to hemisphere negotiations, which could mean a significant change in trade and economic relationships within the continent and also with the rest of the world.

In international trade negotiations, a priority objective for the MERCOSUR countries is to improve their market access conditions in high income countries, so as to achieve better export performance. The new strategies are oriented to establishing preferential trading arrangements with the industrialized economies. The MERCOSUR countries are involved in various trade negotiations, among which those with the US stand out.

One of the main benefits which the MERCOSUR countries expect from the FTAA process is to gain increased access to the big markets of North America. However, this process will also lead to a reduction in differentials in the regional trade preferences of the four MERCOSUR countries. The negotiations would result in important consequences for the foreign trade of each of the countries in the region and also for their economic performance, in function of their trade patterns, in particular those within the region and with the US.

In recent months there has been growing skepticism about the likelihood that a free trade area will be constituted on the announced date. From the Initiative of the Americas at the beginning of the nineties, through the Summit of the Americas in Miami in 1994, and up to the Summit of Quebec in 2001, the time invested in the negotiation process has not yielded definite results for the MERCOSUR countries. Market access to the US is still difficult, and the situation is worsening in some industries such as agricultural products. One illustration of this was the recent Farm Bill Law. The FTAA is turning out to be a very long negotiation process with an “infinite” agenda of issues (relative to negotiation capacities) and a big and heterogeneous group of countries (the 34 countries of the continent). The advantages of the FTAA strategy with respect to multilateral negotiation have not yet become clear.

Up to now, the main output of the FTAA process has been the production and interchange of information, and the construction of a specific agenda of the many points involved in the negotiations. The large number of meetings and the interchange of information have had a positive impact on the countries in the region in terms of a learning process about new trade issues. For many countries in the region there is also a clear need to deepen structural reforms and build new domestic institutions in order to participate in the agreement.

The FTAA negotiations have been carried on with a plurilateral methodology, but some signs of bilateralism have been evident, specifically some parallel bilateral initiatives from the US to individual countries or blocks.

Unlike the European Union strategy, in which trade negotiations with other trade blocks in South America (the Andean Community and MERCOSUR) are viewed positively, the US has resisted this approach and prefers to negotiate in the plurilateral FTAA scenario or with individual countries (Chile and more recently Uruguay). There is a weak antecedent of negotiations with a block, the “Garden of Roses Agreement” of 1991, which is also known as the “4+1” agreement (Argentina, Brazil, Paraguay and Uruguay with the US). The very name of the agreement is a sign of US resistance to recognizing the MERCOSUR (even after 1994 when the MERCOSUR crystallized as a customs union) as a single partner which could be party to bilateral trade negotiations.

Without any doubt the most important and at the same time most complicated trade negotiation that the US has undertaken at the continental level is with Brazil. Brazil has shown real commitment to the MERCOSUR strategy, and it seems to lack conviction in its negotiations with the US, which would point to a weakness in the consistency of the regional trade block. For all these reasons, it is important to evaluate the resistance and the reciprocal opportunities that each MERCOSUR country and the US would have in the constitution of a bilateral Free Trade Area (FTA). In spite of the current lack of political realism, the evaluation of these forces is important. On the other hand, the likelihood of success in the trade negotiations currently under way is not high in any of the different scenarios where the reciprocal trade liberalization processes are taking place (multilateral, plurilateral and bilateral).

The objective of this study is to construct two lists of products, one expansive (opportunities) and one defensive (perils), for each of the participants in the US-MERCOSUR agreement. We argue that a government would have incentives to include in the trade liberalization agreement those industries on the opportunities list and to exclude those on the perils list.

The general focus here is of a mercantilist type; it implicitly assumes that exports are good and imports are bad. In fact, it is known that, in terms of an evaluation of the effects on economic welfare, exactly the opposite is true. However, in trade negotiations the mercantilist focus is very often equally or more decisive than considerations of added welfare. Trade negotiations are in their very essence mercantilist.

The idea is to identify the private interest groups that are for or against the trade arrangements between the US and the MERCOSUR countries. The importance of explicitly introducing the list of products to be excluded from the negotiations has been pointed out in the modern literature on the political economy of trade policy (Grossman and Helpman, 1995). From this perspective, the exceptions list improves the chances of signing a free trade agreement (FTA) because it makes it more palatable in political terms. The general results of these models are summed up by the fact that the ideal exceptions list of each partner is like an index of the comparative advantages of the other. As Grossman and Helpman (1995) explained, the conditions needed for the political viability of a Free Trade Agreement may contradict those that ensure its social desirability. The industries with more potential for trade creation, for which the FTA implies an improvement in welfare, are those where there will be more resistance in the import substitution country to accepting their inclusion in the agreement.

In a previous paper we applied this idea to the eventual trade agreements between the European Union and the South American countries, but we only considered perils to regional exports, and only studied the unilateral stances of the developing countries (see Vaillant and Ons, 2002). In this study, we extend the analysis by also considering the effects of the FTA in each domestic market. That is, we take into account a country's production interests inside its own market, in the regional market (for the MERCOSUR countries), and the potential expansion of its exports to the new partner. We propose a general methodology, and we study the effects of the eventual preferential trading agreement on exports and production on both sides (MERCOSUR and the US). We suggest an industry typology of the effects of the FTA on trade inside MERCOSUR (the US) and on exports from MERCOSUR (the US) to the US (MERCOSUR).

To sum up, our method consists in the analysis of trade flows and trade policy, and reaches conclusions about the unilateral stances of MERCOSUR countries and the US with respect to a bilateral FTA. A mercantilist perspective has been adopted, since it is the most pertinent from a political economy point of view. We explicitly include interests inside the US, and so we can analyze the position of the US government in relation to the agreement.

This paper is organized as follows. Section 2 presents the economic and welfare effects of an FTA in the different cases classified according to the partner's efficiency and its supply size. In section 3 a methodology for the empirical implementation of the previous typology is proposed. In section 4 the methodology is applied to the US-MERCOSUR agreement. Finally, section 5 contains conclusions.

2. Economic and welfare effects of an FTA: typology of cases

The production framework is specified as in a specific factors trade model¹. There are $n+1$ industries in each country: a numeraire industry (0) that only uses the mobile factor (labor), and n other industries that use labor and a sector-specific factor². All goods are produced with constant returns to scale, and there are fixed endowments of all specific factors. Hence the assignment decision is only made for the labor factor.

The consumers within each economy have identical preferences which are suitably represented by a quasi-linear utility function. Each individual is endowed with labor, and possibly with some sector-specific factor. The consumer receives a lump sum transfer from the government, which corresponds to the uniform redistribution of tariff revenue.

The owners of specific factors are all organized in lobby groups, and ownership is highly concentrated in the population. From the political economy point of view, the relevant economic interests are given by the owners of the specific factor in a certain sector (the producers), who seek to maximize their own industry profit function, and those consumers who are only endowed with labor.

The economy is small, and therefore world prices are given exogenously. Without loss of generality, all international prices (τ_i^*) are normalized to one. Initially, the most favored nation (MFN) principle holds. The trade policy (t_i^z) is a set of instruments that can

¹ The general analysis in this section closely follows that presented in Grossman and Helpman (1995), but we include a more explicit consideration of the traditional trade creation and trade diversion effects.

² The different industries in the economy are denoted by an index $i=0,1,\dots,n$.

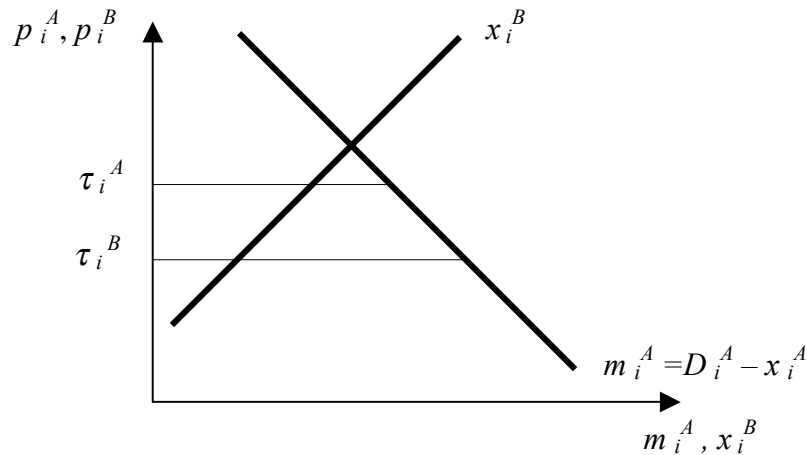
directly affect the domestic prices (τ_i^z) of export and import goods. The initial domestic price of any export good is one (the international price) while import goods may be taxed³.

Countries A and B exhibit the qualitative features mentioned above, and they are negotiating an FTA. In this context, the relevant cases are given by those products which are initially imported by at least one of the countries, subject to an MFN tariff rate different from zero. If both countries export a particular good in the initial equilibrium, then domestic prices are similar to the international price, and the trade agreement would have no effect on production, consumption or bilateral trade. In this case, the countries could compete in third markets. Without loss of generality, an industry is considered in which the following condition holds: $\tau_i^A > \tau_i^B \geq 1$. That is, A is an importer of good i , while B can be a less inefficient importer ($\tau_i^B > 1$) or an efficient producer ($\tau_i^B = 1$). Three cases are distinguished according to the size of country B 's aggregate supply of good i : enhanced protection, reduced protection, and an intermediate case. In each case, two different situations are studied depending on production efficiency in partner B . The economic effects of the FTA on producer and consumer prices in each economy are derived, as well as the consequences for the welfare of the different actors and countries.

2.1 Enhanced Protection

For a particular industry i , the total supply from country B (x_i^B) and the excess demand of country A (m_i^A) are presented in figure 1. In this good, country B is small with respect to country A as a result of a relatively small endowment of the specific factor in B .

Figure 1
Country A 's import demand and country B 's total supply (small supply case)



At price τ_i^A (the initial domestic price in A), the aggregate supply from country B is not enough to satisfy all the import demand of country A ; $x_i^B(\tau_i^A) < m_i^A(\tau_i^A)$. Therefore, under an eventual FTA, A has to continue importing from the rest of the world (ROW) and its domestic price remains unchanged. The producers in B prefer to sell in A 's market at

³ Thus, the domestic price (τ_i^z) equals one plus the initial tariff rate on good i in country z .

price τ_i^A which is higher than that which they face in their own domestic market (τ_i^B). Thus, producers in B divert all their production to A 's market, while consumers in B have to satisfy all their demand by purchasing from the ROW at the initial price. In conclusion, the only effect of the FTA in terms of prices is the increment in those paid to the producers in the more efficient country (see table 1 a)). Producers in B benefit from the higher protection granted to the producers in A (enhanced protection).

Table 1
Prices before and after the creation of the FTA

Agent	Country	Prices	
		Pre FTA	FTA
a) ENHANCED PROTECTION			
Producers	B	τ_i^B	τ_i^A
Producers	A	τ_i^A	τ_i^A
Consumers	B	τ_i^B	τ_i^B
Consumers	A	τ_i^A	τ_i^A
b) REDUCED PROTECTION			
Producers	B	τ_i^B	τ_i^B
Producers	A	τ_i^A	τ_i^B
Consumers	B	τ_i^B	τ_i^B
Consumers	A	τ_i^A	τ_i^B
c) INTERMEDIATE CASE			
Producers	B	τ_i^B	τ_i
Producers	A	τ_i^A	τ_i
Consumers	B	τ_i^B	τ_i^B
Consumers	A	τ_i^A	τ_i

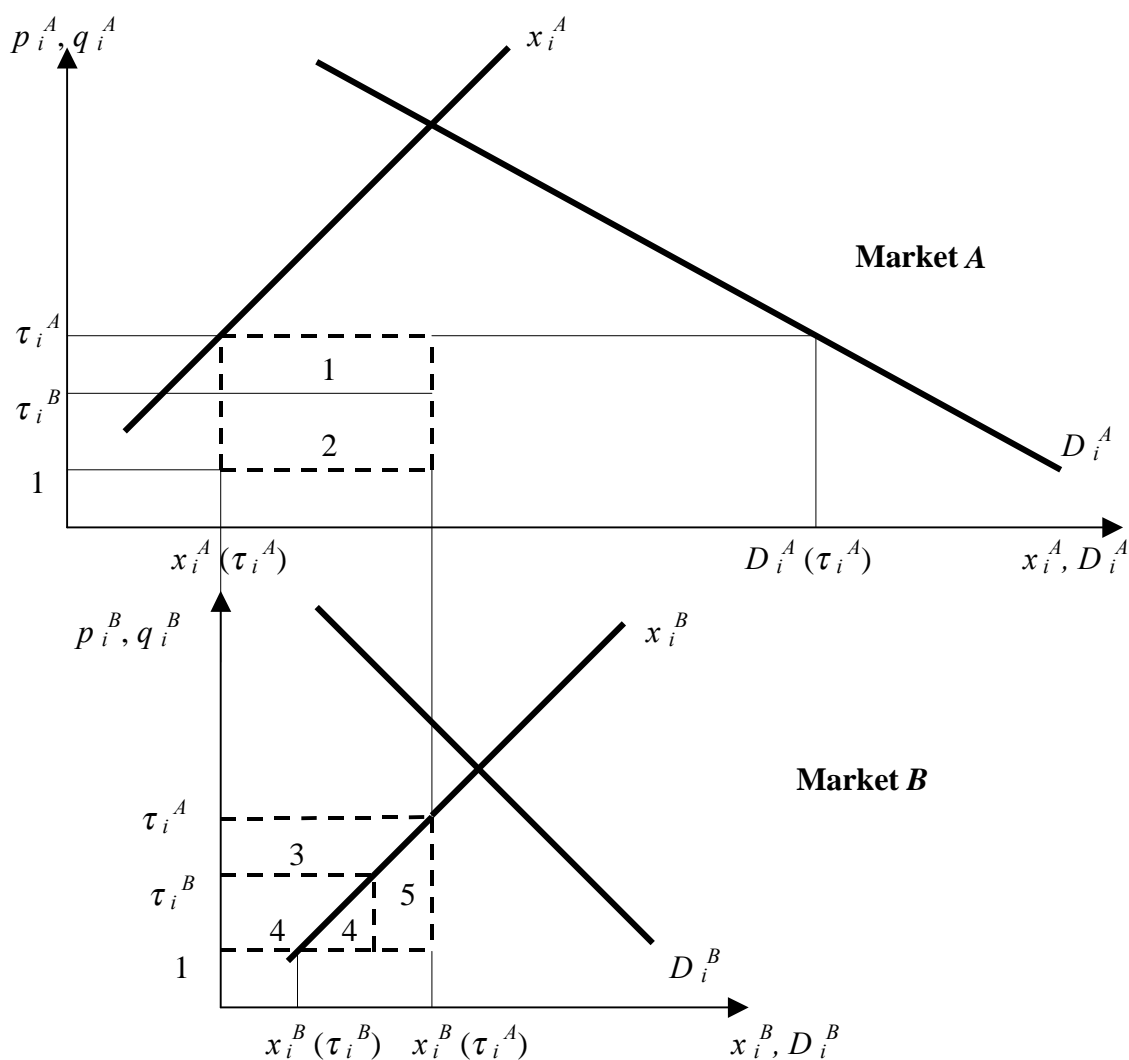
Country B is less efficient than the ROW ($\tau_i^B > 1$)

This situation is presented in figure 2, which shows the aggregate supply and the aggregate demand (D) of good i in each market. In the initial equilibrium, the consumers in A satisfy all their excess demand for good i , $D_i^A(\tau_i^A) - x_i^A(\tau_i^A)$, by purchasing from the ROW at the international price plus the MFN tariff rate. In the event of an FTA, the consumers in A import an amount $x_i^B(\tau_i^A)$ from B . So the only effect of the FTA in terms of A 's welfare is a tariff revenue (TR) loss that negatively affects the consumers in A , since, under an FTA, tariffs are not levied on imports from B (see equation I.1, Annex I).

Country A 's welfare reduction corresponds to the area 1+2 in figure 2. This loss reflects the adverse effects of trade diversion (TD). In this particular case, an efficient producer from the ROW is substituted by a protected and less efficient supplier from inside the FTA. However, the amount of this welfare loss in country A depends on its own protection level, not on the efficiency level of country B 's suppliers (the protection level in B does not affect the size of the area 1+2).

On the other hand, consumers and producers in B improve their welfare. The producers in B benefit from their preferential access to country A 's protected market (see equation I.2, Annex I). This increment in the profits of the specific factor owners in B corresponds to area 3 in figure 2.

Figure 2
Supply and demand curves of countries A and B in the enhanced protection case with B inefficient



The consumers in B receive a bigger lump sum transfer as a result of the increment in the tariff revenue which is represented by area 4 in figure 2 (see equation I.3, Annex I). Under an FTA, initial domestic sales by country B 's producers, $x_i^B(\tau_i^B)$, are replaced by imports from the ROW, which remain taxed.

The total welfare improvement in country B is obtained by adding the gains of producers and consumers; areas 3+4 in figure 2 (see equation I.4, Annex I).

From the point of view of the zone as a whole, the welfare loss in country A is bigger than the welfare gain in country B (see equation I.5, Annex II). The welfare loss of the zone as a whole is given by area 5 in figure 2.

If the economic size of the zone is small, the changes in trade flows with the ROW have no effect on international prices. However, it is interesting to determine if the amounts traded with the ROW decrease or increase. ROW exports to country A decrease by the amount of: $x_i^B(\tau_i^A)$. ROW exports to country B increase by the amount of: $x_i^B(\tau_i^B)$. The net effect is a reduction of ROW exports of the amount of: $x_i^B(\tau_i^A) - x_i^B(\tau_i^B) > 0$.

Country B is efficient ($\tau_i^B = 1$)

If the international price equals the domestic price in country B , then the domestic market in B is not protected, and two kinds of specialization for the producers in B are possible: an “import substitution” industry or an export industry⁴.

The case in which i is an import substitution industry in B can be analyzed with the aid of figure 2. Area 4 disappears since $\tau_i^B = 1$ ⁵. That is, the MFN tariff imposed by the government of B on the imports of good i is zero ($t_i^B = 0$). The welfare loss in A due to the reduction in tariff revenue remains the same. However, in country B only the producers improve their welfare, and the zone as a whole loses more than in the previous situation. The greater welfare increment for producers in B is not sufficient to compensate for the absence of an increment in tariff revenue. The reduction of ROW exports is given by the amount of: $x_i^B(\tau_i^A) - x_i^B(1) > 0$ (which is greater than in the previous case).

In country B , industry i could also be an export industry. This kind of specialization could be obtained by starting from a situation like that shown in figure 2, and making a suitable displacement to the right of the supply curve of country B ⁶. In figure 3, the good i is exported by country B at the international price.

In country A , the size of the welfare loss depends on the fraction of tariff revenue which is transferred to the producers in country B (area 1+2 in figure 3). In country B , the producers’ profits increase (area 3 in figure 3) while tariff revenue does not change. The welfare loss of the zone as a whole corresponds to area 5 in figure 3.

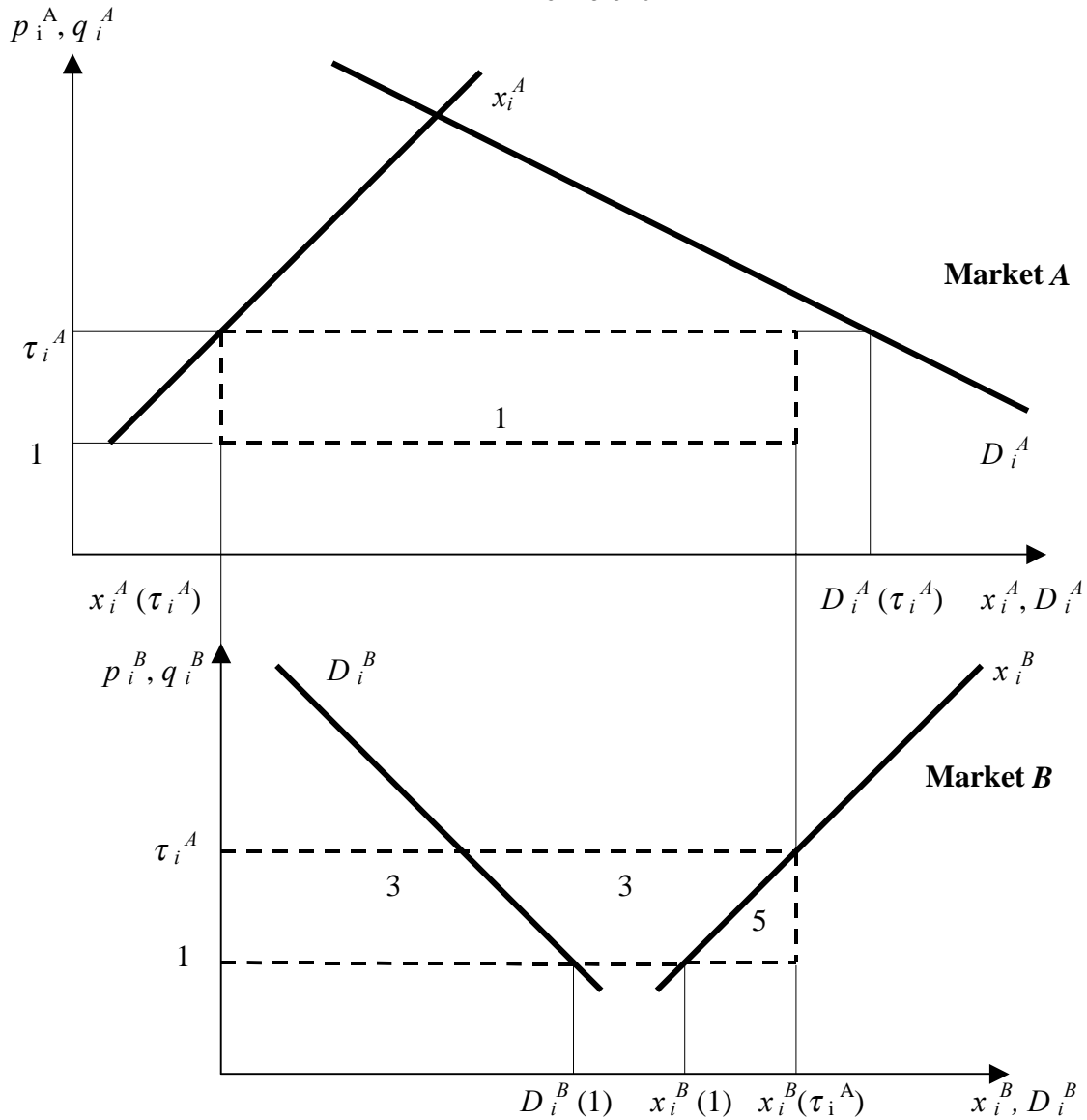
When country B is an efficient producer and exporter, the amount of the reduction in ROW exports to country A depends on the amount that country A imports from country B in the initial equilibrium. The maximum reduction equals: $x_i^B(\tau_i^A)$ (country A does not import from B in the initial equilibrium). The minimum reduction equals: $x_i^B(\tau_i^A) - [x_i^B(1) - D_i^B(1)]$ (country A imports all country B ’s excess supply in the initial equilibrium). On the other hand, ROW exports to country B increase by the amount of: $D_i^B(1)$. The net effect is negative, and the reduction is between: $[x_i^B(\tau_i^A) - x_i^B(1)]$ and $[x_i^B(\tau_i^A) - D_i^B(1)]$.

⁴ This is not the usual import substitution situation since the domestic market is not protected.

⁵ And areas 3 and 5 are bigger.

⁶ At price τ_i^A , country B ’s supply continues to be insufficient to satisfy the import demand of country A . Another way to obtain this specialization is by making a suitable displacement of the demand curve to the left, given the initial supply curve. In general, there are infinite combinations of displacements of both curves that satisfy the enhanced protection condition, and turn good i into an export for country B .

Figure 3
Supply and demand curves of countries A and B in the enhanced protection case with B efficient

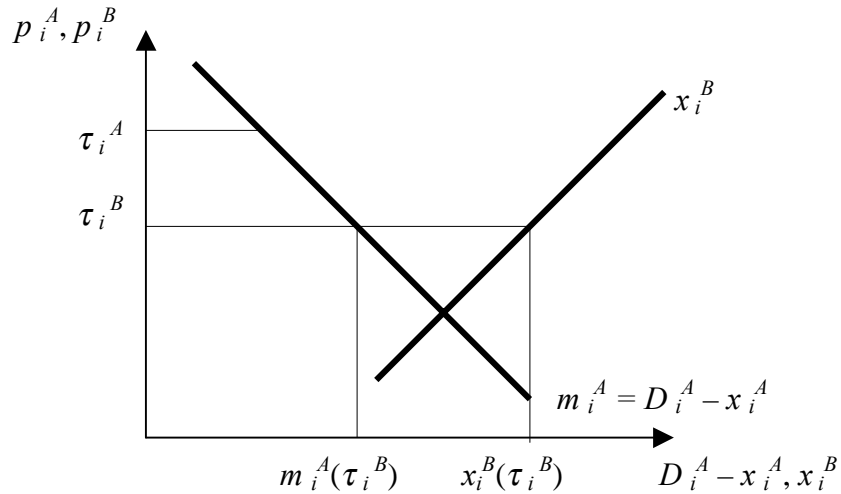


2.2 Reduced protection

Country B's total supply and country A's import demand for good i are presented in figure 4, as in a reduced protection case. In industry i , country B is big with respect to country A, which is the price taker country.

At the lowest initial domestic price (τ_i^B), the aggregate supply of country B can satisfy all of country A's import demand; $x_i^B(\tau_i^B) > m_i^A(\tau_i^B)$. Then, under an FTA, A stops importing from the ROW and its domestic price falls to τ_i^B . The producers in A enjoy less protection under the FTA than in the initial equilibrium (reduced protection).

Figure 4
Country A's import demand and country B's total supply (big supply case)



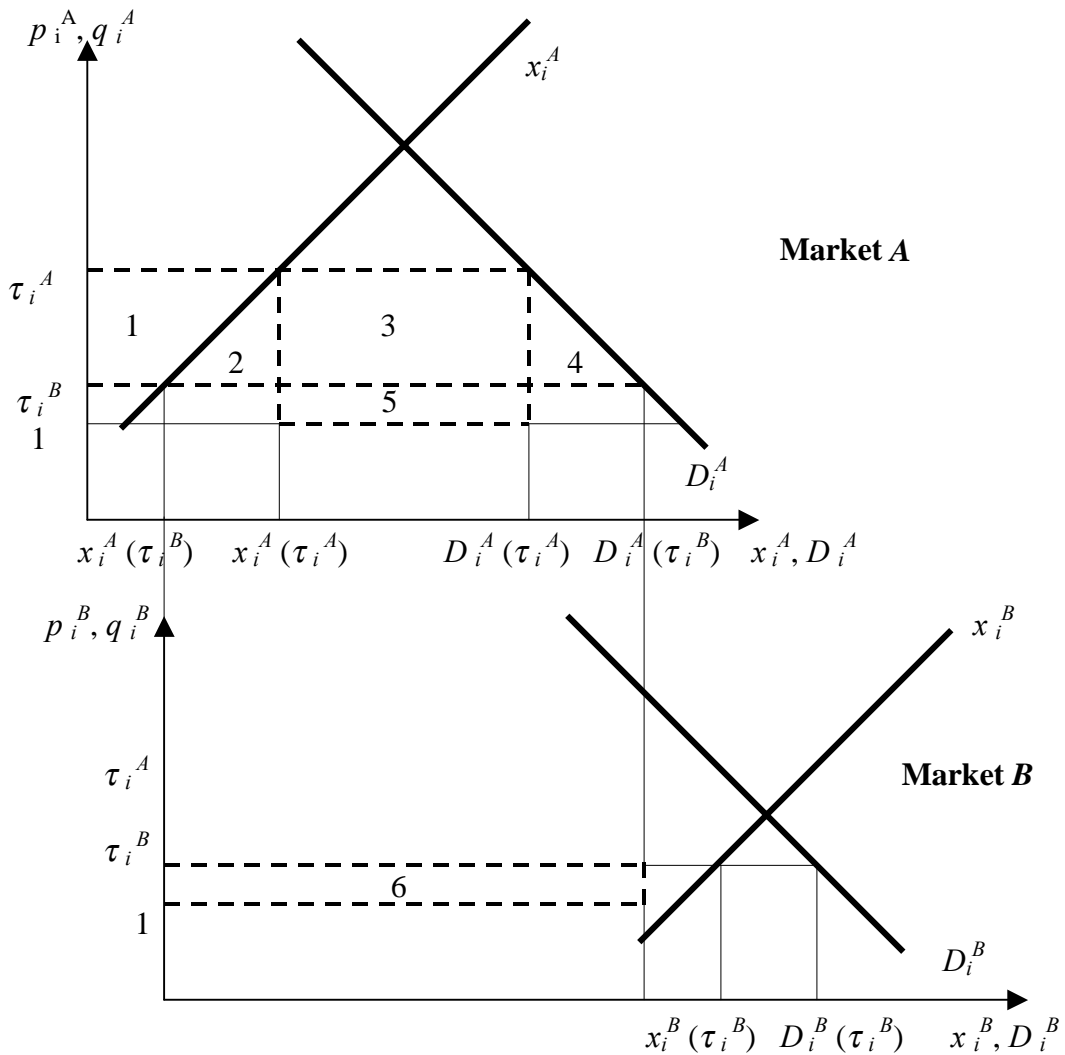
The producers in *B* are the only foreign suppliers in *A*'s market, and they also satisfy at least a part of their domestic market. The price paid by consumers in *B* for good *i* and the price obtained by producers in *B* remain unchanged at the level τ_i^B . The price changes are summarized in table 1 b).

Country B is less efficient than the ROW ($\tau_i^B > 1$)

Figure 5 shows the aggregate supply and the aggregate demand for good *i* in each market. There are three effects in country *A*: a reduction in profits for the specific factor owners; an increment in the consumers' surplus; and a reduction in tariff revenue. The producers' loss in country *A*, which results from the reduction in the domestic price that follows increased competition from inside the FTA, is given by area 1 in figure 5 (see equation I.6, Annex I). This price variation implies an increment in the consumers' surplus, represented by the area 1+2+3+4 in figure 5 (see equation I.7, Annex I). The consumers in *A* are also negatively affected since, under the FTA, all their imports originate in *B*, and therefore the tariff revenue in industry *i* falls to zero. The tariff revenue loss is captured by the area 3+5 in figure 5 (see equation I.8, Annex I). The net effect on consumers' welfare in country *A* is ambiguous. The same occurs with the net effect on country *A*'s aggregate welfare.

The analysis above can be developed in terms of traditional trade creation and trade diversion definitions. In this case, an inefficient domestic producer has been substituted by a less inefficient supplier from inside the FTA (trade creation), and an efficient producer from the ROW has been substituted by a protected and less efficient supplier from inside the FTA (trade diversion). The trade creation effect (*TC*) corresponds to the sum of areas 2 and 4 in figure 5 (see equation I.9, Annex I), while the trade diversion effect (*TD*) corresponds to area 5 (see equation I.10, Annex I). The sign of the net effect on country *A*'s aggregate welfare depends on the relative sizes of trade creation gains and trade diversion losses (see equation I.11, Annex I).

Figure 5
Supply and demand curves of countries A and B in the reduced protection case with B inefficient



On the other hand, the only effect of the FTA in terms of country B's welfare is an increment in the tariff revenue which is given by area 6 in figure 5 (see equation I.12, Annex I). Country B has to import from the ROW the same amount that its producers export to A under the FTA.

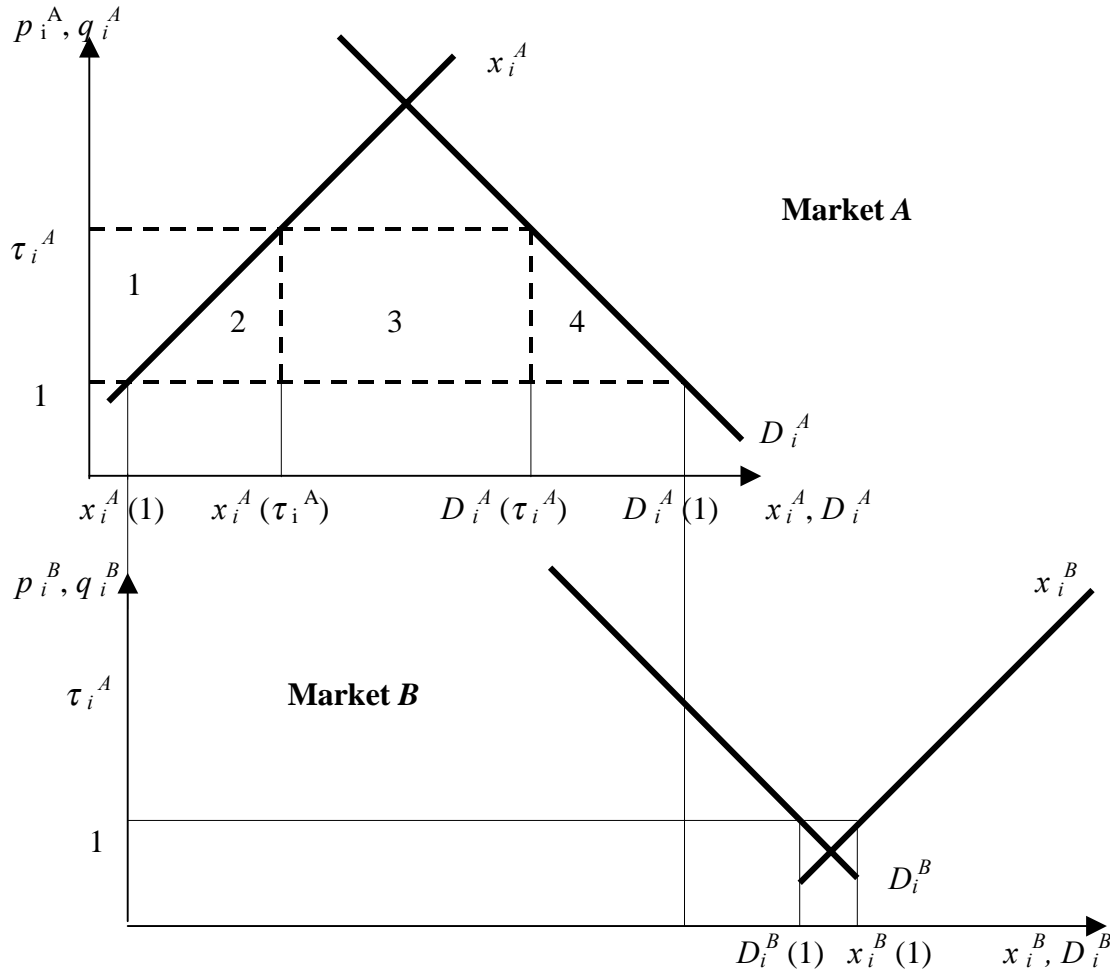
The welfare of the zone as a whole unambiguously increases (see equation I.13, Annex I): the losses in A (TD, area 5) are a fraction of the gains in B (area 6). That is, the joint welfare gain equals the sum of areas 2 and 4, plus the difference between areas 6 and 5 (see figures 5 and 10).

ROW exports to country A decrease by the amount of: $m_i^A(\tau_i^A) = D_i^A(\tau_i^A) - x_i^A(\tau_i^A)$. ROW exports toward country B increase by the amount of: $m_i^A(\tau_i^B)$. The net effect is an increment of ROW exports of: $m_i^A(\tau_i^B) - m_i^A(\tau_i^A) > 0$.

Country B is efficient ($\tau_i^B = 1$)

Again, when the international price equals the domestic price in country B , two kinds of specialization for the producers in B are possible: an import substitution industry or an export industry.

Figure 6
Supply and demand curves of countries A and B in the reduced protection case with B efficient



The import substitution industry case can be analyzed with the aid of figure 5. Area 6 disappears since $\tau_i^B = 1$ ⁷. In country A , the reduction in producers' profits and the increment in the consumers' surplus are greater than in the previous situation, while the tariff revenue loss remains unchanged. The welfare of the consumers in A and country A 's aggregate welfare unambiguously increase (there is no trade diversion in this case). There is no effect on country B 's welfare, and the zone as a whole gains more. The increment in

⁷ And areas 1, 2, 3 and 4 are bigger.

ROW exports equals the amount: $m_i^A(1) - m_i^A(\tau_i^A) > 0$ (which is greater than in the previous case).

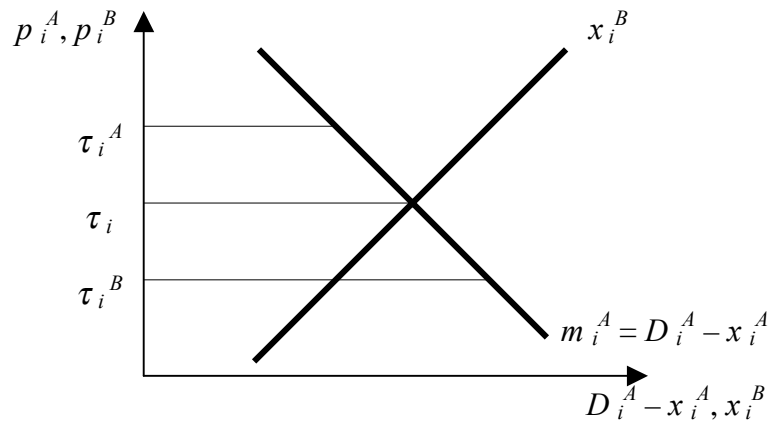
The export industry case is presented in figure 6 and the results are almost the same. The profit reduction is given by area 1, the increment in the consumers' surplus corresponds to the area 1+2+3+4, and the tariff revenue loss is represented by area 3. The consumers' welfare gain in A equals the sum of areas 1, 2 and 4. The welfare improvement in country A equals the welfare improvement in the zone as a whole, and is given by the sum of areas 2 and 4.

When country B is an efficient producer and exporter, the amount of the reduction in ROW exports to country A depends on the amount that country A imports from B in the initial equilibrium. The maximum reduction equals: $m_i^A(\tau_i^A)$ (country A does not import from B in the initial equilibrium). The minimum reduction is zero (country A only imports from B in the initial equilibrium). On the other hand, ROW exports to country B increase by the amount of: $m_i^A(1)$. The net effect is an increment of ROW exports between: $[m_i^A(1) - m_i^A(\tau_i^A)]$ and $m_i^A(1)$.

2.3 Intermediate case

Country B 's total supply and country A 's import demand for good i are presented in figure 7 as in the intermediate case in which both curves matter in the determination of the producers' price under the FTA (τ_i). The relative sizes of countries A and B mean that neither A nor B can determine the new price by itself.

Figure 7
Country A 's import demand and country B 's total supply (intermediate case)

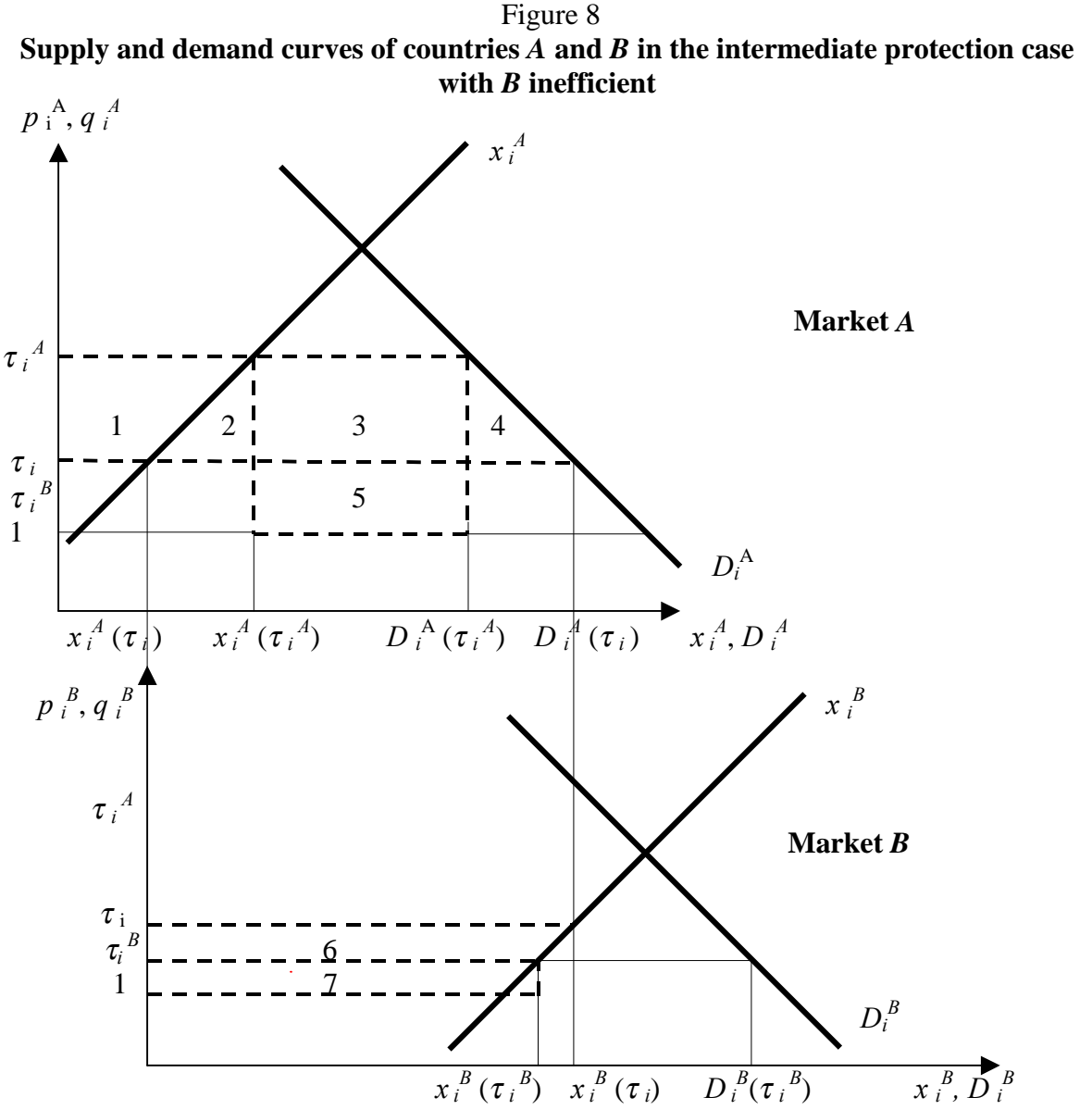


Only at the highest initial domestic price (τ_i^A) can country B 's aggregate supply satisfy all the import demand of country A ; $x_i^B(\tau_i^A) > m_i^A(\tau_i^A)$ and $x_i^B(\tau_i^B) < m_i^A(\tau_i^B)$. Then, under an FTA, A stops importing from the ROW and its domestic price falls to τ_i . The producers in A enjoy less protection under the FTA than in the initial equilibrium ($\tau_i < \tau_i^A$) while the producers in B benefit from a higher price in A 's market ($\tau_i > \tau_i^B$) (intermediate case). The producers in B are the only foreign suppliers in A 's market and

they do not sell in their own domestic market. The price paid by consumers in *B* for good *i* remains unchanged at the level τ_i^B . These price changes are summarized in table 1 c).

Country *B* is less efficient than the ROW ($\tau_i^B > 1$)

Figure 8 shows the aggregate supply and the aggregate demand for good *i* in each market. The constitution of an FTA has three effects in country *A*: a reduction in the profits of the specific factor owners, an increment in consumers' surplus, and a reduction in tariff revenue.



The producers' loss in country *A*, which results from the reduction in their domestic price, is given by area 1 in figure 8 (see equation I.15, Annex I). This price variation

implies an increment in consumers' surplus, represented by area 1+2+3+4 in figure 8 (see equation I.16, Annex I). The consumers in A are also negatively affected by the total loss of tariff revenue in industry i , which is captured by area 3+5 in figure 8 (see equation I.17, Annex I).

The net effects on consumers' welfare and on A 's aggregate welfare are ambiguous. This can be shown in terms of trade creation and trade diversion; the former corresponds to the sum of areas 2 and 4 (see equation I.18, Annex I), while the latter corresponds to area 5 (see equation I.19, Annex I). Again, the sign of the net effect on country A 's aggregate welfare depends on the relative sizes of trade creation gains and trade diversion losses (see equation I.20, Annex I).

On the other hand, there are two positive effects in country B . The producers increase their profits by selling more at a higher price (see equation I.21, Annex I), and the consumers benefit from greater tariff revenue since the initial domestic sales of B 's producers are replaced by imports from the ROW (see equation I.22, Annex I). The total welfare improvement in country B is obtained by adding the gains of producers and consumers, areas 6 and 7 respectively in figure 8 (see equation I.23, Annex I).

The welfare of the zone as a whole could increase or decrease depending on the relative sizes of country A 's losses and country B 's gains (see equation I.24, Annex I). Graphically, the zone welfare variation equals the sum of areas 2 and 4, plus the difference between area 6+7 and area 5 (see figure 8).

ROW exports to country A decrease by the amount of: $m_i^A(\tau_i^A)$. ROW exports to country B increase by the amount of: $x_i^B(\tau_i^B)$. The net effect is a variation of ROW exports of $x_i^B(\tau_i^B) - m_i^A(\tau_i^A)$ which could be positive or negative.

Country B is efficient ($\tau_i^B = 1$)

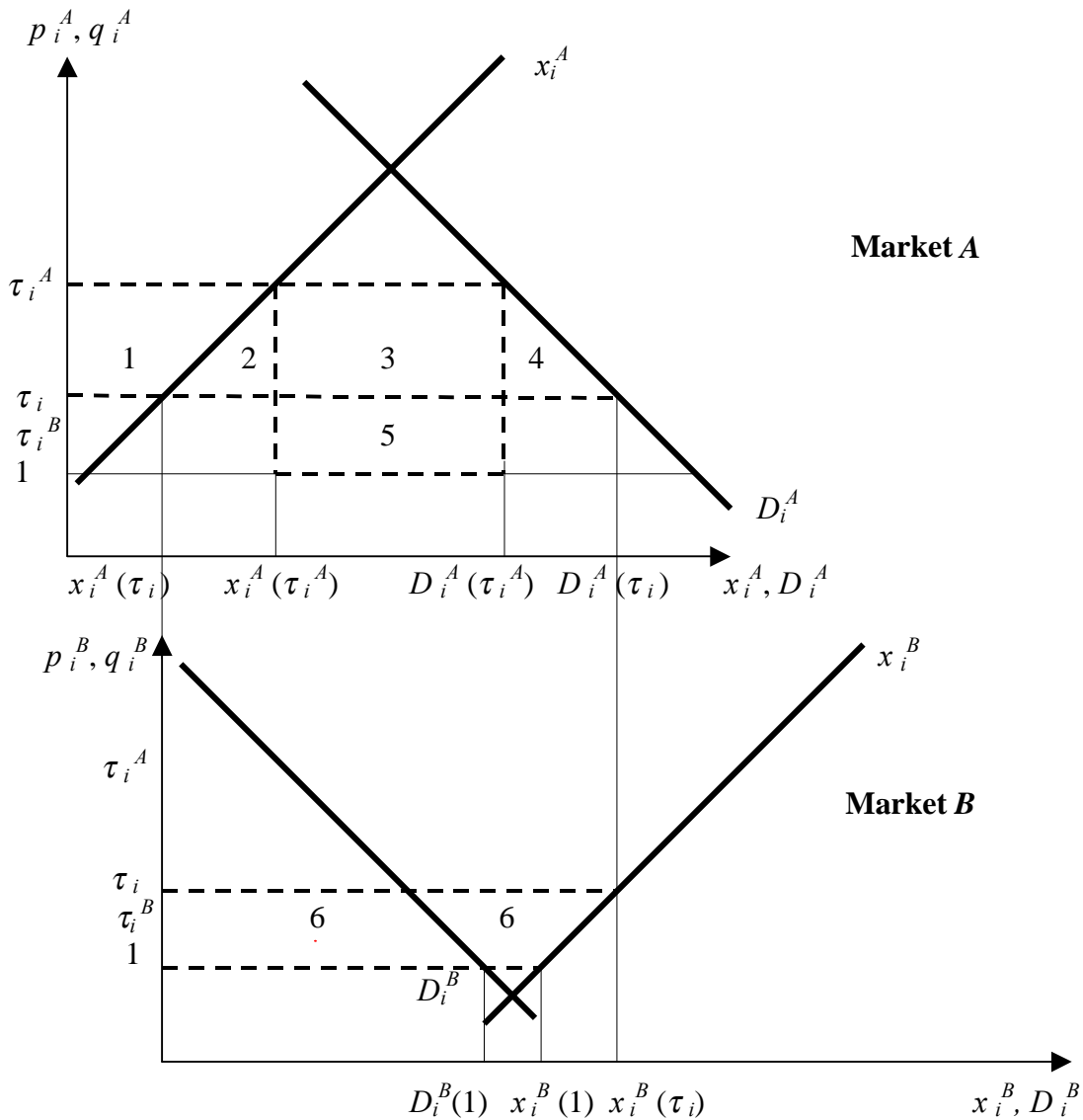
The import substitution industry case can be analyzed with the aid of figure 8. Area 7 disappears since $\tau_i^B = 1$ ⁸. The effects in country A remain unchanged from the previous case, while only the producers improve their welfare in country B , and the zone as a whole is worse off than in the previous situation. The greater welfare increment for the producers in B is not sufficient to compensate for the absence of an increment in tariff revenue. The variation in ROW exports equals $x_i^B(\tau_i^B) - m_i^A(\tau_i^A)$.

The export industry case is presented in figure 9 and the results are almost the same.

The maximum reduction in ROW exports to country A equals: $m_i^A(\tau_i^A)$. The minimum reduction is: $m_i^A(\tau_i^A) - [x_i^B(1) - D_i^B(1)]$. On the other hand, ROW exports to country B increase by the amount of: $D_i^B(1)$. The net effect is a variation of ROW exports between: $[x_i^B(1) - m_i^A(\tau_i^A)]$ and $[D_i^B(1) - m_i^A(\tau_i^A)]$.

⁸ And area 6 is bigger.

Figure 9
Supply and demand curves of countries *A* and *B* in the intermediate protection case with *B* efficient



2.4 Distributive welfare effects: comparison between countries and actors

Table 2 summarizes the welfare effects of an FTA in the different cases for each actor (producer and consumer) and each country.

In the enhanced protection case, consumers in *A* always lose, producers in *B* always win and consumers in *B* could win. Welfare in *A* always decreases and welfare in *B* always increases. In spite of the fact that the contribution of these industries to the welfare of the zone as a whole decreases under the FTA, they are very good candidates for inclusion in the agreement because no strong opposition is expected.

Table 2
FTA welfare effects

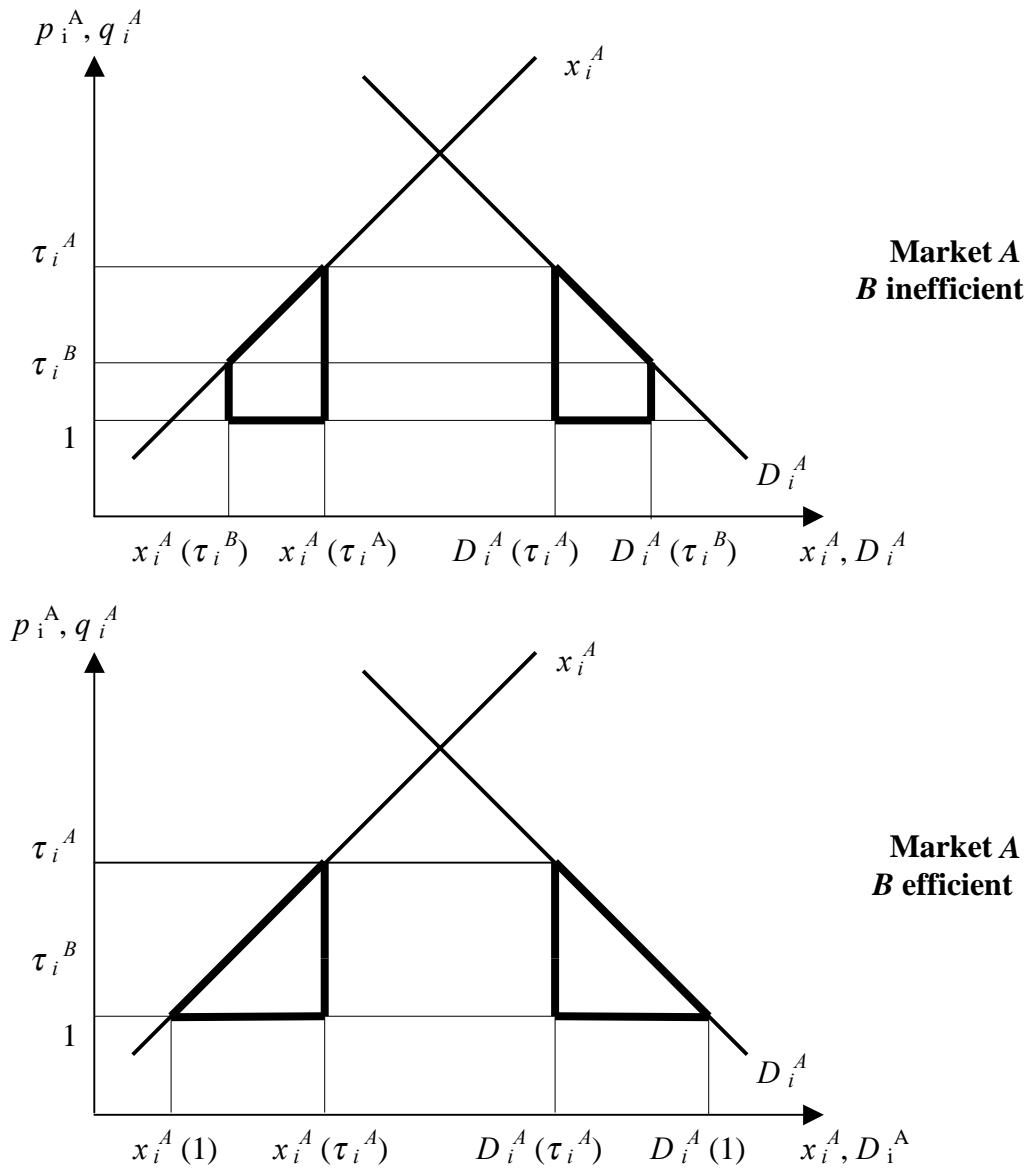
Agent	Country	Change in welfare	
		<i>B</i> inefficient	<i>B</i> efficient
a) ENHANCED PROTECTION			
Consumers	<i>A</i>	Negative	Negative
Producers	<i>A</i>	Nil	Nil
Total	<i>A</i>	Negative	Negative
Consumers	<i>B</i>	Positive	Nil
Producers	<i>B</i>	Positive	Positive
Total	<i>B</i>	Positive	Positive
	<i>Zone</i>	Negative	Negative
	<i>ROW</i>	Could be negative	Could be negative
b) REDUCED PROTECTION			
Consumers	<i>A</i>	Negative or Positive	Positive
Producers	<i>A</i>	Negative	Negative
Total	<i>A</i>	Negative or Positive	Positive
Consumers	<i>B</i>	Positive	Nil
Producers	<i>B</i>	Nil	Nil
Total	<i>B</i>	Positive	Nil
	<i>Zone</i>	Positive	Positive
	<i>ROW</i>	Could be positive	Could be positive
c) INTERMEDIATE CASE			
Consumers	<i>A</i>	Negative or Positive	Negative or Positive
Producers	<i>A</i>	Negative	Negative
Total	<i>A</i>	Negative or Positive	Negative or Positive
Consumers	<i>B</i>	Positive	Nil
Producers	<i>B</i>	Positive	Positive
Total	<i>B</i>	Positive	Positive
	<i>Zone</i>	Negative or Positive	Negative or Positive
	<i>ROW</i>	Could be negative or positive	Could be negative or positive

In the reduced protection case, producers in *A* always lose, consumers in *A* could win or lose and consumers in *B* could win. The welfare effect could be positive or negative in *A*, while it could be positive in *B*. The zone as a whole always improves its welfare. However, in these kinds of industries there is potentially strong opposition to their inclusion on the list of liberalized goods (specifically from the producers in *A*).

Country *A*'s welfare improves, and the welfare of the zone increases more, when country *B* is efficient. Figure 10 presents the welfare variation in the zone as a whole according to the efficiency level in country *B*.

Figure 10

Zone's welfare improvement with reduced protection *B* inefficient vs *B* efficient



Finally, in the intermediate case some results depend on the particular values of the parameters. Producers in *A* always lose, producers in *B* always win and consumers in *B* could win. Welfare in *B* always increases. The effects on consumers' welfare in *A*, on country *A*'s welfare, and on joint welfare could be positive or negative, depending on the particular values of the parameters.

3. Methodology

From the perspective of each of the participants in the MERCOSUR-US agreement, the FTA would mean a trade off between the gain in access to the new partner market and the loss in protection in those markets where the new partner improves its access conditions. The first can generate *trade opportunities* and the second can generate *trade perils*. In this section, we outline the methodology for the construction of two lists of products, one expansive (opportunities) and one defensive (perils). Thus, it would be possible to design a guide for trade negotiations between the US and the countries of MERCOSUR. This guide would establish expansive and defensive priorities at the level of products for each of the participants. The opportunities and perils analysis is interpreted in terms of the typology introduced in the previous section, based on the effects of integration in the different markets, in order to better identify the private interest groups that are for or against the agreement. With this outcome, the idea is to apply a political economy approach in the Grossman-Helpman perspective to analyze the political viability of an FTA between the US and MERCOSUR.

Without loss of generality, we consider only two countries, A and B , and assume that these countries are going to sign a free trade agreement which could involve more participants.

The methodology involves three steps; the first selects industries (SITC, 4 digits), the second selects products (Harmonized System, 6 digits) within the selected industries, and the third classifies the selected products⁹. The first step consists in identifying the industries where the greatest contractive or expansive adjustments are expected due to the FTA creation (industries with high trade complementarity). Then, products are chosen taking into account the changes in trade policy which are implicit in the FTA, that is to say, those products for which the agreement means an improvement in preferential access to the other market (sensitive products). Finally, the selected products are classified according to the eventual expansion in exports (opportunities) and/or contraction in production (perils), establishing an explicit link with the three protection regimes defined above.

3.1 Industries with high trade complementarity

In line with the theoretical presentation, in each industry we should know which country is the less efficient producer, since, under an FTA, it is expected that this country will import products from the other in that industry. For this purpose, one option could be to compare domestic prices in both economies in each industry. However, the required level of data disaggregation for working with domestic prices is too high, the availability of price information is very limited, and consequently the statistical task is too great. For this reason, an indirect methodology has been developed using trade flows at industry level. The efficiency level of each country in each industry is inferred from revealed comparative advantage indexes. If one country has a revealed comparative disadvantage then it could potentially be more inefficient than the international economy, while if the country registers

⁹ The first step considers less disaggregated trade data due to a reason of data quality. Every step could have been developed at the same disaggregation level. The adopted approach could mean the mis-selection of some irrelevant products, but not the exclusion of the relevant ones.

a revealed comparative advantage then it could be inferred that the good is produced at least as efficiently as in the international economy.

We defined as industries of interest, those in which country A (B) is an exporter and country B (A) is an importer. This selection involves consideration of the export profiles of A (B) together with the import profiles of B (A). We consider the industries (SITC revision 2, 4 digits) in which country A 's (B 's) exports show strong trade complementarity with country B 's (A 's) imports. These are the industries that would have better chances of exploiting the eventual improvement in access to the new partner's market. The industries of interest concept covers those in which the differences in the conditions of production in the two markets that are in the process of eliminating trade barriers are greatest. For this reason, it is logical to expect that these will be the industries where the greatest adjustments will occur, and at the same time these will be the industries that most oppose or support the trade agreement.

Specifically, we use a trade complementarity index based on the "revealed comparative advantage" index of trade specialization proposed by Balassa (1965). For each industry, the trade complementarity index of the exports of A (B) in the market of B (A) equals the product of the export specialization index of A (B) (comparative advantage index) and the import specialization index of B (A) (comparative disadvantage index). The export (import) specialization index equals the ratio between the share of the industry in a country's total exports (imports) and the share of the industry in world trade. When the export (import) specialization index is greater than one, we say that the country is more export (import) oriented in that particular industry than the world average, and therefore we conclude that the country has a comparative advantage (disadvantage) in that industry.

The industry set where country z is an exporter and country p is an importer, that is, the "high trade complementarity set" for the exports from z to p (HTC^{zp}), is defined as:

$$HTC^{zp} = \{i \in s \in S / XS_s^z > 1 \text{ and } MS_s^p > 1\}$$

with: $z = A, B$ $p = B, A$ and $z \neq p$.

Product i belongs to industry s and S is the universe of industries. Two trade specialization indexes are used: XS_s^z is the export specialization index of country z in industry s ; and MS_s^p is the import specialization index of country p in industry s .

The global high trade complementarity set (HTC) is the union of the two subsets ($HTC = HTC^{AB} \cup HTC^{BA}$)¹⁰. We have selected as industries of interest a subset of the industries with export trade complementarity greater than one: those industries that also satisfy the condition that export and import specializations are greater than one.

At this point we should stress some shortcomings of the methodology that we are introducing:

i) The methodology is limited when it comes to the precision with which industries are identified. These limitations could generate errors that we can classify in two groups, errors by defect (some industries that ought to be included are not in the selection), and errors by excess (industries included that ought not to be in the selection). In the first group, the

¹⁰ One country could have an export specialization and an import specialization in the same industry. That is, the intersection between the sets HTC^{AB} and HTC^{BA} is not necessary null.

method does not permit identification of those industries where both countries produce with an import substitution specialization, but one of them is more efficient than the other¹¹. In the second group, a country could have a comparative disadvantage in one industry but produce in a way similar to the international economy. The second proposed filter, which is applied in the next sub-section, permits the solution of the second problem, that of including more industries than are wanted.

ii) Some other limitations could stem from the fact that the methodology is based on indexes of comparative advantage that are of a "revealed" type. Thus, as has been typically stated, we are assuming that the real pattern of comparative advantage can be observed from trade data. In this sense, the indexes could be biased due to existing trade policy barriers, subsidies, geography, tastes, foreign direct investment, etc., all of which are not uniform across sectors and countries. However, we are still interested in the patterns of specialization, beyond the factors that are generating those patterns, since these indexes help us to map the private interest groups that are for or against the FTA.

iii) The trade specialization indexes are biased by economic size. That is, bigger countries tend to have more diversified export and import structures, and therefore the share of each industry in total imports and total exports, and the average value of the index, tend to be lower. We tried to correct for this bias, performing OLS regressions of the indexes (one for export and one for import specialization) over economic size, and employing the corresponding residuals as the corrected trade specialization indexes¹².

iv) We are not identifying those products that are basically exchanged on a regional basis; the type of products that do not travel long distances. In those cases, the opportunities and perils would not be relevant.

The data source for this first step was the World Trade Flows (2000). Because of the structural nature of the variables involved in trade specialization, we computed the indexes for averaged trade data for the period 1990-1997 (1997 being the last year for which consistent information on the world economy is available).

3.2 Trade Opportunities and Trade Perils

Without loss of generality, and in order to establish a link with section 2, we define the trade opportunities for country B (the more efficient country) and the trade perils for country A .

Trade opportunities refer to the potential expansion of country B 's exports as a result of the improvement in the access conditions to A 's market, while trade perils refer to the potential displacement of domestic sales of the producers in country A by exports from country B following that eventual improvement. In the case of our study, the US would face trade perils in its domestic market while the MERCOSUR countries would face trade perils

¹¹ In those cases we are assuming that strong adjustments are not expected.

¹² In the case of the export specialization index the estimated equation was:

$$\ln XS_s^z = \beta_1 \ln GDP_z + \beta_2 \ln(GDP_z)^2 + \varepsilon_s^z$$

where GDP_z is country z 's gross domestic product (the average for the period 1990-1997). The sample used includes the countries from South America, North America, the European Union and South East Asia. The results are not significantly biased due to sample selection or the eventual endogeneity of GDP. The GDP data were obtained from the World Development Indicators (2001), World Bank.

in the four regional markets (the “domestic market” for the member countries). The MERCOSUR-US agreement would mean a reduction in the differential in regional trade preferences with respect to US suppliers.

The construction of the opportunities and perils sets requires the prior determination of what we call sensitive products.

The selection of sensitive products involves completing the selection of the industries of interest with trade policy information and trade data at a higher level of disaggregation (Harmonized System, 6 digits). In the previous subsection, we applied a trade complementarity filter. Now we filter the HTC^{BA} set using information about *ad valorem* tariffs; it is a trade policy filter. Specifically, we consider that a product (HS, 6 digits) is sensitive when the following multiple condition is satisfied:

- the product belongs to an industry (SITC, 4 digits) that is included in HTC^{BA} ,
- country B exports the product,
- country A imports the product, and
- country A 's imports of that product from country B face an *ad valorem* tariff different from zero.

Thus, sensitive products are those that, being in HTC^{BA} , would gain improved conditions of access to the new partner market as a result of the constitution of a free trade area. On the other hand, the product is not sensitive when suppliers are currently faced with a zero tariff. The sensitive products set when B is an exporter and A is an importer (SP^{BA}), is:

$$SP^{BA} = \{i \in s \in SI^{BA} / X_i^B > 0 \text{ and } M_i^A > 0 \text{ and } t_i^{AB} > 0\}$$

where, X_i^B are country B 's total exports of product i ; M_i^A are country A 's total imports of product i ; and t_i^{AB} is the tariff rate imposed by the government of A on the imports of product i from country B ¹³.

The additional data needed for carrying out the sensitive products analysis came from different sources. We used a database of US trade policy which includes the MFN tariffs (*ad valorem* equivalent of complete MFN rate) and all the current trade preferences granted by the US to MERCOSUR countries¹⁴. These data were obtained from the United States International Trade Commission (USITC). The trade policy of MERCOSUR countries (the MFN tariffs which are those applied to imports from the US) were supplied by the LAIA General Secretariat. We averaged export and import data of the MERCOSUR countries, and of the US, at the HS 6 digit level for the time period 1996-1998. The data were supplied by the LAIA General Secretariat and the USITC, respectively.

There is another potential shortcoming that we should mention. Since our analysis takes into account the universe of products, we could not pay attention to some very detailed aspects of trade policy that affect some of them specifically. This is, we are

¹³ There could be products which belong to an industry in HTC^{AB} but are not exported or imported. Those products cannot be sensitive. A reasonable alternative is to express the second and third condition as $X_C^k > \underline{X}$ and $M_C^k > \underline{M}$ where \underline{X} and \underline{M} are positive amounts of trade. This is also valid for the tariff condition, where it is possible to require $t_i^{AB} > \underline{t}$, with \underline{t} being a positive tariff. For this specific study we required a tariff greater than 2%.

¹⁴ The non-reciprocal trade preferences contained in the General Preference System (GPS).

considering a simplified trade policy and, therefore, ignoring things like the existence of quotas, GSP requirements, etc..

The sensitive products turn into trade opportunities for country B when there is an expansion in its production led by exports to country A . The opportunities set for B in A (OP^{BA}) is:

$$OP^{BA} = \left\{ i \in SP^{BA} / x_i^{B^{FTA}} > x_i^B \right\}$$

The sensitive products turn into trade perils for A when there is a displacement of domestic production in A led by imports from country B . The perils set for A generated from B (PE^{AB}) is:

$$PE^{AB} = \left\{ i \in SP^{BA} / x_i^{A^{FTA}} < x_i^A \right\}$$

Taking into account these two definitions and the protection regimes introduced in the previous section, we observe that for a particular product the enhanced protection case means an opportunity but not a peril, the reduced protection case means a peril but not an opportunity, and the intermediate case means an opportunity and a peril. So it is possible to establish an explicit link between the two sections and to analyze the political economy consequences of the creation of an FTA in terms of the Grossman and Helpman model.

The enhanced protection set when country B is the exporter (EN^{BA}) includes the products that constitute a trade opportunity for B and are not a trade peril for country A .

$$EN^{BA} = \left\{ i \in s / i \in OP^{BA} \text{ and } i \notin PE^{AB} \right\}$$

The reduced protection set when country B is the exporter (RE^{BA}) includes the products that constitute a trade peril for country A and are not a trade opportunity for B .

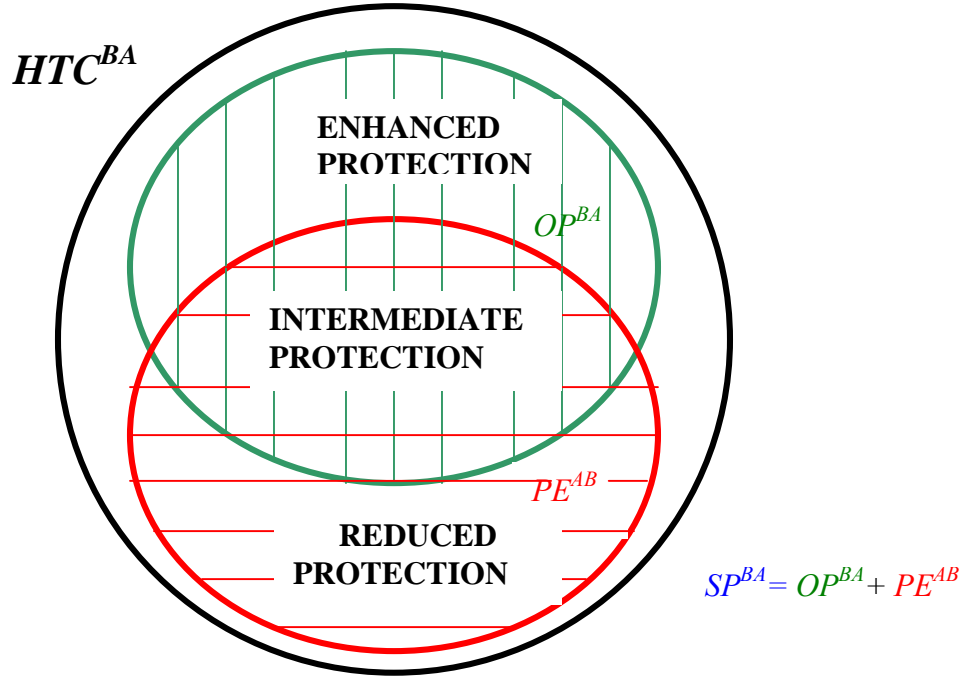
$$RE^{BA} = \left\{ i \in s / i \notin OP^{BA} \text{ and } i \in PE^{AB} \right\}$$

Finally, the intermediate protection set when country B is the exporter (IN) includes the products that constitute a trade opportunity for country B and a trade peril for country A .

$$IN^{BA} = \left\{ i \in s / i \in OP^{BA} \text{ and } i \in PE^{AB} \right\}$$

The essential aspects of the methodology and its link with the protection regime analysis are captured by figure 11.

Figure 11
Opportunities and perils *vis a vis* protection regimes



3.3 The measure of the trade protection regime

The protection regime after the FTA is determined using information about domestic production in each potential export country. The problem is that what is observed is the value of the domestic offer of B country (the more efficient) at domestic prices in B before the FTA, and the value of the excess demand in country A at the prevailing prices in that market before the agreement. Therefore, the observed ratio is the following:

$$\frac{\tau_i^A (D_i^A(\tau_i^A) - x_i^A(\tau_i^A))}{\tau_i^B x_i^B(\tau_i^B)} \quad (1)$$

The following relations should be observed, in order to determine the regime of protection:

- Enhanced protection

$$\frac{\tau_i^A (D_i^A(\tau_i^A) - x_i^A(\tau_i^A))}{\tau_i^A x_i^B(\tau_i^A)} > 1 \quad (2)$$

- Reduced protection

$$\frac{\tau_i^B (D_i^A(\tau_i^B) - x_i^A(\tau_i^B))}{\tau_i^B x_i^B(\tau_i^B)} < 1 \quad (3)$$

- Intermediate protection

$$\frac{\tau_i^A (D_i^A(\tau_i^A) - x_i^A(\tau_i^A))}{\tau_i^A x_i^B(\tau_i^A)} < 1 \quad (4)$$

$$\frac{\tau_i^B (D_i^A(\tau_i^B) - x_i^A(\tau_i^B))}{\tau_i^B x_i^B(\tau_i^B)} > 1 \quad (5)$$

It is not possible to observe exported domestic production valued at the domestic price of the import country (the denominator in relation (2)), nor the excess demand of the import country valued at the domestic prices of the export country (the numerator in relation (3)). Making some specific assumptions, it is possible to find the non-observed values as a function of the observed ones. In the case of the domestic offer in the export country, it can be shown that:

$$\tau_i^A x_i^B(\tau_i^A) = \tau_i^B x_i^B(\tau_i^B) (1 + (e_i^{AB} - 1) \varepsilon_{si}^B) e_i^{AB} \quad (6)$$

Where: $e_i^{AB} = \frac{\tau_i^A}{\tau_i^B}$ - is the relative efficiency of country *A* with respect to country *B*; ε_{si}^B - is the elasticity of domestic supply in country *B*.

In the case of the excess demand in country *A*, it is shown that:

$$\tau_i^B (D_i^A(\tau_i^B) - x_i^A(\tau_i^B)) = \frac{\tau_i^A (D_i^A(\tau_i^A) - x_i^A(\tau_i^A))}{e_i^{AB}} (1 + (\frac{1}{e_i^{AB}} - 1) \varepsilon_{mi}^A) \quad (7)$$

Where: ε_{mi}^A - is the import elasticity of country *A*.

In conclusion, to find the values that are sought it is necessary to have estimates of the following parameters: domestic supply elasticity in country *B*; import elasticity in country *A*; relative efficiency measured through the domestic prices in both markets.

4. Results

4.1 Industries with high bilateral trade complementarity

Figures 12 to 15 present the *HTC* sets for US exports to MERCOSUR as a whole, and for the exports of each MERCOSUR member to the US. The coordinates of each point on the plane represent the trade complementarity levels of a certain industry exports in both

directions. In all figures, the vertical axis is the same and corresponds to the *HTC* set for US exports, while the horizontal axis corresponds to the set of one of the MERCOSUR countries. Every industry represented belongs to the *HTC* set of at least one of the economies under consideration: a blue (red) icon is an industry in the *HTC* set of the corresponding MERCOSUR country (the US), while a black icon is an industry that belongs to both sets. The industries have been classified in four big groups: agriculture, raw materials, fuels and manufactures (a square corresponds to agriculture, a cross to raw material, a circle to fuel and a triangle to manufacture)¹⁵.

The figures suggest a markedly inter-industrial pattern of trade since the industries are concentrated along the axes and there are few black icons, although there are rather more when Brazil is the MERCOSUR exporter. The limited presence of black icons means that the industries in which both sides, the US and the MERCOSUR, have simultaneously an export and an import specialization are rare¹⁶.

In the case of Argentina, the industries included in the *HTC* set represent approximately one quarter of total exports. Almost 80% of the exports with high trade complementarity with the US market correspond to agricultural and fuel industries, with approximately equal shares.

Brazilian exports in the corresponding *HTC* set constitute nearly one half of the country's total exports, and manufacturing industries have the greatest share among the industries with high trade complementarity with the US market (more than 60%).

The *HTC* set for exports from Paraguay to the US represents a low share of its total sales to foreign markets (approximately 10%) with a majority proportion of agricultural industries (70%).

In the case of Uruguay, the exports with high trade complementarity constitute about one quarter of total exports and are highly concentrated in agricultural industries, which make up more than three quarters in the *HTC* set.

Finally, the *HTC* set for exports from the US to the MERCOSUR as a whole represents approximately one half of total exports, and manufacturing industries dominate in the *HTC* set with a share of almost 90%.

The outcome from the trade complementarity analysis is also described by tables 3, 4 and 5 that we introduce in the next section.

¹⁵ Agriculture includes SITC 0, 1 and 4 (food and live animals; beverages and tobacco; and animal and vegetable oils, fats and waxes; respectively); raw materials include SITC 2 (raw materials from agricultural origin); fuels include SITC 3 (mineral fuels, lubricants and related materials); manufactures include SITC 5 to 9 (chemicals and related products; manufactured goods classified by material; machinery and transport equipment; miscellaneous manufactured articles; and commodities and transactions not classified elsewhere, respectively). The version of the SITC classification employed in this paper is that used by Statistics Canada (see Feenstra 2000).

¹⁶ We are including preferential trade (intra-MERCOSUR and intra-NAFTA) for the computation of trade specialization indexes. In the case of the small members of MERCOSUR, the regional destination could represent a high share even for the exports of products where they are efficient producers.

Figure 12
US-MERCOSUR and Argentina-US: *HTC* sets

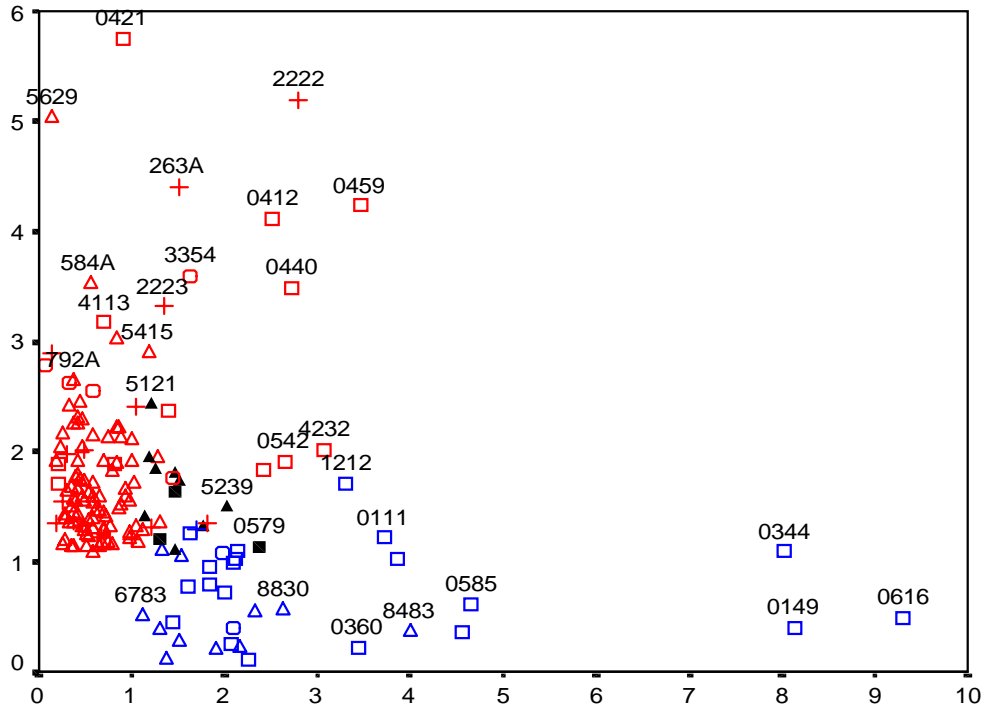


Figure 13
US-MERCOSUR and Brazil-US: *HTC* sets

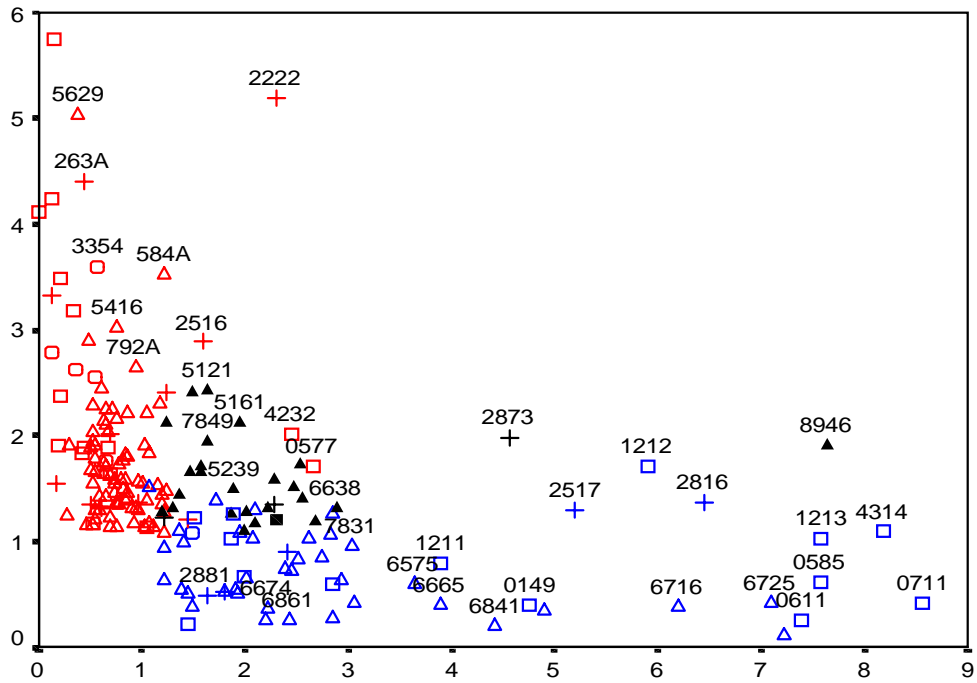


Figure 14
US-MERCOSUR and Paraguay-US: *HTC* sets

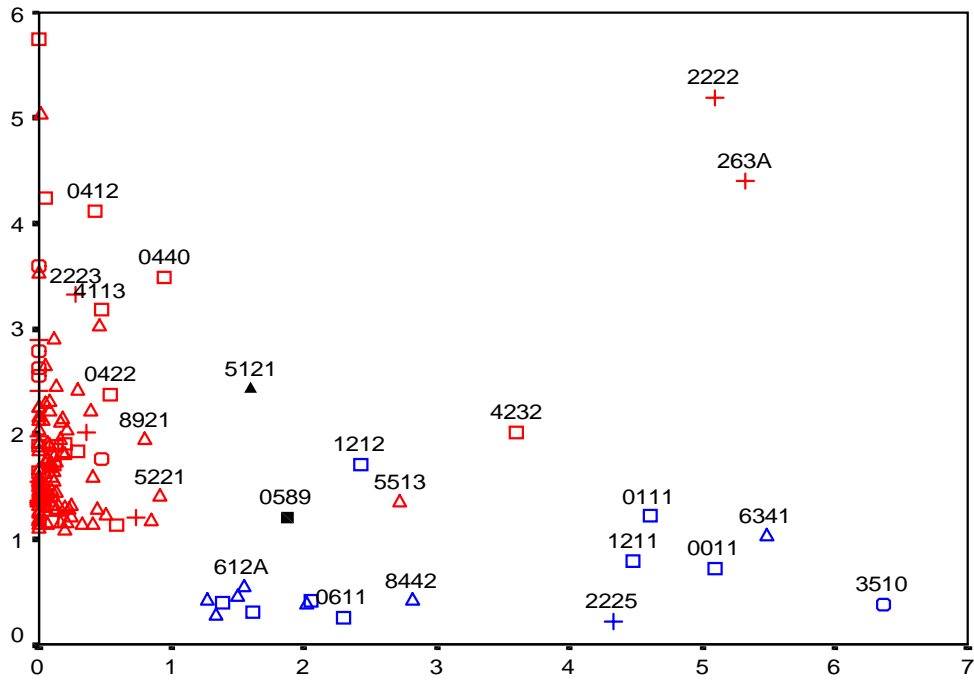
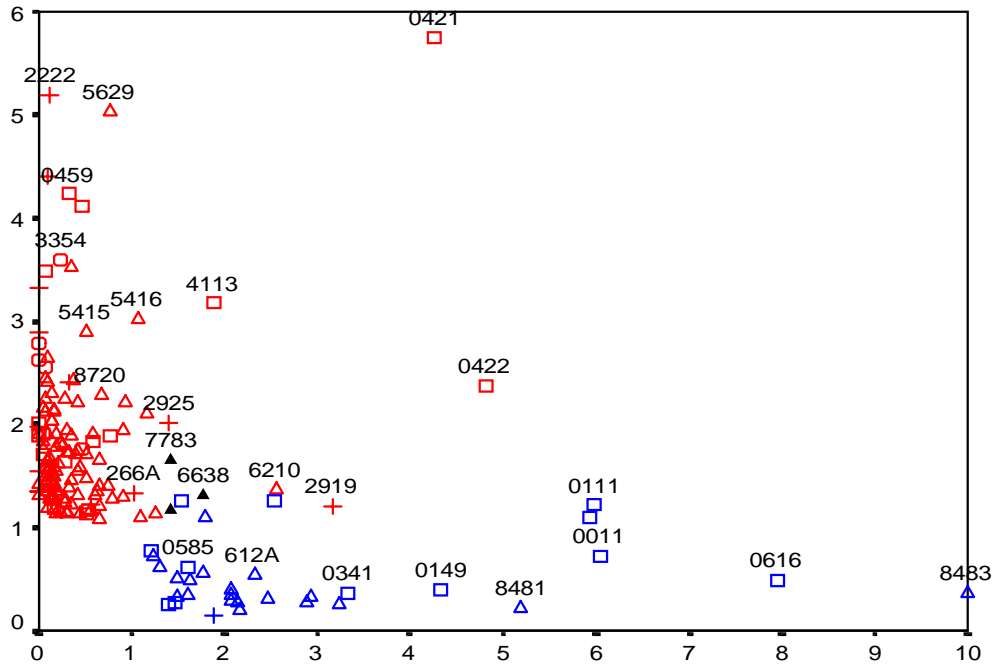


Figure 15
US-MERCOSUR and Uruguay-US: *HTC* sets



4.2 Trade opportunities and trade perils

Tables 3, 4 and 5, summarize the outcome of the application of the proposed methodology to the case of the MERCOSUR-US agreement. The columns show information by each country considered and consolidate the information for the MERCOSUR as a whole, while the rows give information about the different sets of products. The first section in all these tables gives total exports and the other sections give the subsets of export products that result from applying the filters and definitions included in the three steps of the methodology. That is, the products in the high trade complementarity industries set, the sensitive products set and the subsets of sensitive products classified taking into account the protection regime.

The information available for domestic production in each country at product level rather limited the possibility of being able to differentiate the three protection regimes previously identified (see section 2 and subsection 3.3). For almost every relevant sensitive product, we were able to establish with precision whether it was a product in a reduced protection regime. Therefore, although it was possible to identify the group of products with expansion opportunities (they correspond to the products that are not under reduced protection), we could only establish a subset of the perils (see diagram 1). In other words, a product in a reduced protection regime constitutes a peril for the importer while a product in a not reduced protection regime (enhanced or intermediate) constitutes an opportunity for the exporter, and could be a peril for the importer¹⁷.

The global results are presented in table 3. Each set of products was characterized using the following variables of interest: share in total exports value, number of industries (SITC four digits), number of products (HS at six digits), imposed tariff for this particular set of products, and the big industry division with the greatest export share within the set.

For each group of products in table 3 the corresponding imposed tariff is computed. The imposed tariff is the weighted average tariff that the producers in one country face in another country's market, the weights being the export shares of the first country. That is, we have the tariff imposed by the US on each of the MERCOSUR members, and on the MERCOSUR as a whole, and the tariff imposed by the MERCOSUR on US exports. This variable is a good approximation of the market access restrictions in each of the product sets. Naturally, the sensitive products are the ones which register the higher levels of protection. Brazilian exports in sensitive products are subject to the highest tariff restrictions on access to the US market. If we consider the whole MERCOSUR in relation to the US we arrive at an amazing conclusion: in spite of the fact that the average US tariff is considerably lower than the MERCOSUR level, if the sets of products that are important

¹⁷ For the classification of a sensitive product i into the reduced protection and not reduced protection sets, the tariff in the importer market (A) was used to proxy the relative efficiency of the importer with respect to the exporter (B) (e_i^{AB} , see subsection 3.3). Then, considering this proxy and the import elasticity of the importer (ε_{mi}^A), we computed the import demand of country A at the lower price of the exporter: $\tau_i^B(D_i^A(\tau_i^B) - x_i^A(\tau_i^B))$. Finally, we compared the adjusted import demand with the exporter's total supply: $\tau_i^B x_i^B(\tau_i^B)$. If the supply is (smaller) greater than the import demand it is a (not) reduced protection case. In many reduced protection cases, B 's exports were greater than A 's imports, and therefore, we did not need production data (in particular, for products where the US was the exporter, and agricultural products exported by MERCOSUR countries). We obtained some disaggregated production data from different sources: World Bank (Trade and Production Data Base), GTAP and IBGE. The import elasticities were those provided by GTAP.

from the bilateral trade perspective are considered, then to attain symmetrical market access conditions the US would have to make greater tariff concessions than would the MERCOSUR.

Table 3
Results: type of products set of products by country

		Argentina	Brazil	Paraguay	Uruguay	MERCOSUR	US
Total exports	Value (mill \$)	25187	52053	1034	2631	80905	680474
	Industries (#SITC4)	470	468	254	393	478	482
	Products (#HS 6)	4142	4250	499	1873	4731	5091
	Imposed Tariff	4,7	5,55	3,04	5,87	5,2	9,89
	Big division (SITC1)	0	7	2	0	0	7
	Big division share (%)	0,38	0,24	0,56	0,46	0,27	0,52
HighTrade Complementarity	Export share(%)	0,26	0,47	0,11	0,27	0,40	0,47
	Industries (# SITC4)	46	85	19	36	123	134
	Products (# HS 6)	323	799	34	204	975	1781
	Imposed Tariff	5,12	7,24	8,25	6,03	7,34	9,42
	Big division (SITC1)	0	7	0	0	0	7
	Big division share (%)	0,38	0,27	0,68	0,76	0,28	0,62
Sensitive Products	Export share (%)	0,07	0,15	0,07	0,17	0,15	0,38
	Industries (# SITC4)	23	35	4	17	75	129
	Products (# HS 6)	86	168	19	96	304	1686
	Imposed Tariff	15,53	21,55	13,11	9,13	18,58	11,66
	Big division (SITC1)	0	0	0	0	0	7
	Big division share (%)	0,48	0,32	0,77	0,77	0,38	0,57
Reduced Protection	Export share (%)	0,06	0,11	0,06	0,13	0,11	0,38
	Industries (# SITC4)	20	25	8	7	33	129
	Products (# HS 6)	47	61	12	16	80	1686
	Imposed Tariff	16,99	26,57	13,73	7,98	22,21	11,66
	Big division (SITC1)	0	0	0	0	0	7
	Big division share (%)	0,53	0,44	0,87	1,00	0,50	0,61
Enhanced & Intermediate	Export share (%)	0,01	0,04	0,01	0,04	0,04	
	Industries (# SITC4)	10	19		12	40	
	Products (# HS 6)	25	64	6	80	160	
	Imposed Tariff	22,61	8,53	8,72	13,04	8,41	
	Big division (SITC1)	7	8	8	8	8	
	Big division share (%)	0,90	0,65	0,63	0,97	0,50	

Source: own preparation using data from LAIA, USITC and Feenstra (2000).

The results obtained in the identification of each set of products are consistent and clear, so they validate the methodology. Unlike the global and synthetic objective of the computable general equilibrium models (see chapter III), in this case the details are relevant, we want to know which the particular products with expansion opportunities are, and which might contract their production levels. Each type of producer is associated with a different political position with respect to the trade agreement. From the perspective of the political economy model we have in mind (Grossman and Helpman, 1995), only producer

interests can, with political contributions, influence the government in the definition of its unilateral stance on the type of free trade agreement preferred.

Our original conjecture when we set out to prepare this chapter was that, considering the asymmetry in market size between the two economies (MERCOSUR and the US), exports from the US to MERCOSUR would enter under a regime of reduced protection (US domestic production would be much greater than imports from MERCOSUR at the new prices prevailing under the FTA), but exports from MERCOSUR would enter the US under a regime of enhanced protection (imports from the US are much greater than domestic production in MERCOSUR at the prices prevailing under the FTA).

The main characteristics of the political economy of an agreement based on the conjecture above could be summarized in the following group of stances:

- i) Export industries in MERCOSUR with sensitive products (MERCOSUR exports with trade complementarity and an expected increase in trade preference under the FTA) will be in favor of the agreement (MERCOSUR opportunities).
- ii) Import substitution industries and regional exporters in MERCOSUR, in sensitive products where the US is the exporter, will be against the bilateral FTA (MERCOSUR perils).
- iii) US producers will be indifferent to the FTA, they will not gain by it, but nor will they lose.
- iv) Consumers in MERCOSUR countries will gain by the effect of FTA liberalization, and consumers in the US will lose by the trade diversion associated with the increased price that MERCOSUR exports will have, and this translates into a loss of tariff income that is transferred to the smaller economy.

These results can be characterized as an extreme case of the protection regime typology developed by Grossman and Helpman (1995).

A first conclusion from a reading of table 3 is that the original conjecture is correct in the case of exports from the US to MERCOSUR. However, in exports from MERCOSUR to the US a sizeable subset of products could be entering under a reduced protection regime, and so those products would be perils to US producers. Therefore it is logical to expect opposition to the agreement by this group of US producers. In global terms, the possible FTA agreement between the US and MERCOSUR is basically trade liberalizing in both directions, but this does not mean that trade diversion costs will not be incurred in the export flows from MERCOSUR to the US in some manufacturing industries that will enjoy the protection of the bigger market, or that will eventually take advantage of trade reduction in the other market, as we shall see below.

Tables 4 and 5 present the main industries and products in each set, respectively. The profile by type of industry and product allows deeper analysis of the phenomenon in question. In the case of the US, exports to MERCOSUR in the set of industries with high trade complementarity are concentrated in the big division 7 of the SITC classification (machinery and transport equipment). When the disaggregation level increases (see tables 4 and 5), the described pattern of production is confirmed for the sets of sensitive products and there is reduced protection both at industry level (SITC, 4 digits) and at product level (HS, 6 digits). When it comes to industries, capital goods and telecommunications equipment stand out (see table 4). The star products in the US are transmission apparatus for telecommunications, and parts and accessories for transport equipment (see table 5).

There are no products under enhanced protection in the case of the US, which confirms the original conjecture.

In the sensitive products set that has the US as the importer, MERCOSUR exports are dominated by agricultural industries. In the subset of reduced protection, the export share of agricultural products is even greater. When the disaggregation level increases this pattern is confirmed, although some manufacturing industry exports which enter the US market under other protection regimes (enhanced protection or the intermediate case) could mean a peril for domestic production in the US. Among agricultural products under reduced protection those that stand out are frozen concentrated orange juice, unrefined sugar and tobacco (see table 5).

Brazilian exports account for the largest share in these three products in MERCOSUR. In Brazil, however, manufactured products loom large among the industries under reduced protection, as can be seen in table 4, and in this respect the case of motor vehicles stands out because of their considerable export share.

When it comes to agricultural products, the total production in Argentina, Uruguay and Paraguay justifies the assertion that a number of meat products should enter the US market under a reduced protection regime (see table 5). This is also confirmed when the aggregation is by industry (see table 5). In the case of Argentina, it can be seen that in the motor vehicles industry there are various products that would be cases of reduced protection.

With respect to the products that would benefit from protection in the US market without affecting it (enhanced protection) or partially reducing it (intermediate case), the outstanding industries for the MERCOSUR as a whole are textiles, clothing and footwear. For Brazil, rubber products are also important, and for Argentina some products in the motor vehicles industry are important.

A comment is in order about the products under reduced protection in the US market in relation to those under reduced protection in the MERCOSUR market. In the light of the assumptions of the theoretical model of reference, we consider that the integrating region is small compared to the rest of the world, and therefore international prices are given. The assumption seems reasonable for those US exports that enter the MERCOSUR market under a reduced protection regime. However, this is not necessarily so when the exporter is the MERCOSUR. In this case, the increase in US imports that would result from trade barrier reduction could lead to an increase in the international price, which would mean a welfare improvement for MERCOSUR exporters. This could be the case in many of the agricultural products for which MERCOSUR exports have high trade complementarity with US imports, and the agreement would mean an improvement in market access conditions.

Table 4
Main industries by type of set and country

	Argentina		Brazil		Paraguay		Uruguay		MERCOSUR			US		
	SITC	Export	SITC	Export	SITC	Export	SITC	Export	SITC	Export	USimp	SITC	Export	MSimp
Global supply														
First industry	0813	2160	0711	2541	2222	331	0111	344	0813	4466	168	792A	52367	1223
Second industry	3330	1913	2222	2314	263A	178	6512	202	2222	3104	61	776A	40156	1359
Third industry	7810	1312	0813	2229	0813	77	0422	194	7810	2884	84966	7849	28343	3243
Trade complementarity														
First industry	3330	1913	0711	2541	0111	46	0111	344	0711	2542	3322	7849	28343	3243
Second industry	7821	580	7849	1571	0011	15	8483	39	3330	1913	50648	7649	17493	3336
Third industry	0111	574	8510	1427	6341	7	0344	37	7821	1847	15325	7284	13514	2251
Sensitive products														
First industry	7821	579	8510	1393	0111	46	0111	344	7821	1834	14952	7849	28343	3243
Second industry	0111	574	7821	1254	1211	5	8431	23	8510	1424	13932	7649	17493	3336
Third industry	1212	135	0585	1161	8423	5	8510	18	0585	1277	511	7284	13514	2251
Reduced protection														
First industry	0111	574	0585	1160	0111	46	0111	344	7821	1467	2564	7849	28343	3243
Second industry	7821	422	0611	1070	1211	5	0585	4	0585	1275	418	7649	17493	3336
Third industry	1212	135	7821	1045	0611	5	0611	3	0111	1201	1758	7284	13514	2251
Enhanced & intermediate														
First industry	7821	158	8510	1355	8423	5	8431	23	8510	1386	13883			
Second industry	8481	5	625A	404	6521	2	8510	18	625A	404	3461			
Third industry	612A	5	7821	209	0544	1	8451	17	7139	373	2930			

Source: own preparation using data from LAIA, USTC and Feenstra (2000).

Table 5
Main products by type of set and country

	Argentina		Brazil		Paraguay		Uruguay		MERCOSUR			US		
	HS	Export	HS	Export	HS	Export	HS	Export	HS	Export	US imp	HS	Export	MS imp
Global supply														
First product	270900	1913	090111	2538	120100	331	510529	202	230400	4195	7	880240	30809	509
Second product	230400	1907	120100	2314	520100	176	020230	194	120100	3104	61	854213	21831	629
Third product	100590	1280	230400	2215	230400	73	100630	182	090111	2539	2825	847330	18796	702
Trade complementarity														
First product	270900	1913	090111	2538	020230	21	020230	194	090111	2539	2825	271000	3991	2965
Second product	870421	373	200911	1133	010290	15	020130	77	270900	1913	50648	852520	5246	1391
Third product	020130	346	260112	1071	020120	12	020120	65	200911	1137	291	870899	11116	1115
Sensitives products														
First product	870421	373	200911	1133	020230	21	020230	194	200911	1137	291	852520	5246	1391
Second product	020130	346	170111	1070	020120	12	020130	77	170111	1119	796	870899	11116	1115
Third product	020230	201	640399	1002	020130	11	020120	65	240120	1030	478	870829	7390	727
Reduced protection														
First product	870421	373	200911	1133	020230	21	020230	194	200911	1137	291	852520	5246	1391
Second product	020130	346	170111	1070	020120	12	020130	77	170111	1119	796	870899	11116	1115
Third product	020230	201	240120	892	020130	11	020120	65	240120	1030	478	870829	7390	727
Enhanced&intermediate														
First product	870431	153	640399	1002	620342	5	611010	9	640399	1005	5614			
Second product	870120	5	401120	228	520812	2	640391	9	840991	373	2930			
Third product	640610	5	401110	177	070200	1	620331	8	870431	264	9791			

Source: own preparation using data from LAIA, USTR and Feenstra (2000).

Table II.1 in Annex II presents more exhaustive results with respect to the sensitive products aggregated at the level of industry. The industries are classified according to the protection regimes of their products, with information in each case about the volume of exports (in millions of US dollars), the imposed tariff and the number of products (HS six digits)¹⁸. When the MERCOSUR is an exporter, the member countries with high trade complementarity with the US market are identified. The products in which MERCOSUR and the US have simultaneously export and import specialization do not seem relevant in terms of volume of trade. The products in the motor vehicles industry are an exception to this.

5. Conclusions

Given the assumptions about political economy in the model, it was interesting in this study to analyze the effect that the possible FTA might have on producers' interests. It was assumed that there are n specific factors in the economy, one for each sector. The ownership of these factors is very concentrated, so the objective function of each owner-producer of a specific factor in each sector will be to maximize his net benefits from the contributions which he has to make to influence the decision which the government is going to take about how far to subscribe to the trade agreement (from not accepting it to subscribing to it completely with no restrictions). Therefore, from the point of view of the viability of the agreement, the only relevant interest to consider is that of the producers, acting either to defend their domestic market or seeking to export more to the new partner market.

Denominations, definitions and an explicit methodology were established in order to identify each sector and product.

For each country participating in the agreement, the industries in which that country would be relatively more inefficient (an importer), and those in which it would be relatively more efficient (an exporter), were determined. In this way, a first group of high trade complementarity industries was defined, those in which an expansion and/or contraction of production was expected to occur. An index of trade complementarity was used, and the specialization indicators of each country were adjusted to take account of the size of each economy.

Then, at a level of greater disaggregation, the trade policy information was processed on the level of products so as to determine the sensitive products within the industries that had been identified. The collection of sensitive products was divided into two different groups: the perils and the opportunities.

A peril for a particular country occurs when the concession of improved access to its market for a product in which the other country has a comparative advantage results in the displacement of production oriented to the domestic (regional) market.

An opportunity for a particular country occurs when the gain in improved access for a product in which this country is an exporter and the other an importer leads to an expansion in the domestic supply of the exporter.

¹⁸ In Table II.1, IT is the imposed tariff: ITMS (ITUS) is the imposed tariff faced by MERCOSUR (US) exports in the US (MERCOSUR) market.

Given that, in the agreement being evaluated, one of the parties is a region made up of a group of countries, the only thing that has to be taken into consideration is that, in the case of the region-country, the region itself is considered as a domestic market.

An explicit link between the perils and opportunities definitions and the protection regimes typology was established. An opportunity which is not a peril for the other party is associated with a regime of enhanced protection. A peril without a corresponding opportunity is a case of reduced protection. In the intermediate case, a peril and an opportunity co-exist.

The discrimination of situations was done by comparing domestic offer in the exporting country with excess domestic demand in the importer, at the price which will prevail when the agreement is in force. The determination of the regime is a key factor for knowing the kind of distributive effects in each case, and in particular their influence on the objective function of the producers.

To sum up, the political economy of an eventual agreement can be summarized in the following characteristics:

- Agricultural producers in the US face a peril with respect to the constitution of an FTA with the MERCOSUR countries, while agricultural producers in MERCOSUR could have opportunities through an improvement in international prices due to liberalization and the resulting expansion in demand. In this situation, the cases of frozen orange juice, sugar, tobacco and meat of bovine animals stand out.
- There are no evident opportunities for US producers in the MERCOSUR because of the reduced size of the regional market. US exporters enter under reduced protection conditions, and international prices should not be significantly affected as a result of the agreement. On the other hand, producers of manufactures in the MERCOSUR face an evident peril in their domestic market and for their regional exports. The machinery and capital goods industries stand out, as well as some sub sectors in the motor vehicle industry.
- MERCOSUR opportunities, that is, those products that would benefit from protection in the US market, are concentrated in lighter manufactures in the footwear and clothing industries.

That is to say, MERCOSUR producers in agricultural industries in which the zone has significant comparative advantages and in sub sectors of light manufacturing industries, would have opportunities and would face resistance to the agreement from MERCOSUR producers in the heavier manufacturing industries of machinery and transport equipment. Meanwhile, in the US various agricultural industries should be against the agreement. Although it is not determinant from a political economy point of view, in general, the consumers in both parts would benefit from the agreement given its liberalizing character. Therefore, we expect a net aggregate welfare gain on both sides.

Bibliography

- Anderson K. and H. Norheim; 1993: "From imperial to regional trade preferences: its effect on Europe's Intra and Extra-Regional Trade", *Weltwirtschaftliches Archiv*, 129(1), pp. 78-101.
- Balassa, B; 1965: "Trade Liberalization and "Revealed" Comparative Advantage", *The Manchester School of Economic and Social Studies*, 33, pp. 99-123.
- Comunidades Europeas, 2001: "Reglamento (CE) No 2501/2001 del Consejo de 10 de diciembre de 2001 relativo a la aplicación de un sistema de preferencias arancelarias generalizado entre el 1 de enero de 2002 y el 31 de diciembre del 2004", Diario Oficial de las CE, 31/12/2001.
- Drysdale, Peter; 1988: "International Economic Pluralism. Economic Policy in East Asia and the Pacific", Sydney.
- Feenstra, Robert C., 2000: "World Trade Flows, 1980-1997, with Production and Tariff Data", Center for International Data, Institute of Governmental Affairs, University of California, Davis, and National Bureau of Economic Research.
- Gawande Kishore, Sanguinetti Pablo, Bohara K. Alok, 2001: "Exclusions for sale: evidence on the Grossman-Helpman model of Free Trade Agreements", NAFTA-MERCOSUR Working Paper Series No 4, Latin American and Iberian Institute, July.
- Giordano, Paolo, Valladao Alfredo, Duran Marie-Francoise, 2001: "Vers un accord entre L'Europe et le MERCOSUR", Presses de Science Po.
- Grossman, G. and E. Helpman, 1995: "The politics of Free Trade Agreements", *American Economic Review*, 85(4), pp. 667-690.
- LAIA, 2001: "Impacto del Alca en el comercio intrarregional y en el comercio de los países miembros de la ALADI con Estados Unidos y Canadá", Estudio 139.
- LAIA, 2002: "Impacto que tendrían los acuerdos con la UE en el comercio intraregional y en el comercio de los países miembros con los países de Europa", in press.
- OECD-UNCTAD, 1997: "Indicators of tariff & Non-tariff trade barriers", OECD Publications Service, CD Rom, Paris.
- OECD, 2000: "Tariffs and Trade", CD Rom.
- WTO, 2002: "Trade Policy Review European Union, Report by the Secretariat", Trade Policy Review Body, WT/TPR/S/102, Restricted, June.
- Rodrik, Dani, 1991: "Policy uncertainty and private investment in developing countries", *Journal of Development Economics*, 36, pp. 229-242. North Holland.
- Stiglitz, 1999: "Two principles for the next round or how to bring developing countries in from the cold", WTO, September, Geneva.
- Vaillant and Ons, 2002: "Preferential Trading Arrangements between the European Union and South America: The Political Economy of Free Trade Zones in Practice", *The World Economy*, November, Blackwell Publishing.
- World Trade Organization, 1999: "International Trade Statistics: annual report 1998", WTO Publications, Bernan Press, CD Rom, Geneva.

Annex I
Economic effects of an FTA: analytical expressions

II.1 Enhanced protection

- Country A

$$\Delta W_i^A = \Delta TR_i^A = -(\tau_i^A - 1)x_i^B(\tau_i^A) \quad (\text{I.1})$$

where Δ means variation; and W_i^A is the contribution of the industry i to country A 's welfare.

- Country B

$$\Delta \pi_i^B = \int_{\tau_i^B}^{\tau_i^A} x_i^B(p_i^B) dp_i^B = \int_{\tau_i^B}^{\tau_i^A} \pi_{ip}^B(p_i^B) dp_i^B = \pi_i^B(p_i^B) \Big|_{\tau_i^B}^{\tau_i^A} = \pi_i^B(\tau_i^A) - \pi_i^B(\tau_i^B) \quad (\text{I.2})$$

where π are the producers' profits; and p is the producer price.

$$\Delta TR_i^B = (\tau_i^B - 1)x_i^B(\tau_i^B) \quad (\text{I.3})$$

$$\Delta W_i^B = \Delta \pi_i^B + \Delta TR_i^B \quad (\text{I.4})$$

- Zone (Z)

$$\Delta W_i^Z = (\tau_i^B - 1)x_i^B(\tau_i^B) + \Delta \pi_i^B - (\tau_i^A - 1)x_i^B(\tau_i^A) < 0 \quad (\text{I.5})$$

II.2 Reduced Protection

- Country A

$$\Delta \pi_i^A = -\int_{\tau_i^B}^{\tau_i^A} x_i^A(p_i^A) dp_i^A = -\int_{\tau_i^B}^{\tau_i^A} \pi_{ip}^A(p_i^A) dp_i^A = -\pi_i^A(p_i^A) \Big|_{\tau_i^B}^{\tau_i^A} = -[\pi_i^A(\tau_i^A) - \pi_i^A(\tau_i^B)] \quad (\text{I.6})$$

$$\Delta S_i^A = \int_{\tau_i^B}^{\tau_i^A} D_i^A(q_i^A) dq_i^A = \int_{\tau_i^B}^{\tau_i^A} -S_{ip}^A(q_i^A) dq_i^A = -S_i^A(q_i^A) \Big|_{\tau_i^B}^{\tau_i^A} = S_i^A(\tau_i^B) - S_i^A(\tau_i^A) \quad (\text{I.7})$$

where S is the consumers' surplus; and q is the consumer price.

$$\Delta TR_i^A = -(\tau_i^A - 1)m_i^A(\tau_i^A) \quad (\text{I.8})$$

$$TC_i^A = [\pi_i^A(\tau_i^B) - \pi_i^A(\tau_i^A)] + [S_i^A(\tau_i^B) - S_i^A(\tau_i^A)] - (\tau_i^A - \tau_i^B)m_i^A(\tau_i^A) \quad (\text{I.9})$$

$$TD_i^A = -(\tau_i^B - 1)m_i^A(\tau_i^A) \quad (I.10)$$

$$\Delta W_i^A = TC_i^A + TD_i^A \quad (I.11)$$

- Country B

$$\Delta W_i^B = \Delta TR_i^B = (\tau_i^B - 1)m_i^A(\tau_i^B) \quad (I.12)$$

- Zone

$$Ar(6) - Ar(5) = (\tau_i^B - 1)m_i^A(\tau_i^B) - (\tau_i^B - 1)m_i^A(\tau_i^A) = (\tau_i^B - 1)[m_i^A(\tau_i^B) - m_i^A(\tau_i^A)] > 0 \quad (I.13)$$

$$\Delta W_i^Z = TC_i^A + TD_i^A + \Delta TR_i^B \quad (I.14)$$

II.3 Intermediate case

- Country A

$$\Delta \pi_i^A = -\int_{\tau_i}^{\tau_i^A} x_i^A(p_i^A) dp_i^A = -\int_{\tau_i}^{\tau_i^A} \pi_{ip}^A(p_i^A) dp_i^A = -\pi_i^A(p_i^A) \Big|_{\tau_i}^{\tau_i^A} = -[\pi_i^A(\tau_i^A) - \pi_i^A(\tau_i)] \quad (I.15)$$

$$\Delta S_i^A = \int_{\tau_i}^{\tau_i^A} D_i^A(q_i^A) dq_i^A = \int_{\tau_i}^{\tau_i^A} -S_{ip}^A(q_i^A) dq_i^A = -S_i^A(q_i^A) \Big|_{\tau_i}^{\tau_i^A} = S_i^A(\tau_i^B) - S_i^A(\tau_i) \quad (I.16)$$

$$\Delta TR_i^A = -(\tau_i^A - 1)m_i^A(\tau_i^A) \quad (I.17)$$

$$TC_i^A = [\pi_i^A(\tau_i) - \pi_i^A(\tau_i^A)] + [S_i^A(\tau_i) - S_i^A(\tau_i^A)] - (\tau_i^A - \tau_i)m_i^A(\tau_i^A) \quad (I.18)$$

$$TD_i^A = -(\tau_i - 1)m_i^A(\tau_i^A) \quad (I.19)$$

$$\Delta W_i^A = TC_i^A + TD_i^A \quad (I.20)$$

- Country B

$$\Delta \pi_i^B = \int_{\tau_i^B}^{\tau_i} x_i^B(p_i^B) dp_i^B = \int_{\tau_i^B}^{\tau_i} \pi_{ip}^B(p_i^B) dp_i^B = \pi_i^B(p_i^B) \Big|_{\tau_i^B}^{\tau_i} = \pi_i^B(\tau_i) - \pi_i^B(\tau_i^B) \quad (I.21)$$

$$\Delta TR_i^B = (\tau_i^B - 1)x_i^B(\tau_i^B) \quad (I.22)$$

$$\Delta W_i^B = (\Delta \pi_i^B + \Delta TR_i^B) > 0 \quad (I.23)$$

- Zone

$$\Delta W_i^Z = \Delta W_i^A + \Delta W_i^B \quad (\text{I.24})$$

Annex II

Table II.1
Main Opportunities and Perils

SITC	MERCOSUR EXPORTER								US EXPORTER			MERCOSUR AND US EXPORTERS												
	REDUCED				NOT REDUCED				REDUCED			MS REDUCED AND US REDUCED						MS NOT RED. AND US RED.						
	US PERILS				MS OPPORTUNITIES (EVENTUAL) US PERILS				MS PERILS			COMMON PERILS						MS OPPORTUNITIES, MS PERILS AND (EVENTUAL) US PERILS						
	EXP	IT	CTRY	#HS	EXP	IT	CTRY	#HS	EXP	IT	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS	
0111	1201	8.26	A,B,P,U	6																				
0412										3593	5.00	1												
0421										416	8.09	2												
0422										613	10.96	2												
0440										4890	8.00	1												
0481										251	15.14	10												
0542										341	5.00	9												
0545					3	13.02	A	5																
0546										591	13.38	15												
0574										381	10.00	1												
0575										375	10.00	1	12	2.67	A	197	10.00	1						
0577										1008	10.00	13												
0579										839	10.00	18	14	0.61	A	156	10.00	2	0	1.12	A	146	10.00	5
0585	1275	38.78	A,B,U	6	2	8.35	A,B	1																
0589										30	14.00	3	44	32.51	A,B	231	14.00	7	7	6.17	A,B	88	14.00	3
0611	1119	25.48	A,B,P,U	1																				
0620	104	12.67	A,B	1																				
0730	48	9.97	B	3	5	20.42	B	1																
1121	48	9.16	A	3																				
1211	99	42.44	A,B,P	1																				
1212	1030	53.07	A,B,P	1																				
1213	46	68.36	A,B	1																				
2331										1287	7.81	14												
263A										2143	6.01	6												
266A										947	11.55	19												
2919										255	5.14	8												
2929										213	7.29	16												
3345										359	14.00	4												
4113										473	6.02	6												
4232										643	10.40	2												
511A										2626	6.11	44												
5121										941	9.82	25	91	19.60	A,B,P	282	15.09	5	0	3.86	A,B,P	87	2.40	1
513A										2356	8.41	59												
514A										1606	9.35	25	198	5.53	B	733	8.49	9	44	5.02	B	1470	5.77	16
5161										694	5.27	13	9	5.53	B	38	4.17	2	36	4.50	B	224	6.89	1
5162										412	7.02	28												
5169										316	11.73	4												
5221										647	5.32	21	162	5.40	A,B	36	6.00	1						
5224										220	7.81	12												
5225										505	6.29	18	29	2.97	B	33	4.67	1						
5231										1734	8.74	97												
5239										173	5.86	10	12	3.29	A,B	74	5.64	1						
5415										443	5.95	7												
5513										830	12.97	16												
5530										2710	17.99	19												

Table II.1 (cont.)

SITC	MERCOSUR EXPORTER								US EXPORTER			MERCOSUR AND US EXPORTERS											
	REDUCED				NOT REDUCED				REDUCED			MS REDUCED AND US REDUCED						MS NOT RED. AND US RED.					
	US PERILS				MS OPPORTUNITIES (EVENTUAL) US PERILS				MS PERILS			COMMON PERILS						MS OPPORTUNITIES, MS PERILS AND (EVENTUAL) US PERILS					
	EXP	IT	CTRY	#HS	EXP	IT	CTRY	#HS	EXP	IT	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS
5542								1338	14.31	9													
582A								4827	11.45	20													
584A								711	10.18	10													
591A								1631	12.72	5													
5922	97	4.36	A,B	4																			
5989								8221	8.97	52													
612A	25	5.15	A,B,U	1	65	9.36	A,B,U	2															
6210								982	13.11	18													
625A								351	13.61	10							404	3.70	B	2125	16.00	2	
6282								59	14.00	5	17	3.79	B	69	14.00	3	4	4.36	B	46	14.00	1	
6289								1182	13.56	10													
6428								1205	14.37	11													
6521					14	8.27	B,P	7															
6575	3	8.96	B	2																			
6577								378	15.61	12													
6584	166	9.94	B	5	19	9.38	B	7															
6623								322	9.29	5													
6638								101	13.94	10													
6664					1	13.30	U	1															
6665					26	8.84	B	1															
6716	428	4.13	A,B	4	1	3.06	A,B	4															
6811								516	6.66	4													
692A								820	14.58	9													
6931								289	14.00	3	11	2.04	A,B	21	13.76	2							
6953								772	18.00	25													
6954								1502	16.64	16													
6996								531	15.60	10													
712A								651	14.00	4													
7133								455	14.00	3													
7139								7545	16.41	8							373	1.94	A,B	2801	15.20	1	
716A								3098	14.29	20													
7188								367	14.00	9													
7211								336	14.00	7													
7212								1678	14.94	12													
7213								87	14.00	3													
7219								450	14.00	8													
723A								7941	8.23	21													
7252								257	11.45	5													
7259								434	14.00	3													
727A								658	13.25	11													
7283								780	14.00	7													
7284								13514	13.02	39													
7361								1944	13.91	52													
7369								1693	12.94	5													
7371								187	8.50	4													
7413								1865	13.82	23													
7414								3838	14.87	11													
7416								1792	13.67	12													
742A								2593	14.03	11	154	2.50	B	392	18.00	1							
743A								2477	12.46	7													
7441								1037	14.00	8													
7442								4547	11.16	30													
7451								589	13.46	7													
7452								2788	12.81	27													

Table II.1 (end)

SITC	MERCOSUR EXPORTER								US EXPORTER			MERCOSUR AND US EXPORTERS											
	REDUCED				NOT REDUCED				REDUCED			MS REDUCED AND US REDUCED						MS NOT RED. AND US RED.					
	US PERILS				MS OPPORTUNITIES (EVENTUAL) US PERILS				MS PERILS			COMMON PERILS						MS OPPORTUNITIES, MS PERILS AND (EVENTUAL) US PERILS					
	EXP	IT	CTRY	#HS	EXP	IT	CTRY	#HS	EXP	IT	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS	EXMS	ITMS	CTRY	EXUS	ITUS	#HS
7493								902	14.03	3	38	4.50		171	16.00	1	12	3.71	B	493	14.13	3	
7499								1366	14.30	13													
7511								42	18.14	4													
7591								1375	13.01	4													
762A				1	4.37	B	1																
7641								4904	11.97	8													
7649								17493	8.77	28													
771A								3236	15.86	11													
7732								488	16.00	6													
7742								1232	9.09	6													
7752								741	20.00	6													
7757								879	18.85	9													
7781								1418	16.20	13													
7782								702	17.19	9													
7783								1980	17.47	13													
7788								6073	13.04	32													
7821								798	14.00	2	1467	18.99	A,B	1893	19.39	4	367	19.08	A,B	5988	20.00	4	
7822								1099	17.08	11													
7849								28041	14.75	15	156	2.00	B	240	16.00	1	0	1.07		62	9.57	1	
792A								9	20.00	2													
8421				15	18.43	U	7																
8422				5	16.89	U	3																
8423				5	9.50	P	2																
8429				10	12.71	U	31																
8431				23	15.23	U	7																
8432				3	16.80	U	4																
8442	21	7.40	B	1	0	6.60	B	5															
8451				17	12.33	U	4																
8471				3	6.68	U	8																
8481				13	5.63	A,U	2																
8483	56	4.00	A	1																			
8510	38	15.48	B	3	1386	9.02	B,U	17															
8720								8240	10.63	14													
8745								758	13.24	7													
8748								13410	12.16	39													
8749								2574	11.89	9													
8813								1876	11.63	20													
8822								2242	9.02	32													
8921								36	11.82	4													
8946								248	20.00	8													
895A								831	17.07	21													
8982								211	16.74	10													

Annex III
Industries and products descriptions

Table III.1
Main industries descriptions

SITC	DESCRIPTION
0011	ANIMALS OF THE BOVINE SPECIES,INCL.BUFFALOES,LIVE
0111	MEAT OF BOVINE ANIMALS, FRESH, CHILLED OR FROZEN
0344	FISH FILLETS,FROZEN
0711	COFFEE,WHETHER OR NOT ROASTED OR FREED OF CAFFEINE
0813	OIL-CAKE & OTHER RESIDUES (EXCEPT DREGS)
3330	PETROL.OILS & CRUDE OILS OBT.FROM BITUMIN.MINERALS
0544	TOMATOES,FRESH OR CHILLED
0585	JUICES;FRUIT & VEGET.(INCL.GRAPE MUST) UNFERMENTED
0611	SUGARS,BEET AND CANE,RAW,SOLID
1211	TOBACCO,NOT STRIPPED
1212	TOBACCO,WHOLLY OR PARTLY STRIPPED
2222	SOYA BEANS
263A	COTTON
3330	PETROL.OILS & CRUDE OILS OBT.FROM BITUMIN.MINERALS
612A	MANUFACTURES OF LEATHERIOF COMPOSITION LEATHER NES
625A	RUBBER TYRES,TYRE CASES,ETC.FOR WHEELS
6341	WOOD SAWN LENGTHWISE,SLICED/PEELED,BUT NOT PREPAR.
6512	YARN OF WOOL OR ANIMAL HAIR (INCLUDING WOOL TOPS)
6521	COTTON FABRICS,WOVEN,UNBLEACHED,NOT MERCERIZED
7139	PARTS OF INT.COMB.PISTON ENGINES OF 713.2-/713.8-
7284	MACH.& APPLIANCES FOR SPEZIALIZED PARTICULAR IND.
7649	PARTS OF APPARATUS OF DIVISION 76-
776A	THERMIONIC,COLD & PHOTO-CATHODE VALVES,TUBES,PARTS
7810	PASSENGER MOTOR CARS,FOR TRANSPORT OF PASS.& GOOD
7821	MOTOR VEHICLES FOR TRANSPORT OF GOODS/MATERIALS
7849	OTHER PARTS & ACCESSORIES OF MOTOR VEHICLES
792A	AIRCRAFT& ASSOCIATED EQUIPMENT AND PARTS
8423	TROUSERS,BREECHES ETC.OF TEXTILE FABRICS
8431	COATS AND JACKETS OF TEXTILE FABRICS
8451	JERSEYS,PULL-OVERS,TWINSETS,CARDIGANS,KNITTED
8481	ART.OF APPAREL & CLOTHING ACCESSORIES,OF LEATHER
8483	FUR CLOTHING,ARTICLES MADE OF FURSKINS
8510	FOOTWEAR

Table III.2
Main products description

HS	Description
010290	Live Bovine Animals (Excl. Pure-Bred For Breeding)
020120	Fresh Or Chilled Bovine Cuts, Unboned (Excl. Carcases And 1/2 Carcases)
020130	Fresh Or Chilled Bovine Meat, Boneless
020230	Boneless, Frozen Meat Of Bovine Animals
070200	Tomatoes, Fresh Or Chilled
090111	Coffee (Excl. Roasted And Decaffeinated)
100590	Maize (Excl. Seed)
100630	Semi-Milled Or Wholly Milled Rice
120100	Soya Beans, Whether Or Not Broken
170111	Raw Cane Sugar (Excl. Added Flavouring Or Colouring)
200911	Frozen Orange Juice, Whether Or Not Containing Added Sugar Or Other Sweetening Matter (Excl. Fermented Or Containing Spirit)
230400	Oil-Cake And Other Solid Residues, Whether Or Not Ground Or In The Form Of Pellets, Resulting From The Extraction Of Soya-Bean Oil
240110	Tobacco, Not Stemmed Or Stripped
240120	Tobacco, Partly Or Wholly Stemmed Or Stripped, Otherwise Unmanufactured
260112	Agglomerated Iron Ores And Concentrates Ecsc (Excl. Roasted Iron Pyrites)
270900	Petroleum Oils And Oils Obtained From Bituminous Minerals, Crude
271000	Lubricating petroleum oils or bituminous oils >70% (SITC 3345)
401110	New Pneumatic Tyres, Of Rubber, Of A Kind Used For Motor Cars, Incl. Estate And Racing Cars
401120	New Pneumatic Tyres, Of Rubber, Of A Kind Used For Buses And Lorries (Excl. Tyres With Lug, Corner Or Similar Treads)
510529	Wool, Combed (Excl. That In Fragments Open Tops)
520100	Cotton, Neither Carded Nor Combed
520812	Plain Woven Fabrics Of Cotton, Containing >=85 % Cotton By Weight And Weighing >100 G To 200 G Per M2, Unbleached
611010	Jerseys, Pullovers, Cardigans, Waistcoats And Similar Articles, Of Wool Or Fine Animal Hair, Knitted Or Crocheted (Excl. Wadded Waistcoats)
620331	Men's Or Boys' Jackets And Blazers Of Wool Or Fine Animal Hair (Excl. Knitted Or Crocheted, And Wind-Jackets And Similar Articles)
620342	Women's Or Girls' Jackets And Blazers Of Cotton (Excl. Knitted Or Crocheted, Wind-Jackets And Similar Articles)
640391	Footwear With Outer Soles Of Rubber, Plastics Or Composition Leather, With Uppers Of Leather, Covering The Ankle
640399	Footwear With Outer Soles Of Rubber, Plastics Or Composition Leather, With Uppers Of Leather
640610	Uppers And Parts Thereof (Excl. Stiffeners And General Parts Made Of Asbestos)
760110	Aluminium, Not Alloyed, Unwrought
840991	Parts Suitable For Use Solely Or Principally With Spark-Ignition Internal Combustion Piston Engines, N.E.S.
847330	Parts And Accessories For Automatic Data-Processing Machines Or For Other Machines Of Heading 8471 , N.E.S.
852520	Transmission Apparatus Incorporating Reception Apparatus, For Radio-Telephony, Radio-Telegraphy, Radio-Broadcasting Or Television
854213	Monolithic Digital Integrated Circuits As Metal Oxide Semiconductor Circuits, Of Mos Type (Excl. Smart Cards)
870120	Road Tractors For Semi-Trailers
870421	Motor Vehicles For The Transport Of Goods, With Compression-Ignition Internal Combustion Piston Engines Of A Gross Vehicle Weight =<5 Ton
870431	Motor Vehicles For The Transport Of Goods, With Spark-Ignition Internal Combustion Piston Engines, Of A Gross Vehicle Weight =<5 Tonnes
870829	Parts And Accessories Of Bodies For Tractors, Motor Vehicles For The Transport Of Ten Or More Persons, Motor Cars And ...
870899	Parts And Accessories, For Tractors, Motor Vehicles For The Transport Of Ten Or More Persons, Motor Cars And
880240	Aeroplanes And Other Powered Aircraft Of An Of An Unladen Weight >15 000 Kg (Excl. Helicopters And Dirigibles)
880330	Parts Of Aeroplanes Or Helicopters, N.E.S. (Excl. Those For Gliders)