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Assessing the impact of Non-Tariffs Barriers during the Global Crisis: the experience of Argentina, Ecuador and Venezuela[1]

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[2] We would like to acknowledge Nevin Rosaasen for helping us correcting the translation of this paper

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Abstract

The recent Global Financial Crisis resulted in governments initiating special measures to protect the competitiveness of their domestic industries. This research paper assesses the adoption of non-tariff barriers including antidumping, quotas, guaranteed minimum prices and the granting of special licenses; whose overall impact is difficult to assess because of the nature of such measures.

In this scenario, we propose a methodology to assess the impact of these policies, by the generation of a tariff-like proxy used to shock the normal reported tariff rates. This methodology is constructed directly from data on affected tariff lines, imports, and variations on price and quantity during the crisis. This information is included in the GTAP version 7 to quantify, through the GTAP model, the effects of different macroeconomic variables such as exports, imports and GDP. The quantification comes from the variation between the base scenario and the new scenario, which includes the real tariff proxy.

The cases of Argentina, Ecuador and The Bolivarian Republic of Venezuela are particularly interesting as these economies imposed the largest number of NTBs in all Latin America and the Caribbean throughout the crisis period. The results shed light over the real impact that these measures have had in relation to what is theoretically expected.

The study concludes with recommendations for policy makers of countries seeking protection from the economic crisis. Other alternatives are considered for implementation thereby reducing the noise over other key macroeconomic variables, especially regarding intraregional trade.

1 Introduction

The recent international crisis is regarded as the worst crisis in the past 80 years. Although originating in the United States as a result of strong financial turmoil, the crisis resulted in a global slowdown in world trade and production. Latin American countries were not immune to this trend as they also saw reductions in economic growth, trade flows, remittances and foreign direct investment. Given the macroeconomic situation and declining terms of trade, countries of the region succumbed to major internal and external pressures for greater use of protectionist measures of various types (both tariff and non tariff barriers).

As international trade has increased in recent decades, there are growing demands for appropriate policies to mitigate the undesirable impacts of the recent crisis, especially regarding trade policy. This paper assesses the potential impact of measures implemented by countries in Latin America to address the international crisis, especially those carried out by Argentina, Ecuador and the Bolivarian Republic of Venezuela. These three countries were the most active in the region in regards to implementing trade barriers throughout the crisis period.

This paper discusses a number of macroeconomic scenarios based on changing perspectives on the global economy and the actions taken by the countries of the region from August 2008 to late March 2010. This study aims to evaluate the possible effects of these restrictive measures to intraregional trade in a future period of crisis.

Once the crisis scenarios are determined, this paper discusses national and regional alternatives of policies to mitigate the adverse effects and quantitatively evaluate their potential impacts on major macroeconomic variables including production, trade specialization, income distribution and poverty.

2 The GTAP model and trade database used in the modulations

This section describes the methodology used to simulate the effects of changes in trade policy of three countries of Latin American and the Caribbean region: Argentina, Ecuador and the Bolivarian Republic of Venezuela. The present study reproduces ad valorem tariffs of NTBs imposed in some Latin American countries

This study applies the computable general equilibrium approach, using the GTAP multi-country and multi-product standard model (Hertel, 1997)[3]. Details on the model and aggregations used, as well as particular characteristics of each case, are described in the subsections below.

2.1 Model description

To assess the impact of trade policy under crisis measures, we used the Global Trade Analysis Project (GTAP) General Equilibrium model from Purdue University and its latest data base (7.0). The GTAP is an international community of established institutions and researchers that promote trade policy analysis through a fluid exchange of useful information and modeling frameworks. The aim of this project is to provide updated datasets of bilateral trade, import protection and transport data, substitution elasticities and other behavioral parameters. These are modeled in combination with individual country based input-output databases, which take into account the productive structure of the represented countries. The Project also provides a modeling framework, the GTAP model (Hertel, T. (1997) and Schuschny, Durán & de Miguel, (2007)), to conduct CGE static analysis of multi-region and economy-wide scenarios. The GTAP model is a standard, multi-region, applied general equilibrium model that assumes constant returns to scale and perfect competition in production activities. This model is able to simulate the effects of trade policy interventions through a set of specific shocks that affect the comparative static equilibrium and result in a new equilibrium state, that represent the medium-term pattern of the global production and trade creation and erosion.

The standard GTAP model uses a regional representative household simulated by a Cobb-Douglas function to assign constant expenditure shares to private consumption, public expenditure and savings. This representation allows us to perform an unambiguous indicator of welfare offered by the regional utility function which accounts for the three sources of utility. Private household behavior is modeled by means of a Stone-Geary utility function, where all subsistence shares are equal to zero. This specification allows for a well-defined intertemporal maximization between consumption and savings.

Firm behavior is modeled using a technology tree that relies on the assumptions of separability in production. Decisions have been made at each level, without considering the variables at other levels. It is assumed that firms first choose between primary factors independently of the prices of intermediate inputs as well as assuming constant returns to scale. The combination of primary factors and intermediate inputs is assigned using a Leontief function. The model assumes that there is imperfect factor mobility which is described with Constant Elasticity of Transformation (CET) income functions. The design of the simulations assumes that there is full employment, although the use of slack variables allows the introduction of some flexibility in regards to this assumption. The combination of intermediate domestic and foreign inputs is selected through Constant Elasticity of Substitution (CES) functions. The selection between foreign inputs is based

[3] For details on the GTAP model, see Schushny, Durán and de Miguel (2007).

on an Armington specification within CES functions. Finally, the different factors[4] are assigned with CES functions. All the elasticities of substitution are held constant during the simulations[5].

Aggregate investment is not explained within the standard GTAP model because it doesn't consider macroeconomic policies and monetary phenomena. In the GTAP model, investment follows the savings for adjustment. Accordingly, the macroeconomic closure[6] employed is the standard neo-classical and investment is enforced to adjust, along with regional changes in saving levels. In addition, a global closure is assumed and the current account deficits can differ from zero. Nevertheless, it must be balanced in the global bank, where the trade deficit must be compensated between regions.

Last but not least, the use of a set of accounting balance relationships embodies all the needed general equilibrium conditions. Nonlinear programming is used to find the solution of the CGE outcomes. It is important to note that the simulation results include the full adjustment of the economy to the policy intervention shock and thus, can represent the short-run effect of the considered shocks and scenarios.

The modeling displayed here includes simulations of the real effects of the international crisis of 2009, in order to "reproduce" the effects due to the changes in the trade policies of the three countries of Latin America and the Caribbean that implemented the most crisis measures in proportion to the rest of the countries of the region (Argentina, Ecuador, and the Republic of Venezuela).

2.2. Regional and Commodity Aggregation

The countries and sectors selected for this study were the main economies with IO tables in the GTAP Model (fifteen countries: Argentina, Bolivia, Brazil, Chile, Costa Rica, Colombia, Ecuador, Guatemala, Mexico, Nicaragua, Panama, Peru, Uruguay, and the Bolivarian Republic of Venezuela), and the relevant trading partners of the region, specifically the United States, European Union and China. The GTAP database (version 7) was aggregated into 33 sectors and 21 regions. Table 1 contains the 33 sectors, which correspond to 12 primary sectors, 11 light manufacturing sectors, 9 heavy industry sectors and one aggregated services sector (see table 6 for a summarized version). The classification used in this study is the same used by Duran et al, (2009).[7]

Table 3 contains the 22 countries/regions considered in this study. More emphasis has been placed on the disaggregation for Latin America.

[4] Consumption, investment, government expediture, among other economic variables.
[5] A Systematic Sensitivity Analysis (SSA) was done over these elasticities because they are the most relevant parameters in connection with trade effects and terms of trade variability.
[6] Declaration of exogenous and endogenous variables in the model.
[7] For further details of changes in aggregation, see Schushny et al., (2007), Durán et al., (2007) and Schushny et al., (2008), where 30 sectors were considered instead of the 33 included here.

TABLE 1
SECTORAL AGGREGATION OF THE GTAP DATABASE

No.	Sector	Description	Aggregates
1	Rice	Paddy	Agriculture and agricultural products
2	Wheat	Wheat	
3	Other Cereals	Corn, barley, etc.	
4	Fruits and Vegetables	Fruits, Vegetables, Vegetables	
5	Oil seeds and oleaginous fruits	Soya, sunflower, oil palm	
6	Plant fibers	Cotton, jute	
7	Other Crops	Sugar cane, coffee, cocoa, and flowers.	
8	Animal husbandry	Cattle, pigs, birds, etc.	
9	Forest	Forestry and logging	
10	Fishing	Fishing	
11	Energy Extraction	Extraction of Coal, Crude oil and natural gas	Extraction and Mining
12	Mining	Mining	
13	Meat	Meat products from cattle, swine, and poultry	Light Manufacturing
14	Vegetable oils and fats	Vegetable oils and fats	
15	Dairy	Dairy products (milk, yogurt, cheese)	
16	Sugar	Refined sugar	
17	Other Food	Milled rice, bakery products, confectionery, etc.	
18	Drinks and snuff	Drinks and snuff products	
19	Textiles	Textiles	
20	Apparel	Apparel	
21	Leather and footwear	Footwear and Leather Products	
22	Wood Products	Wood products, furniture	
23	Paper Products	Paper products, printing, etc.	
24	Refined Oil Products	Refined petroleum products (gasoline, naphtha, etc.).	Heavy Manufactures
25	Chemicals	Chemicals and pharmaceuticals	
26	Mineral Products	Glass, stone products	
27	Metal Products	Steel Plates	
28	Metal products	Metal products	
29	Vehicles	Vehicles and parts	
30	Transport Equipment	Transport Equipment	
31	Machinery and Equipment	Machinery and Equipment	
32	Other Articles		
33	Services	Electricity, Water, transport, construction, financial services, real estate, government (education, health, etc.), Etc.	Services

Fuente: Agregación en base a 57 sectores de la base de datos GTAP, versión 7.0.

TABLE 2
REGIONAL AGGREGATION OF THE GTAP 7.0 DATABASE

No.	Codes	Countries	Regions/Subregions
1	**CRI**	**Costa Rica**	Central America
2	GTM	Guatemala	
3	NIC	Nicaragua	
4	PAN	Panama	
5	MEX	Mexico	Mexico
6	BOL	Bolivian, Plurinational State	Andean Countries
7	COL	Colombia	
8	ECU	Ecuador	
9	PER	Peru	
10	VEN	República Bolivariana de Venezuela	
11	ARG	Argentina	South American Common Markets (MERCOSUR)
12	BRA	Brazil	
13	PRY	Paraguay	
14	URY	Uruguay	
15	CHL	Chile	Chile.
16	RestoALC	Resto or Latin American	Rest of Latin American and the Caribbean
17	EU_27	Austria; Belgium; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Slovakia; Slovenia; Spain; Sweden; United Kingdom; Bulgaria; Romania	European Union 27
18	CHN	China	China
19	Asia	Hong Kong; Japan; Korea; Taiwan; Rest of East Asia; Cambodia; Indonesia; Lao People's Democratic Rep.; Myanmar; Malaysia; Philippines; Singapore; Thailand; Viet Nam; Rest of Southeast Asia; Bangladesh; India; Pakistan; Sri Lanka; Rest of South Asia.	Rest of Asia
20	EEUU	USA.	United States of America
21	RestofWorld	El resto de países no considerados en las agregaciones anteriores. Incluye países desarrollados de EFTA : Noruega, Suiza, Islandia y Liechtenstein; los países de Europa Oriental no miembros de la Unión Europea, los del Medio Oriente y África	Rest of the World

Source: Aggregation based on 113 countries/regions of the GTAP database (version 7.0).

2.3. Amendment of the GTAP 7.0 database

The main change to the GTAP database was the update to tariff schedules as to capture the regional preferences afforded to Latin American countries (Andean Community, MERCOSUR) under the Central American Free Trade Agreement between Central America and the United States of America. This database also contains information on world trade and production structures for 2004. However, the database does not include the tariff structure for agreements signed between 2004 and 2008.

The altertax algorithm was used to update the database from base year 2004 to 2008, including the following two fundamental aspects: implementation of CAFTA and the intraregional liberalization in Latin America. The changes were introduced as shocks to the 2004 base year to be updated in 2007.

To simulate changes in trade policy that occurred between August 2008 and March 2010, tariff equivalents were calculated for trade measures applied and reported in the Global Trade Alert database. A similar experience is the research conducted by ECLAC, University of the Republic and CINVE, in connection with the project Policy options to mitigate the impacts of international crisis in Latin America: Is there scope for regional policy design? This research was conducted by Resource Network and the MERCOSUR CPB.

2.4.- Closures and Policy Scenarios

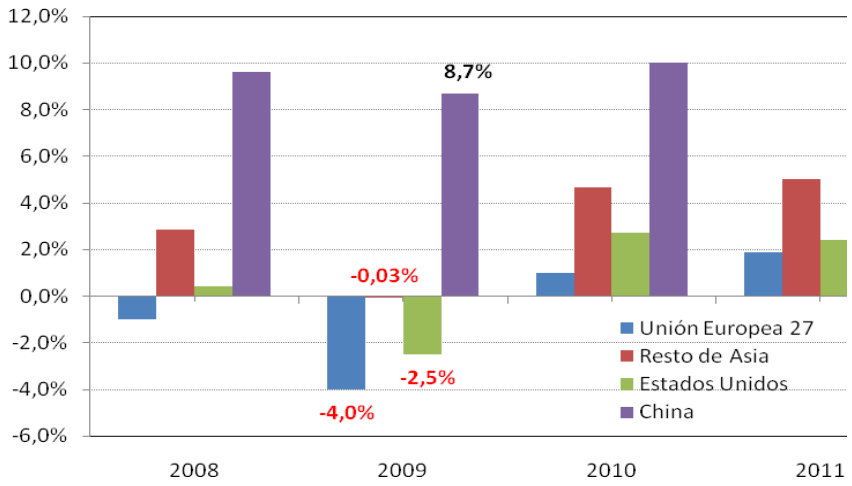
For each of the scenarios presented, there is a specific closure. The first scenario changes tariffs only using the Altertax algorithm,(as described above). From here, and for subsequent exercises, three changes were identified that alter the standard closure of the model in the short-term. The first introduces the unemployment of capital and labor (skilled and unskilled), the second allows the introduction of changes to the volume of gross domestic product in the U.S. European Union, China, and the rest of Asia. Finally, the third closure allows for the variation of capital endowments in the same regions mentioned above.

1) When unemployment in both the capital and skilled labor and unskilled are fixed, a situation of fictional capacity excess is reproduced. This occurs as there is excess production capacity that can be exploited but is not used effectively. This results in a decline in world prices and a fall in consumption. On the other hand, the crisis of 2009 comes at a time of substantial increases in unemployment in both the U.S. and Europe. For this reason, it doesn't seem plausible to use a closure that assumes full employment in the case of labor. Similar assumptions of labor factor unemployment have been developed for the cases of developing economies, such as research conducted by McDonald and Walmsley (2001) for the analysis of the FTA between Botswana and South Africa.
2) When allowing for change in volume of GDP in the most affected regions by the crisis (America, the European Union, China and the Rest of Asia) setting the qgdp[8] variable as exogenous, the direct consumer demand decreases (increases) in these regions in relation to the rest of the world. This is especially important as it introduces the possibility to assess the crisis in the commercial channel. The changes applied to the volume of GDP are assumed to be equal to those indicated by the latest IMF estimates for 2009 (see Figure 1).

[8] GDP quantity index

3) When a negative shock was applied to the capital endowments of the region, the results reproduced a fall in GDP of the selected economies. We found that the consumption of imported goods fell along with prices, recapturing the commercial channel. Similar exercises using this approach can be found in Arguello (2009) and Clark, Rourke and Taylor (2008).

Figure 1
Changes used to shock volume in GDP in the simulations



Source: IMF (2010)

The technical specifications of variables that were exchanged, to enable the resolution of the model and to comply with Walras' law, emptied all markets and are presented in Table 4.

The initial simulations were made under the assumption of competitive allocation of savings (RORDELTA = 1), i.e. assuming a reallocation of global investment into areas where they became more competitive. Alternatively, the trade balance is fixed for the regions of interest (i.e. the countries of Latin America and the Caribbean). Results from simulations with fixed trade balance, are in essence, not very different from those obtained with flexible trade balances. It may be assumed that capital flows moving into Latin American countries could produce an imbalance in the trade balance.

The modifications to the standard closure (detailed above) aim to simulate the international crisis of 2009, not with the definitive goal of replicating the crisis scenario per se, but rather to introduce the crisis as an addition to policy changes adopted by countries of the region. It is assumed that these changes exacerbated the stalemate following the contraction of international demand and resulted in intra-regional trade to collapse in a pro-cyclical form.

Table 3
Technical specifications of closures used in the modelation

Closures used	Main changes on the Standard GTAP Model	Shock descriptions
Closure A	Cierre Estándar ALTER TAX (Aplicación Standard)	Changes in the levels of protection (TMS) to bring 2004 to 2008 levels
Closure B	a) Capital Unemployment qo ("capital", REG) = pfactreal ("capital", REG) b) Labor Unemployment qo ("SklLab", REG) = pfactreal (SklLab ", REG) qo ("UnsklLab", REG) = pfactreal (UnsklLab ", REG) c) GDP growth exogenous qgdp (REG); afereg (REG) d) Competitive allocation of savings (RORDELTA = 1	• Changes in the volume of GDP (qgdp) Singapore (-2.5%), EU-27 (-4.0%); Asia (-0036%) and China (+8.7%) • tariff increases based on the trade policies applied
Closure B*	a) Capital Unemployment qo ("capital", REG) = pfactreal ("capital", REG) b) Labor Unemployment qo ("SklLab", REG) = pfactreal (SklLab ", REG) qo ("UnsklLab", REG) = pfactreal (UnsklLab ", REG) c) GDP growth exogenous qgdp (REG); afereg (REG) d) Allocation of savings according to the composition of the capital stock of each country (RORDELTA = 0)	• Changes in the volume of GDP (qgdp) Singapore (-2.5%), EU-27 (-4.0%); Asia (-0036%) and China (+8.7%) • tariff increases based on the trade policies applied
Closure C	a) Capital Unemployment qo ("capital", REG) = pfactreal ("capital", REG) b) Labor Unemployment qo ("SklLab", REG) = pfactreal (SklLab ", REG) qo ("UnsklLab", REG) = pfactreal (UnsklLab ", REG) c) Capital allocation at the beginning of the period, exogenous. Kb (REG), qo ("capital", REG) d) competitive allocation of savings (RORDELTA = 1)	• Changes in the initial capital stock (Kb) Singapore (-3.0%), EU-27 (-4.0%); Asia (-2) and China (+9.0%)
Closure C*	a) Capital Unemployment qo ("capital", REG) = pfactreal ("capital", REG) b) Labor Unemployment	Changes in the initial capital stock (Kb)

	qo ("SklLab", REG) = pfactreal (SklLab ", REG) qo ("UnsklLab", REG) = pfactreal (UnsklLab ", REG) c) Capital allocation at the beginning of the period, exogenous. Kb (REG), qo ("capital", REG) d) Allocation of savings according to the composition of the capital stock of each country (RORDELTA = 0)	Singapore (-3.0%), EU-27 (-4.0%); Asia (-2) and China (+9.0%)

Source: Author's own elaboration

To test this hypothesis, we simulated the crisis with a set of separate scenarios that reproduce the bulk of trade policy changes in 2009. The changes produced by tariff barriers were quantified and introduced as policy shocks. Subsequently, other scenarios were simulated to give an idea of the possible alternatives to the widespread policy changes and focused on extra-regional trade; maintaining intraregional preferences or deepening intra-regional trade liberalization. Next, we simulate two extreme scenarios: a scenario of global product recovery of intraregional trade liberalization, and another that increases the maximum bound tariffs in the WTO, seeking to illustrate not only a trade war between the countries of Latin America, but all countries. This was done in order to obtain an idea of worst-case scenario that could confront the region if the Doha Round fails to conclude. The specifications of each scenario are presented in Table 5

Table 4
Different scenarios used in the exercises

Modeled Scenarios	Changes applied over the baseline
Base model	Changes over the GTAP 7.0 base
ESC-01	Policy measures applied between august 2008 and february 2010.
ESC-02	Consider the retaliation. If a country receives a tariff hike, reacts by increasing proportionally its tariff applied to the partner. If the base level is zero, assumes a proportional increase equal to that charged to other partners in the region. In no case, the retaliatory tariff increases, exceed the maximum level applied by the country which first increased its protection.
ESC-03	Consider only the tariff increases resulting from the policies to third regions and / or countries outside of the region, this is America, the European Union, China, Rest of Asia, and Rest of World
ESC-04	Countries adopt commercial policy measures and and full liberalization of intra-regional trade for all countries and LAC regions is assumed. (In a crisis environment).
ESC-05	Countries adopt commercial policy measures and and full liberalization of intra-regional trade for all countries and LAC regions is assumed. (In a non-crisis environment).
ESC-06	Trade war scenario with every country in the world raising its tariffs at the higher bound level in the WTO. The WTO tariff profiles are used as reference, whereas increases in both agricultural products and in the non-agricultural (NAMA). (In a non-crisis context).

Source: Author's own elaboration

3 Crisis measures

a) World trade barriers

Between August 2008 and March 2010, approximately 726 international trade restrictive measures of various kinds were registered globally, which directly affect business interests in various countries. Of this total, the countries of Latin America and the Caribbean applied approximately 16% of the total barriers erected.

The largest number of trade measures recorded at the regional level were Asia and the European Union, with 156 and 146 measures respectively. The United States accounted for 7.5% of the 55 measures.

Another country that deserves mention regarding implementation of trade measures within the Rest of World category is Russia. As Russia is not a member of the WTO, it has more scope for tariff increases and has no binding tariff commitments to limit protectionist measures. In total, Russia applied 55 measures, which accounts for 22% of the overall measures of the group worldwide. With this number of measures, Russia places second among the most protectionist countries, depending on the category type of measures implemented (see Evennet, 2010).

Of the 118 recorded measures in Latin America and the Caribbean, only 66 have been effectively applied. This figure is considerably less than the total red type[9] measures implemented by the European Union, which amounts to 127 and leads the ranking of countries or groups with the most restrictive measures. The EU virtually doubled the number of red measures of those implemented by the LAC region (see Table 5).

Table 5
Summary of the red and amber measures implemented in the world between November of 2008 and the 30 of March of 2010.

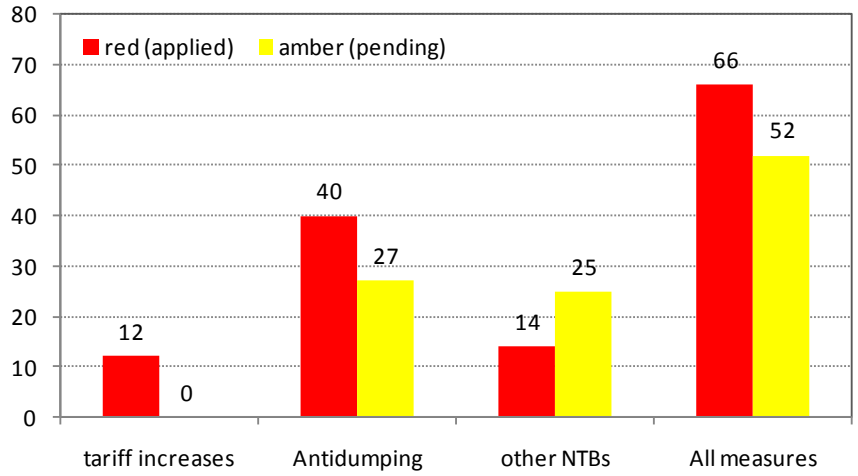
Regions	Red (A)	Share of total (%)	Ambar (B)	Share of total (%)	Total (C= A+B)	Share of total (%)	Share of application (D = A/C)
Latin American and the Caribbean	66	14,8	52	18,3	118	16,2	55,9
European Union 27	127	28,5	19	6,7	146	20,0	86,9
United States	10	2,2	45	15,8	55	7,5	18,2
Asia	85	19,1	71	25,0	156	21,4	54,5
China	17	3,8	13	4,6	30	4,1	56,7
Rest of Asia	68	15,4	58	20,4	126	17,3	53,9
Rest of the World	157	35,5	97	34,2	254	34,8	61,2
Total World	**445**	**100,0**	**283**	**100,0**	**729**	**100,0**	**61,0**

Source: Author's own elaboration based on Global Trade Alert (GTA) and other official sources.

[9] According to Global Trade Alert, there are i) **red measures**: has been implemented and *almost certainly* discriminates against foreign commercial interests ii) **amber measures:** has been implemented and may involve discrimination against foreign commercial interests; OR The measure has been announced or is under consideration and would (if implemented) almost certainly involve discrimination against foreign commercial interests.

Figure 2 presents the spreads between measures taken and applied for various kinds for the countries of the region. Note that the bulk is concentrated in antidumping measures, which represented over 50% of both applied and pending measures. The measures involving tariff increases were significantly lower and were limited to only 5 countries.

Figure 2
Latin America and the Caribbean, August 2008 to March of 2009: Total red and amber trade policy measures
(In number of accumulated measures to March of 2010)



Source: Author's own elaboration based on Global Trade Alert (GTA) and other official sources.

In summary, trade restrictive measures exceeded one hundred in number while those that were trade promoting totaled only 19. This trend is similar to that observed globally as seen in Table 6. The larger economies (Argentina, Brazil and Mexico) have been most active in the use of such measures, with approximately 80% of the total. In terms of total impact on imports, Ecuador, Venezuela and Argentina were the most active countries in implementing trade restrictive measures (see Table 6).

Regarding the type of measures applied by the five countries, those related to tariff increases totaled 3.7%. The total tariff lines and their impact on total imports for the same group of countries did not exceed 5%. As a proportion of total regional imports, the amount of trade affected and subject to tariff increases is barely 2.6% and less than 1% in the total combined lines according to 4-digit Harmonized Tariff Schedule. This figure is consistent with estimates of the impact of tariff increases in the global economy; they did not exceed 1% of total merchandise trade (WTO, OECD and UNCTAD, 2010).

During the review period, the non-tariff measures dominated as only 12 of 52 measures were tariff increasing under the 5 selected countries of the region.

Table 6

Mapping of the set of trade policy restrictive measures applied by the countries between November of 2008 and the 30 of March of 2010

	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Mexico	Paraguay	Peru	Venezuela	No. of Countries
Tariff increasing		X	X			X	X	X			5
Antidumping	X		X	X					X		4
Licenses	X										1
Prices of reference	X							X			2
Fiscal Discrimination	X										1
Safeguards						X					1
Quotes						X					1
Exchange control										X	1
Antidumping investigations	X			X	X						3
Total applied measures	5	1	2	1	1	3	1	2	1	1	**9**
Share in total imports by country	***15***	***1***	***6***	***0***	***0***	***40***	***6***	***2***	***0***	***52***	

Source: Author's own elaboration based on Global Trade Alert (GTA) and other official sources.

The bulk of the measures were concentrated in the manufacturing sectors, especially light and heavy manufacturing. In terms of specific products, the barriers were highest in textiles, garments, chemicals, metals, metal products, and other miscellaneous manufacturing. The cases of far-reaching measures include the exchange safeguard imposed by Ecuador, the licenses and minimum prices applied by Argentina and exchange rate controls imposed by the Bolivarian Republic of Venezuela, as seen in Table 7.

Table 7

Latin America and the Caribbean: Mapping of measures by type and sectoral proportion in the total HS lines with a NTBs

(In percentage of the total HS lines by type of measurement)

Sectors / Type of measures	Agriculture and Farming	Mining and extraction	Light manufactures	Heavy manufactures	Total
Tariff increasing	1%	1%	75%	22%	100%
Antidumping	0%	0%	46%	54%	100%
Licenses	0%	0%	0%	100%	100%
Minimum (reference) prices	0%	1%	29%	69%	100%
Fiscal Discrimination	0%	5%	20%	75%	100%
Safeguards	21%	0%	47%	32%	100%
Quotes	5%	0%	29%	66%	100%
Exchange rate controls	1%	2%	28%	69%	100%
In total HS lines	6%	1%	40%	53%	100%

Source: Author's own elaboration based on Global Trade Alert (GTA) and other official sources.

3.1 Non-tariff barriers

3.1.1 Argentina

In the case of Argentina, only non-tariff barriers were implemented and included fiscal discrimination, licenses and reference prices. The effects of these measures can be seen in the high and medium technology sectors of Venezuela, among which are textiles (53%), machinery equipment (45%) and auto parts (25%), other manufactures (23%), metal products (22%) and those of leather and footwear (20%).

In Latin America, the effects of these measures tend to vary. Those most notable are the machinery and equipment sectors amounting to 72% of imports as compared to leather products and footwear, whose incidence is zero for imports from other countries in the region. Annex 4 presents the incidence rates for different regions of the world for the measures implemented by Argentina.

The barriers imposed by Argentina affect not only Latin America, but the rest of the world as well. The exports from Asia to Argentina see a 20% reduction while those from the EU are reduced by 15%. Considering other world regions, it is noted that Asia is as affected as Latin America by the barriers imposed by Argentina (around 20%), while the 15% of EU exports to this country is subject to measures.

3.1.2 Ecuador

The measures implemented by Ecuador consist mainly of non-tariff barriers, including quotas and safeguards. These NTBs affect a broad spectrum of product categories including rice (89%), auto parts (85%), fruit and vegetables (58%), other foods (58%), beverages and tobacco (70%) and transport equipment (66%). These measures affect Ecuadorian imports from the rest of the world by more than 50%.

Considering the importations from Latin America, the most affected products are apparel (40% over the world average), dairy (a 39% increase, relative to world average) and machinery and equipment (25% over world average). Here we must highlight the fact that 19 out of 32 sectors are more affected in the case of Latin America, relative to the incidence over the world average. See annex 5 for further details on these measures.

In regards to tariff barriers, it was found that the greatest distortions were applied to clothing (94%), leather and footwear (78%) and machinery and equipment (54%). Trade distortions were also seen on mineral products (34%), beverages and tobacco (26%) and other foods (25%). The results were not much different at the Latin American level as the proportions affected were kept at similar levels. The exception is within other manufactures and machinery and equipment, with a 13% and a 11% decline.

Asia appears to be the most affected region by the measures taken by Ecuador, reducing imports by 61%. China is sees a decline of 52% and Latin America experiences a 40% reduction of imports to Ecuador.

3.1.3 Venezuela

Venezuela implemented exchange rate controls, a form of NTB, that had a considerable effect on international trade. A review of the economic sectors demonstrates that high and medium technology are the most affected by the controls. The resulting effects were textiles (69%), machinery and equipment (81%), as well as primary sectors such as forestry (63%), extraction of energy (51%) and vegetable fibers (45%)..

Exchange rate controls have differing effects between Latin America and the rest of the world. In this case, the main variations occur in petroleum products, which are affected by 28% (globally is 68%). Similarly, beverages and tobacco falls only 1% in the case of Latin America and 34% for imports globally. There are a few increases in imported goods from other nations in the region. These are fisheries, energy extraction and other foods with a maximum variation of 3%. Annex 6 shows the share of imports affected by nontariff barriers.

At world and sub-regional schemes level, measures implemented during the crisis affected 87% of all economic sectors and imports from Asia, while reaching 85% in the case of China. In the case of the United States, 68% of the value of their exports were subjected to non-tariff barriers when entering Ecuador. Similarly, when considering tariff increases, the affected trading partners were Asia, China and the European Union.

3.2 A tariff proxy of the NTB (Methodology)

To evaluate the change in a country's trade policies, it was necessary to convert NTBs into ad-valorem equivalents. This was done by observing changes in volume and price levels according to the Harmonized Tariff Schedule. The second methodology was used for exchange rate controls of the Bolivarian Republic of Venezuela. Further details of both methods are as follows.

a) ***Changes in observed volume and price methodology***

The proposed methodology is based on that the bulk of the rise in "observed" prices in imports was due to non-tariff barriers. Their calculation is derived entirely from bilateral trade data from the countries of the region, specifically the values and volumes of imports reported by official agencies to the ALADI Secretariat. In the case of countries for which no information was available for imports, mirror statistics were applied[10] using the ALADI database. This information was available for most of the countries in the region, including bilateral trade and price changes in global markets (United States, China and the European Union).

For the calculation of non-tariff barriers at the bilateral level, we proceeded to determine the change experienced by the trade volumes between the first half of 2008 and the same period in 2009 according to the Harmonized Tariff Schedule. For the purpose of deriving the changes in prices attributable to non-tariff barriers of various types, we calculated indices of volume and value at 200 as a base year. From these indices, and based on the property of circularity of trade indices, we proceeded to calculate the price change at item level. This was applied to each category in the 32 product groups listed in Table 2.

This is given by the following formulae:

[10] As example, when there is no data on Ecuadorian imports , the export from other countries to Ecuador is used as a proxy

For quantity indices derivation:

$$IQM^{k}_{ij2008} = \mathrm{QM}^{k}_{\mathrm{ij2008}}/\mathrm{QM}^{k}_{\mathrm{ij2008}} \qquad (1)$$

$$IQM^{k}_{ij2009} = \mathrm{QM}^{k}_{\mathrm{ij2009}}/\mathrm{QM}^{k}_{\mathrm{ij2008}} \qquad (2)$$

For the derivation of volume indices:

$$IVM^{k}_{ij2008} = \mathrm{VM}^{k}_{\mathrm{ij2008}}/\mathrm{VM}^{k}_{\mathrm{ij2008}} \qquad (3)$$

$$IVM^{k}_{ij2009} = \mathrm{VM}^{k}_{\mathrm{ij2009}}/\mathrm{VM}^{k}_{\mathrm{ij2008}} \qquad (4)$$

Where QM is equal to the imported volume by country i from j, in the k product; IQM notation is equivalent to the imported volume Index, the year of reference and IVM, the import value index.

Note that the value of 2008 indices, by construction, is equal to 100.

Hence it is that dividing the index value for the quantity index, we obtain the price of imports index at item level.

$$IPM^{k}_{ij2008} = I\mathrm{VM}^{k}_{\mathrm{ij2008}}/\mathrm{IQM}^{k}_{\mathrm{ij2008}} \qquad (5)$$

$$IPM^{k}_{ij2009} = I\mathrm{VM}^{k}_{\mathrm{ij2009}}/\mathrm{IQM}^{k}_{\mathrm{ij2009}} \qquad (6)$$

Then, the change between 2009 and 2008 is obtained directly as follows:

$$\Delta PM^{k}_{ij} = ((IPM^{k}_{ij2009}/IPM^{k}_{ij2008})\text{-}1)*100 \qquad (7)$$

Then, for each item with a change in price, during the crisis period, we proceeded to verify if there was a non-tariff barrier. If this was the case a number one was assigned to the item. Additionally, only positive changes in price were filtered (cases in which the measures were constraining the trade). From this information the estimated tariff equivalent of the NTBs is calculated as follows:

$$Si \begin{cases} \Delta PM^{k}_{ij} > 0 \,;\, y\ k \in (GTA = 1) \cdots \quad EAV \equiv \quad tms^{k}_{ij2009} = tms^{k}_{ij2008} * \left(1 + \ \Delta PM^{k}_{ij}\right) \\ \Delta PM^{k}_{ij} = 0; \quad y\ k \in (GTA = 1) \cdots EAV \quad non\ observable \\ \Delta PM^{k}_{ij} < 0; \quad y\ k \in (GTA = 1) \cdots EAV \quad non\ observable \end{cases}$$

Note that the values for the ad valorem estimated amounts in this form take into account the assumption that price changes are due to non-tariff restrictions on imports at a heading level. There may be other factors affecting prices (such as price deflation caused by the crisis) in which case, the calculated deltas are negative. In the case of non-tariff barriers, the derivation of its tariff equivalent or proportional increase is impossible by the method proposed here.

For the derivation of EAV, the literature usually recommends the collection of free on board prices (FOB) and domestic prices for imported products at the point of final sale. The spread between the two values is exactly the proportion of the imputed tariff increase. In the same way as defined by Baldwin (1975), Deardorff and Stern (1981, 1985) and other similar works from Roningen & Yeats (1976), we use the approach of an estimated benchmark of domestic price. Mathematically:

$$TI = 100 * \frac{(pd_i^k - pm_{ij}^k)}{pm_{ij}^k}$$

Where pd is equal to domestic sales price of product k in country i; pm is the price of imported product k in country i imported from j, and Implicit Rate or equivalent tariff is denoted by TI.

Is interesting to note that, in a year of international crisis, the trend in world prices is downwards, due to turbulences and uncertainty, especially in the commodities market. For this reason, the increases in prices, is objectively a clear consequence of the existence of a non tariff barrier in the bilateral trade of two countries.

b) Calculation of EAV for the case of the exchange rate control in the B.R. of Venezuela

In order to generate and ad-valorem tariff equivalents for Venezuela, the 2009 exchange rate was used as a reference as compared to parallel market exchange rate to measure the distortion in trade. Formally:

$$\theta_t = \left[\left({}^{e_t}/_{e*_t}\right) - 1\right]$$

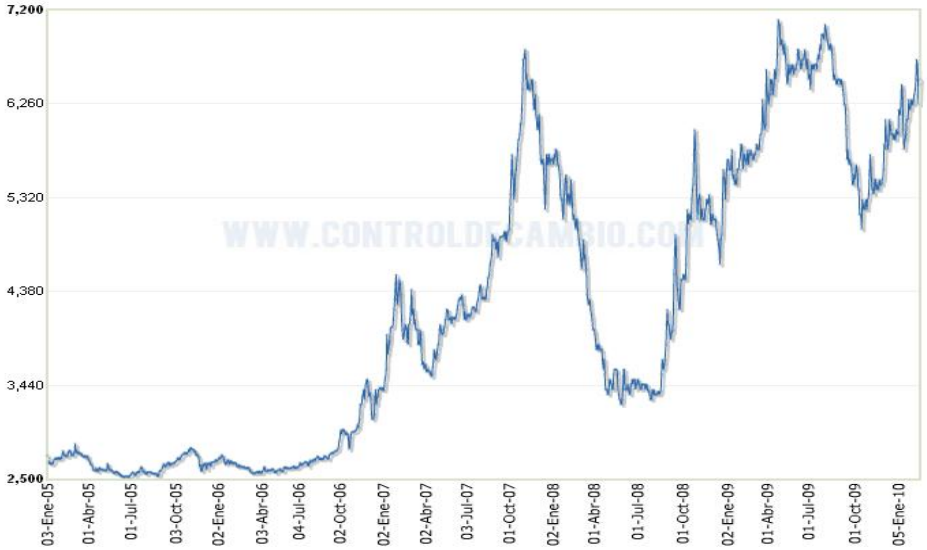
This differential was applied to the base fee and later added to the sets of products defined in the model although some exceptions were considered at the level of products and trading partners.

However, there are some exceptions for priority products for the population (medicines and basic foodstuff) that has better access to foreign exchange by the Foreign Exchange Administration Commission of the Bolivarian Republic of Venezuela. For these items, no distortion was assumed; furthermore, the 2008 and 2009 estimated rate remains the same. The B.R. of Venezuela used the Convention ALADI Reciprocal Payments to pay for its imports and the proportion of foreign currency by CADIVI settled in 2009 was also considered. The figures for imports of ALADI countries, accounted for 22% of the total. To capture this fact, it was assumed that the amount of distortion calculated for the case of ALADI countries was 25%. The same treatment was given to bilateral trade with member countries of the Bolivarian Alliance for the Peoples of Our America - in spanish: Alternativa Boliviana para las Americas (ALBA).
Formalization of the calculation is as follows:

$$Si \begin{cases} k \in (GTA = 1) \text{ and partner is non LAIA member } \quad EAV \equiv tms_{ij2009}^k = tms_{ij2008}^k * \left(1 + \theta_{ij}^k\right) \\ k \in (GTA = 1) \text{ and partner is a LAIA member } \quad EAV \equiv tms_{ij2009}^k = tms_{ij2008}^k * \left(1 + \theta_{ij}^k * 0.25\right) \\ k \in (GTA = 0) \quad EAV \equiv \quad tms_{ij2009}^k = tms_{ij2008}^k \end{cases}$$

Where k correspond to a particular i product, and j to the trading partner.

Figure 3
Informal Bolivar exchange rate unofficial market
(January 2005 to February of 2010)



Source: Author's own elaboration based on http://www.controldecambio.com/dolar-paralelo-interactivo/

Table 8
Reference value to calculate EAV for the case of Venezuela

Cotizaciones promedio, y brecha	**2008**	**2009**
Oficial exchange rate (Central Bank of the R. B. of Venezuela)	2,15	2,15
Informal Bolivar exchange rate, unofficial market[a]	4,28	6,03
Spread (in percentage) EAV proxy	**99%**	**180%**
EAV for LAIA partners (25% of the gap)		**45%**

Source: Author's own elaboration based on http://www.controldecambio.com/dolar-paralelo-interactivo/ and the Central Bank of the Bolivarian Republic of Venezuela. See also http://venezuelafx.blogspot.com
[a] Average between the purchase and the sale, calculated on the base of daily information.

c) Aggregation of calculated tariffs, modified at product level of the CGE model

The results of EAV according to the 4-digit Harmonized System in both of the proposed cases were aggregated and mapped for the 32 products in the model. The final result for the tariff barriers applied was the result of a weighted average calculated as follows:

$$tms_{ij}^{PM} = \sum_{PM=1}^{n} tms^{k}_{ij} * p^{k}_{ij}$$

Where PM indicates the grouping of products in the categories defined in Table 2 of this study;

tms ', is the new tariff increased by the corresponding EAV, calculated as the result of price changes observed for those products that policy measures were implemented in 2009. For cases

with no changes, the value of tms' was set at the previous value of the measures.

p is the percentage of product k, four-digit HS 2007, as a proportion of total imports (MT) for the whole group of products defined in Table 2. This is given by the following formula:

$$p_{ij}^{k} = \frac{m_{ij}^{k}}{MT}$$

i defines country that apply the tariff and j, the country of origin for imports subject to NTB measures.

3.2.2 Incorporation in the model

Non-tariff barriers are incorporated into the model by calculating a new tariff rate equivalent. This procedure uses the methodology presented above. Table 9 presents the tariff changes due to the implementation of measures in the simulated scenarios. Argentina, Ecuador and the Republic Bolivarian of Venezuela are the countries that experienced the greatest increases in average tariffs between the base year and the policy scenario 1 (see Table 9).

In order for simulations to be more accurate, changes to the tariff reductions in Mexico and Brazil were also included. This was done as both countries are of great importance and it is meant to capture the intraregional trade stimulus during the crisis period.

Table 9
Latin America and the Caribbean: Tariffs of the baseline for the simulated exercises, and changes used according to consolidated shock for the total imports.

Países	Baseline 2008 tariffs	ESC-01 Trade policy measures 2009	ESC-02 Retaliation scenery	ESC-03 Trade policy measures only for non-LAC partners	ESC-04 y ESC-05 (ESC-03 plus free intra-regional trade ("0%))	ESC-06 Tariff increases up to maximum bound tariff in WTO
Costa Rica	2,7	2,7	2,7	2,7	1,5	39,0
Guatemala	3,9	3,9	3,9	3,9	2,6	39,3
Nicaragua	2,8	2,8	2,8	2,8	1,7	38,2
Panama	6,7	6,7	6,7	6,7	6,7	17,2
Mexico	3,0	2,3	3,2	2,4	2,1	32,6
Bolivia	3,6	5,0	5,0	4,1	2,9	32,8
Colombia	8,1	8,1	8,3	8,3	7,1	36,9
Ecuador	6,0	10,1	10,1	6,9	5,4	18,7
Peru	5,9	5,9	6,0	6,3	4,6	25,6
Venezuela	8,8	18,1	18,3	17,8	15,7	31,6
Argentina	4,9	5,1	6,7	5,0	4,7	25,7
Brazil	6,6	7,0	7,2	6,7	6,5	25,4
Paraguay	5,5	5,5	6,2	5,5	5,0	31,5
Uruguay	3,8	3,8	3,9	3,8	3,5	27,4
Chile	1,6	1,6	2,1	1,6	1,4	20,6
Rest of Latin America	9,1	9,1	9,1	9,1	7,7	30,1
Latin America an the Caribbean	**5,2**	**5,5**	**6,0**	**5,4**	**4,7**	**29,7**

Source: Author's own elaboration based on changes of trade policy during 2009, and assumptions in different scenarios described in table 4

4 Result of Simulation and analysis

4.1 Macroeconomic effects

Results regarding key macroeconomic variables are presented below and include some lessons learned and policy recommendations on the basis of the proposed modeling. Discussion includes GDP, foreign trade, wages of skilled and unskilled labor, and welfare changes for the entire region as well as on individual country basis.

It should be emphasized that the changes in volume of GDP, and changes in capital stock in the United States, European Union, Asia and China are exogenous in the model. All other modifications follow the general equilibrium and macroeconomic variables (consumption, exports, imports, investment, government spending, and changes in prices). Changes in household welfare are also endogenous within the simulated exercises.

When only crisis scenarios are simulated, changes in regional GDP show a reduction of -05% and -0.8% assuming the fall in the volume of GDP in the United States, the European Union and Asia (Closures B and B *), as well as when capital endowments are reduced (Closure C and C *). Although these values differ with the percentage estimated by some international agencies for the region (between 1.7% and 1.9%), they exhibit the same direction and capture the decline in prices due to a excess capacity. The observed decline in output in the United States and the European Union are similar to the IMF projections for 2009 (see table 10).

Table 10
GDP changes by region, from modeling of the crisis with GTAP, using different types of closures
(Changes with respect to the baseline = 2008)

	Closure B	Closure B*	Closure C	Closure C*
Latin American and the Caribbean	-0,5	-0,7	-0,5	-0,8
European Union 27	-2,2	-2,0	-2,7	-2,6
United States	-3,6	-3,4	-3,8	-3,7
Asia	1,1	0,8	0,0	-0,3
China	6,6	5,3	8,7	7,4
Rest of Asia	-0,1	-0,2	-2,0	-2,0
Rest of the World	-0,9	-0,9	-1,1	-1,2
World	**-1,6**	**-1,6**	**-2,1**	**-2,1**

Source: Author's own elaboration based on GTAP simulations

The magnitudes of the changes in capital endowments using the various proposed closures have the same direction, magnitudes and are quite close (albeit somewhat higher) than the case of simulations using the closure that uses exogenous changes. For this reason, we proceeded to average the results of the macroeconomic impacts obtained with the two types of closures in the model for similar scenarios. This decision was taken for reasons of space and on the grounds that the main focus of work is the illustration of the crisis effects on the trade channel for policy recommendations. All results will be available on the website of the Mercosur Network in electronic format.

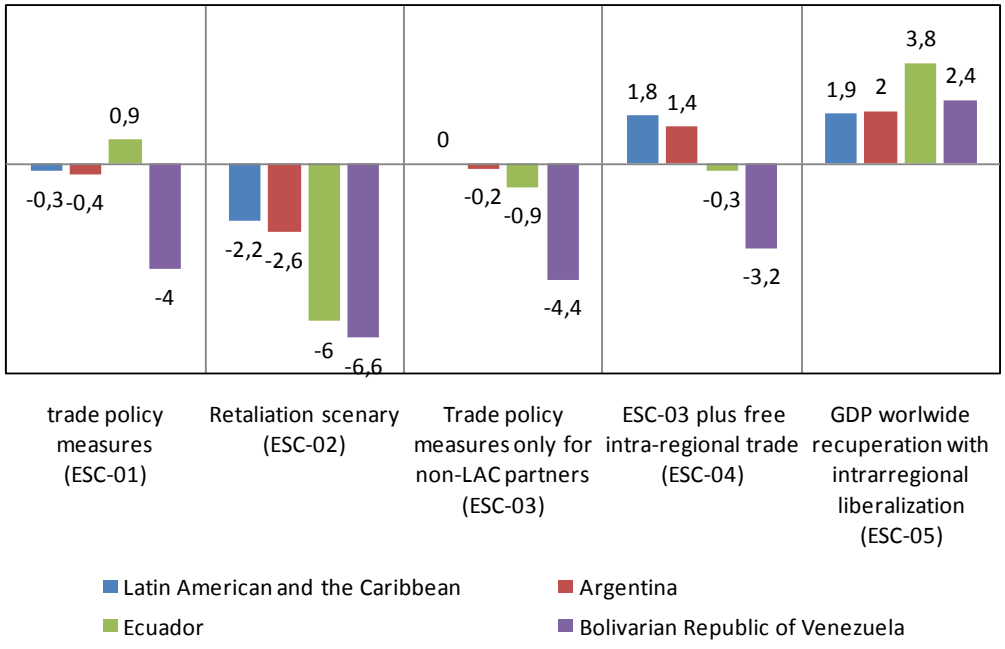
As previously indicated, border protection measures result in a decrease in the volume of product traded (ie increases tariff and non tariff barriers) (see Table 11). However, these changes are small in scenario 1 and increases when countries decide to retaliate by increasing levels of protection (scenario 2).

As aggregates of GDP, reductions are greater in the foreign trade variables. This is in response to shrinking international demand that directly affected the prices of products exported by the region in 2009, as well as a reduction in regional imports.

When we include full liberalization of intraregional trade in scenario 4, it restores the growth of trade, amounting to 2% in the case of Latin America and Caribbean exports and 2.6% for imports. Similar results were produced in scenario 5 that considered worldwide GDP recuperation, including that of the USA and European Union.

The cases of Argentina, Ecuador and Venezuela exhibit the same trends with better prospect in the case of liberalization scenarios (stage 4 and 5). Venezuela and Ecuador show a more favorable GDP and trade profile under the recuperation scenario with free intraregional trade (see figure 4)

Figure 4
Changes in GDP under different sceneries: Argentina, Ecuador, Bolivarian Republic of Venezuela and Latin American and the Caribbean
(Changes with respect to the baseline = 2008)



Source: Author's own elaboration based on GTAP simulations

Table 11
Latin America and the Caribbean: Impacts of the international crisis under different simulated trade policy scenarios
(Changes with respect to the baseline = 2008)

A. - LATIN AMERICA AND THE CARIBBEAN

	Consumption	Investment	Government Spending	Exports	Imports	GDP
ESC-01	-0,3	-0,1	-0,4	-0,9	-0,7	-0,3
ESC-02	-2,1	-2,0	-2,4	-3,3	-3,3	-2,2
ESC-03	0,0	0,3	0,0	-0,5	-0,3	0,0
ESC-04	1,8	2,3	1,9	2,0	2,6	1,8
ESC-05	2,0	1,9	1,8	2,7	3,1	1,9

B. - ARGENTINA

	Consumption	Investment	Government Spending	Exports	Imports	GDP
ESC-01	-0,5	-0,4	-0,5	-1,9	-2,8	-0,4
ESC-02	-2,6	-3,4	-2,7	-4,5	-6,5	-2,6
ESC-03	-0,2	0,1	-0,2	-0,3	-0,1	-0,2
ESC-04	1,4	1,7	1,4	1,7	2,2	1,4
ESC-05	2,0	1,9	2,1	2,0	2,2	2,0

C. - ECUADOR

	Consumption	Investment	Government Spending	Exports	Imports	GDP
ESC-01	1,0	1,0	0,9	-5,7	-6,2	0,9
ESC-02	-6,1	-5,5	-6,3	-13,4	-14,3	-6,0
ESC-03	-0,9	-0,5	-0,9	-1,5	-1,5	-0,9
ESC-04	-0,3	0,2	-0,3	0,2	0,5	-0,3
ESC-05	3,9	3,6	4,0	4,2	4,3	3,8

D. - BOLIVARIAN REPUBLIC OF VENEZUELA

	Consumption	Investment	Government Spending	Exports	Imports	GDP
ESC-01	-4,1	-2,6	-4,4	-6,7	-7,9	-4,0
ESC-02	-6,8	-7,7	-7,1	-7,9	-10,8	-6,6
ESC-03	-4,5	-5,3	-4,7	-5,6	-8,1	-4,4
ESC-04	-3,4	-3,8	-3,5	-3,9	-5,7	-3,2
ESC-05	2,4	0,8	2,4	1,0	-1,7	2,4

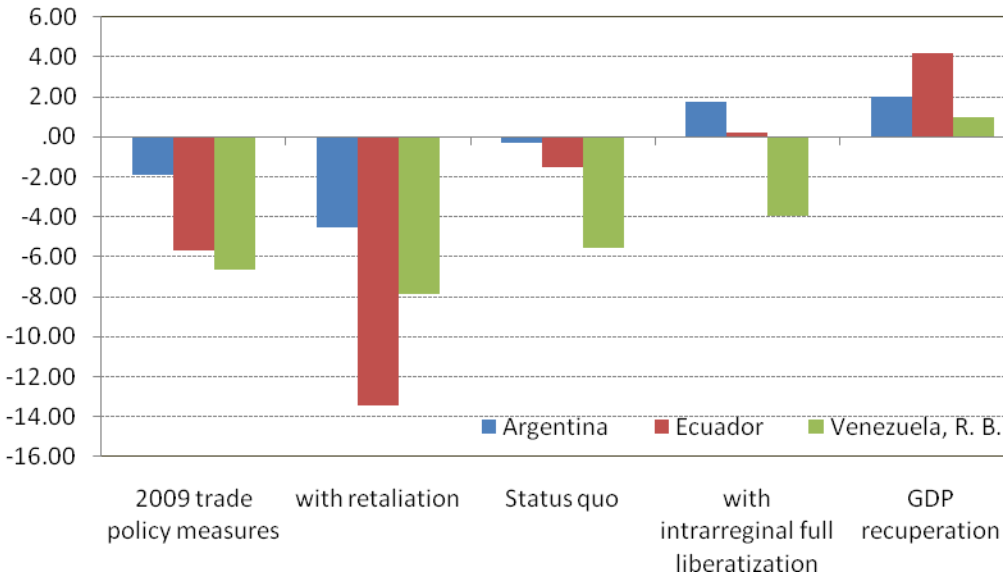
Source: Author's own elaboration based on GTAP simulations

4.2 Implications for International Trade

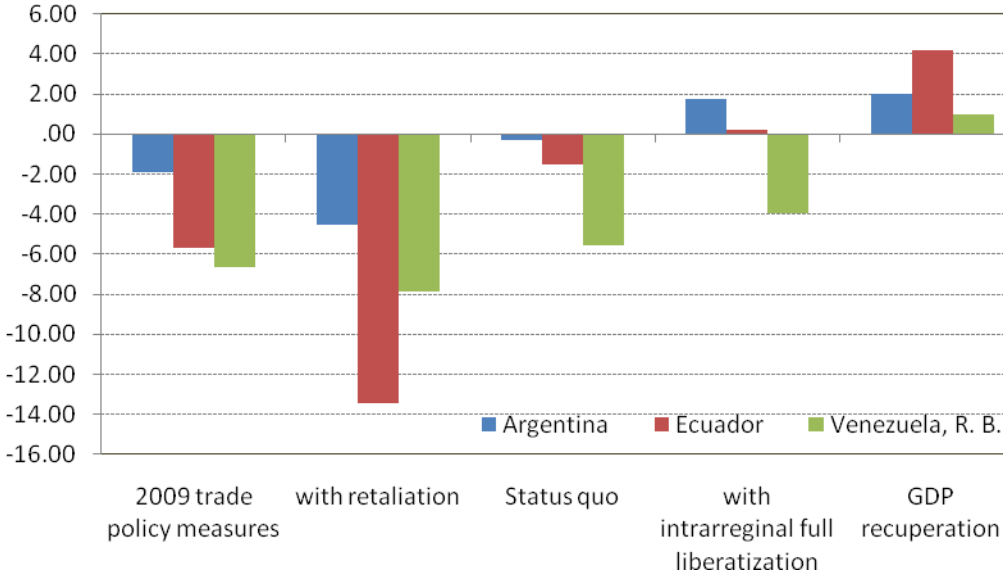
Exports of goods under the various scenarios saw reductions with respect to the base year. The implementation of trade policies by countries in 2009 under Scenario 1 saw a reduction of exports and imports and goods and services between 1% and 6%. These percentages increase when all

countries in the region retaliate with further tariff increases to their trading partners. At this stage (ESC-02), the fall in exports almost doubled in the case of Argentina and Ecuador with changes of -4% and -13%. Venezuela also saw a reduction in its exports by 8%. It is interesting to note that the application of trade measures on imports from outside of the region, diminishes the severity of the crisis (Scenario 1). The fall in trade volume is slightly more when trade liberalization and tariff elimination including intraregional trade restrictions. Finally, a recovery scenario that includes the liberalization of intraregional trade of the three countries results in the recommencement of growth in foreign trade (see Figure 5).

Figure 5
Changes in total exports in Argentina, Ecuador and Venezuela, R.B.



(Cambios sobre el escenario de base)



Source: Author's own elaboration based on GTAP simulations

Regionally, the main reductions in trade are a result of retaliation. Adverse impacts are minimized when intra-regional trade liberalization is enabled, especially in the case of light and heavy manufacturing. The worst case scenario simulates tariff increases equivalent to bound tariff rates at the WTO and results in trade reductions outside the region. When returning to economic growth in the U.S. and the European Union, exports of goods recovered. Similar results occur for intraregional trade.

Table 12
Latin America and the Caribbean: Exports and Imports total changes
(Changes with respect to the baseline = 2008)

	ESC-01 Trade policy measures 2009	ESC-02 Retaliation scenario	ESC-03 Trade policy measures only for non-LAC partners	ESC-04 (ESC-03 plus free intra-regional trade ("0%))	ESC-05 Trade policy measures plus free intra-regional trade ("0%)) with international recuperation	ESC-06 No Doha Scenario
A.- TOTAL EXPORTS						
Goods	**-0,9**	**-3,8**	**-0,5**	**2,3**	**3,1**	**-22,6**
Agriculture and Farming	-1,5	-3,9	-1,5	-1,4	3,4	9,0
Mining and extraction	-2,7	-3,1	-2,7	-2,3	7,8	-10,0
Light manufactures	-1,0	-3,7	-0,6	2,5	1,7	-16,4
Heavy manufactures	-0,2	-4,0	0,4	4,3	2,2	-34,0
Services	**-0,8**	**-0,5**	**-0,6**	**0,1**	**-0,3**	**-21,0**
Total exports	**-0,9**	**-3,4**	**-0,5**	**2,1**	**2,7**	**-22,4**
B.- TOTAL IMPORTS						
Goods	**-0,7**	**-3,4**	**-0,2**	**2,7**	**3,1**	**-38,0**
Agriculture and Farming	-0,6	-3,5	-0,3	2,8	3,5	-41,8
Mining and extraction	-1,0	-7,3	-0,4	5,1	6,7	-55,0
Light manufactures	-1,0	-4,2	-0,4	3,2	3,7	-38,8
Heavy manufactures	-0,6	-2,9	-0,2	2,4	2,7	-36,4
Services	**-0,6**	**-2,5**	**-0,4**	**1,6**	**3,2**	**-55,4**
Total imports	**-0,7**	**-3,3**	**-0,3**	**2,5**	**3,1**	**-40,4**

Source: Author's own elaboration based on GTAP simulations

Table 13
Latin America and the Caribbean: Exports and Imports intraregional trade total changes under different scenarios
(Changes with respect to the baseline = 2008)

	ESC-01 Trade policy measures 2009	ESC-02 Retaliation scenario	ESC-03 Trade policy measures only for non-LAC partners	ESC-04 (ESC-03 plus free intra-regional trade ("0%))	ESC-05 Trade policy measures plus free intra-regional trade ("0%)) with international recuperation	ESC-06 No Doha Scenario
A.- INTRARREGIONAL EXPORTS						
Goods	**-0,9**	**-3,7**	**-0,4**	**2,4**	**3,0**	**-27,2**
Agriculture and Farming	-0,9	-3,6	-1,2	-1,2	3,5	-9,2
Mining and extraction	-1,7	-2,5	-2,1	-1,8	7,9	-15,3
Light manufactures	-0,9	-3,6	-0,6	2,6	1,7	-21,8
Heavy manufactures	-0,7	-4,2	0,3	4,2	1,8	-35,9
Services	-0,4	-0,6	-0,7	0,0	-0,4	-21,0
Total exports	**-0,9**	**-3,4**	**-0,5**	**2,1**	**2,6**	**-26,5**
B.- INTRARREGIONAL IMPORTS						
Goods	**-0,8**	**-3,7**	**-0,4**	**2,4**	**2,9**	**-27,0**
Agriculture and Farming	-1,1	-3,7	-1,0	-1,1	3,2	-9,1
Mining and extraction	-2,0	-2,4	-2,0	-1,8	7,6	-15,2
Light manufactures	-0,9	-3,6	-0,6	2,7	1,6	-22,0
Heavy manufactures	-0,4	-4,2	0,3	4,2	1,8	-36,2
Services	-0,8	-0,6	-0,7	0,0	-0,4	-21,0
Total imports	**-0,8**	**-3,4**	**-0,4**	**2,1**	**2,5**	**-26,4**

Source: Author's own elaboration based on GTAP simulations

Effects on intraregional trade

The simultaneous application of non-tariff barriers decreases the demand for imported goods from Latin America in a considerable way, especially in case of the three countries that apply the most restrictive measures. They are more severe for countries with greater propensity to trade with these partners. In fact, the subregions most affected by rising intra-regional tariffs in the area are the Southern Common Market (MERCOSUR) and the Andean Community (CAN). Similarly, the Chilean exports are affected on those countries implementing the measures.

Decrease

Other countries that implemented some measures see their demand for imported goods reduced in scenario 1. In the event that all countries retaliate, the collapse of intraregional imports is much higher affecting Argentina, Ecuador and Venezuela, as well as some direct trading partners, such as Brazil and Paraguay, among others.

Table 14

Latin America and the Caribbean: Exports and Imports intraregional trade total changes under different scenarios

(Changes with respect to the baseline = 2008)

	ESC-01 Trade policy measures 2009	ESC-02 Retaliation scenario	ESC-03 Trade policy measures only for non-LAC partners	ESC-04 (ESC-03 plus free intra-regional trade ("0%))	ESC-05 Trade policy measures plus free intra-regional trade ("0%)) with international recuperation
Costa Rica	2,5	3,1	1,1	27,4	25,2
Guatemala	4,6	3,8	0,8	16,4	13,8
Nicaragua	3,4	2,6	0,8	9,2	7,5
Panama	4,0	3,2	3,8	32,8	31,8
Mexico	6,5	2,2	6,5	37,3	36,4
Bolivia	-1,4	-0,2	-0,5	2,7	5,8
Colombia	3,4	4,9	13,4	22,0	19,0
Ecuador	-4,5	-25,9	2,3	12,9	11,9
Perú	-1,3	5,2	4,6	13,7	12,0
Venezuela	-10,3	-12,2	-7,0	0,7	-3,6
Argentina	-1,4	-10,0	0,8	9,1	7,7
Brazil	-3,3	-9,9	3,4	24,2	20,8
Paraguay	-0,4	-3,0	0,5	2,0	1,0
Uruguay	2,3	4,5	1,5	7,6	4,9
Chile	-0,8	-3,1	3,2	18,1	15,1
Rest of Latin American	7,2	2,7	3,2	30,2	28,9
Latin American and the Caribbean	-0,7	-3,0	-0,2	2,6	4,3

Source: Author's own elaboration based on GTAP simulations

5. Conclusions and policy recommendations.

The use of border protections, including non-tariff barriers, was implemented by countries of the region to diminish the effects of the global trade crisis. The 2009 crisis included:
a) A worsening of balance of payments
b) A sharp fall in commodity prices;
c) The fall in prices of domestically produced goods that compete with similar products in the global economy (textiles, garments, shoes, tires, appliances, pipes iron, etc.)
d) The reduction of financing for exports, and
e) The intensification of trade distortions in other markets.

The over-accumulation of stocks in some countries of Asia, particularly in China, and low international prices, left exporters of products like textiles, clothing and industries in a tough global competition. The result was an important incentive to raise levels of protection for these industries, through measures such as antidumping, safeguards, licenses, minimum prices, among others.

Argentina, Ecuador and Venezuela implemented the most restrictive trade measures throughout the crisis. Using the methodology of Computable General Equilibrium and introducing scenarios that capture the gains losses) produced by non-tariff barriers, the effects of these measures were simulated for total and intra-regional trade.

The results of the measures over total imports point, in general, to that the tariffs applied by the countries of Latin America and the Caribbean has a low overall incidence on imports (3% of the imports from the world). The increase of tariffs was adopted by a group of few countries (Ecuador, Bolivia, Paraguay, Mexico and Brazil), by the other hand, there also were tariff reductions from some countries (Mexico, Brazil, Ecuador and Nicaragua) that selected partners with they had FTAs. These reductions were especially significant in Mexico and created opportunities for trade in that market.

Non-tariff barriers were greater than tariff increases (6%) with the majority directed towards the sectors of light and heavy manufacturing.

The exercises simulated shed light over the lack of dynamism on intraregional trade channels, particularly in sectors where there is high trade density. The results reproduced the trade friction that occurred in 2009 in the Andean Community and MERCOSUR, where trade flows were mostly restricted by the fall in domestic demand in member countries.

The simulations that reproduce the complete liberalization of intra-regional trade result in the recovery of trade in manufactured goods. The adverse effects of the international crises are less than those reproduced in scenarios 1 and 2.

From a trade policy standpoint, it seems that respecting international trade commitments and avoiding the implementation of trade barriers will result in the least detrimental effect to the domestic economy. These policy decisions contribute to a better business environment within the region. This was revealed by the results of the simulated exercises.

If restrictive measures are necessary to protect vulnerable sectors at the national level, it is recommended to adopt such measures on a temporary basis. Such measures should indicate the specific time of application and duration in order to not adversely affect future decisions regarding trade and investment.

Intraregional trade regions and their specific agreements should be preserved, especially in times of crisis. This is the main message of this research, especially for the small and medium enterprises (SMEs) that create jobs. By contrast, the proliferation of protectionist measures only exacerbate the negative impacts during times of crisis.

The return to a normal state, which would be reached by an improvement on the elementals that rule the global economy, including recovery in commodity prices, improves in the conditions of access to international credit and in products exported by the Latin America and the Caribbean and demanded, especially by the United States, the European Union and Asia, and the maintenance of the growth at China that would encourage raising level of exports worldwide.

The extreme scenario simulation, corresponding to tariff increases up to the bound levels in the WTO of Latin American countries and in the rest of the world, leads to a spectacular collapse of intra-regional trade. These simulated effects are a strong argument in favor of multilateralism.

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To be completed

ANEXO 1

AMÉRICA LATINA Y EL CARIBE, BASE GTAP 2004 BASE 7.0

Todos	Costa Rica	Guatemala	Nicaragua	Panama	Mexico	Bolivia	Colombia	Ecuador	Peru	Venezuela	Argentina	Brasil	Paraguay	Uruguay	Chile	Otros ALC	ALC
Costa Rica	0,0	0,0	0,0	2,2	10,6	6,4	12,4	7,3	9,5	10,1	3,3	5,3	5,1	9,1	4,9	3,6	4,6
Guatemala	0,0	0,0	0,0	0,1	11,2	3,8	5,6	2,9	7,6	9,5	4,2	2,9	6,2	2,9	5,4	2,2	3,3
Nicaragua	0,1	0,0	0,0	0,0	10,9	3,9	7,9	5,3	7,2	11,6	0,9	0,0	6,5	2,1	1,3	0,8	2,5
Panama	12,3	6,1	5,2	0,0	9,1	3,6	5,5	8,6	3,6	12,0	0,1	0,3	1,7	0,3	0,1	7,4	6,5
Mexico	6,8	3,5	5,0	0,7	0,0	0,4	1,0	8,6	7,9	2,9	2,2	5,6	9,3	0,3	0,0	12,3	6,4
Bolivia	6,0	0,6	2,5	0,8	0,0	0,0	8,0	2,9	6,2	4,6	2,3	0,1	6,6	7,0	1,2	5,0	2,8
Colombia	4,9	6,5	4,0	1,0	1,2	8,7	0,0	11,4	9,7	16,4	4,6	3,3	11,0	6,8	0,8	10,0	10,5
Ecuador	7,1	9,3	4,9	1,0	7,5	7,5	11,4	0,0	10,1	14,3	1,9	1,4	6,3	4,3	2,6	6,1	8,8
Peru	7,0	6,7	8,9	0,8	7,1	9,7	10,9	12,8	0,0	14,4	4,9	1,1	7,2	8,7	0,4	9,3	6,4
Venezuela	5,8	4,9	2,3	0,3	0,5	9,0	11,8	6,0	10,1	0,0	3,7	2,3	10,2	7,8	1,8	4,5	5,7
Argentina	8,4	4,5	5,4	4,1	5,1	1,7	11,2	9,8	6,6	14,7	0,0	0,0	0,2	0,2	0,5	8,4	2,2
Brasil	6,9	7,6	5,6	3,1	6,2	2,3	10,1	10,7	7,3	12,7	0,0	0,0	0,5	0,3	0,4	11,3	4,4
Paraguay	22,6	6,9	1,7	0,0	5,3	3,0	6,1	3,9	0,9	1,8	0,0	0,0	0,0	0,0	0,2	0,7	0,6
Uruguay	0,8	5,5	2,5	0,3	0,2	1,2	7,9	6,4	2,6	12,6	0,0	0,0	0,1	0,0	0,5	8,2	1,3
Chile	2,1	9,4	7,3	0,5	0,1	5,0	0,1	0,2	3,0	2,5	9,1	5,7	12,9	9,7	0,0	8,5	3,8
Otros ALC	2,1	3,1	3,2	0,1	10,9	3,1	4,3	3,9	4,3	7,6	3,8	3,3	2,7	3,6	2,7	2,0	5,0
ALC	**5,1**	**4,2**	**2,5**	**1,3**	**5,6**	**3,7**	**7,9**	**8,8**	**7,7**	**11,7**	**0,8**	**1,5**	**1,0**	**0,7**	**0,5**	**7,4**	**4,7**

AMÉRICA LATINA Y EL CARIBE, BASE GTAP 2004 MODIFICADA CON ALGORITMO ALTER TAX

Todos	Costa Rica	Guatemala	Nicaragua	Panama	Mexico	Bolivia	Colombia	Ecuador	Peru	Venezuela	Argentina	Brasil	Paraguay	Uruguay	Chile	Otros ALC	ALC
Costa Rica	0,0	0,0	0,0	2,2	10,6	6,4	12,4	7,3	9,5	10,1	3,3	5,3	5,1	9,1	4,9	3,6	4,6
Guatemala	0,0	0,0	0,0	0,1	11,2	3,8	5,6	2,9	7,6	9,5	4,2	2,9	6,2	2,9	5,4	2,2	3,3
Nicaragua	0,1	0,0	0,0	0,0	10,9	3,9	7,9	5,3	7,2	11,6	0,9	0,0	6,5	2,1	1,3	0,8	2,5
Panama	12,3	6,1	5,2	0,0	9,1	3,6	5,5	8,6	3,6	12,0	0,1	0,3	1,7	0,3	0,1	7,4	6,5
Mexico	6,8	3,5	5,0	0,7	0,0	0,4	1,0	8,6	7,9	2,9	2,2	5,6	9,3	0,3	0,0	12,3	6,4
Bolivia	6,0	0,6	2,5	0,8	0,0	0,0	7,8	2,4	2,9	4,4	2,3	0,1	6,6	7,0	1,2	5,0	2,3
Colombia	4,9	6,5	4,0	1,0	1,2	0,5	0,0	0,4	0,9	1,6	4,6	3,3	11,0	6,8	0,8	10,0	2,8
Ecuador	7,1	9,3	4,9	1,0	7,5	0,3	1,7	0,0	0,8	7,4	1,9	1,4	6,3	4,3	2,6	6,1	2,7
Peru	7,0	6,7	8,9	0,8	7,1	0,5	0,3	0,6	0,0	0,5	4,9	1,1	7,2	8,7	0,4	9,3	2,3
Venezuela	5,8	4,9	2,3	0,3	0,5	0,3	0,4	0,2	0,3	0,0	3,7	2,3	10,2	7,8	1,8	4,5	2,3
Argentina	8,4	4,5	5,4	4,1	5,1	1,7	11,2	9,8	6,6	14,7	0,0	0,0	0,2	0,2	0,5	8,4	2,2
Brasil	6,9	7,6	5,6	3,1	6,2	2,3	10,1	10,7	7,3	12,7	0,0	0,0	0,5	0,3	0,4	11,3	4,4
Paraguay	22,6	6,9	1,7	0,0	5,3	3,0	6,1	3,9	0,9	1,8	0,0	0,0	0,0	0,0	0,2	0,7	0,6
Uruguay	0,8	5,5	2,5	0,3	0,2	1,2	7,9	6,4	2,6	12,6	0,0	0,0	0,1	0,0	0,5	8,2	1,3
Chile	2,1	9,4	7,3	0,5	0,1	5,0	0,1	0,2	3,0	2,5	9,1	5,7	12,9	9,7	0,0	8,5	3,8
Otros ALC	2,1	3,1	3,2	0,1	10,9	3,1	4,3	3,9	4,3	7,6	3,8	3,3	2,7	3,6	2,7	2,0	5,0
ALC	**5,1**	**4,2**	**2,5**	**1,3**	**5,6**	**2,1**	**4,2**	**3,5**	**3,5**	**6,5**	**0,8**	**1,5**	**1,0**	**0,7**	**0,5**	**7,4**	**3,7**

Anexo 2
AMÉRICA LATINA Y EL CARIBE
BASE GTAP 7.0 y nueva línea de base 2008

Recibe / Paga	Aranceles 2004 GTAP 7.0						Aranceles base, proxy 2008					
	ALC	UE27	USA	China	Resto Asia	Mundo	ALC	UE27	USA	China	Resto Asia	Mundo
Costa Rica	4,6	11,4	1,7	0,4	0,8	5,8	4,6	11,4	0,7	0,4	0,8	5,6
Guatemala	3,3	1,0	15,6	2,1	5,3	8,3	3,3	1,0	11,2	2,1	5,3	6,5
Nicaragua	2,5	0,5	10,8	0,9	7,5	7,2	2,5	0,5	4,4	0,9	7,5	3,4
Panama	6,5	30,9	0,3	1,8	1,0	16,7	6,5	30,9	0,3	1,8	1,0	16,7
Mexico	6,4	0,4	0,1	4,3	6,9	0,8	6,4	0,4	0,1	4,3	6,9	0,8
Bolivia	2,8	0,3	0,1	0,4	5,5	2,2	2,3	0,3	0,1	0,4	5,5	1,9
Colombia	10,5	18,9	0,2	3,1	2,2	7,7	2,8	18,9	0,2	3,1	2,2	5,4
Ecuador	8,8	46,7	0,3	2,5	4,7	14,8	2,7	46,7	0,3	2,5	4,7	13,7
Peru	6,4	0,9	0,1	1,9	1,9	1,9	2,3	0,9	0,1	1,9	1,9	1,2
Venezuela	5,7	1,1	0,6	3,7	1,1	1,5	2,3	1,1	0,6	3,7	1,1	1,0
Argentina	2,2	7,6	2,8	3,2	10,7	5,8	2,2	7,6	2,8	3,2	10,7	5,8
Brasil	4,4	12,9	2,6	2,5	14,4	8,7	4,4	12,9	2,6	2,5	14,4	8,7
Paraguay	0,6	8,8	47,9	0,9	5,1	5,6	0,6	8,8	47,9	0,9	5,1	5,6
Uruguay	1,3	17,9	9,7	19,1	4,5	9,5	1,3	17,9	9,7	19,1	4,5	9,5
Chile	3,8	1,4	0,5	2,2	4,4	2,5	3,8	1,4	0,5	2,2	4,4	2,5
Otros ALC	5,0	9,9	4,9	3,6	2,1	5,9	5,0	9,9	4,9	3,6	2,1	5,9
A. Latina y el Caribe	**4,7**	**10,0**	**1,1**	**2,8**	**7,8**	**4,6**	**3,7**	**10,0**	**1,0**	**2,8**	**7,8**	**4,4**
Union Europea 27	6,2	0,1	1,4	6,8	4,7	1,7	**6,2**	**0,1**	**1,4**	**6,8**	**4,7**	**1,7**
China	10,4	3,7	3,3		6,0	5,3	10,4	3,7	3,3	0,0	6,0	5,3
Asia	9,8	2,7	2,3	6,3	5,0	4,6	9,8	2,7	2,3	6,3	5,0	4,6
EE UU	3,2	1,6		5,4	5,1	2,9	3,0	1,6	0,0	5,4	5,1	2,9
Resto del Mundo	5,7	1,4	0,6	3,7	5,4	2,8	5,7	1,4	0,6	3,7	5,4	2,8
Mundo	**5,4**	**1,1**	**1,6**	**5,9**	**5,2**	**3,0**	**5,2**	**1,1**	**1,6**	**5,9**	**5,2**	**3,0**

Anexo 3
Escenario de Políticas 2009 y de Retaliación Comercial

(Resistencia arancelaria países de la base)

Recibe / Paga	Aranceles escenario de retaliación						Aranceles escenario de política comercial Status quo comercio intra					
	ALC	UE27	USA	China	Resto Asia	Mundo	ALC	UE27	USA	China	Resto Asia	Mundo
Costa Rica	3,4	11,4	0,7	0,4	0,8	5,4	4,7	12,3	3,7	0,4	0,9	6,8
Guatemala	2,6	1,0	11,2	2,1	5,3	6,3	3,7	1,6	14,5	2,2	5,3	8,1
Nicaragua	1,6	0,5	4,4	0,9	7,5	3,3	2,5	1,0	5,0	1,3	8,1	3,9
Panama	6,4	30,9	0,3	1,8	1,0	16,7	6,7	31,0	1,1	2,1	1,0	16,9
Mexico	6,7	0,4	0,1	4,3	6,9	0,8	6,7	0,4	0,1	4,3	6,9	0,8
Bolivia	2,4	0,3	0,1	0,4	5,5	1,9	3,4	1,2	7,2	0,7	5,8	3,7
Colombia	2,8	18,9	0,2	3,1	2,2	6,3	5,6	19,1	4,2	3,1	2,3	7,7
Ecuador	2,7	46,7	0,3	2,5	4,7	13,7	7,1	46,8	5,4	4,3	4,7	17,1
Peru	4,0	0,9	0,1	1,9	1,9	1,5	4,0	2,6	8,8	1,9	1,9	4,5
Venezuela	2,9	1,1	0,6	3,7	1,1	1,1	3,3	3,0	1,5	5,6	2,4	2,1
Argentina	2,2	7,6	2,8	3,2	10,7	5,8	2,5	7,6	2,8	3,2	10,7	5,9
Brasil	4,5	12,9	2,6	2,5	14,4	8,7	5,3	13,3	2,9	2,6	14,8	9,1
Paraguay	0,6	8,8	47,9	0,9	5,1	5,6	0,6	8,8	48,3	1,0	5,1	5,7
Uruguay	1,4	17,9	9,7	19,1	4,5	9,5	1,4	18,2	9,8	19,3	4,5	9,7
Chile	5,5	1,4	0,5	2,2	4,4	2,8	4,8	1,4	0,6	2,2	4,4	2,7
Otros ALC	4,2	9,9	4,9	3,6	2,1	5,8	5,3	9,9	5,8	6,3	2,1	6,3
A. Latina y el Caribe	**4,0**	**10,0**	**1,0**	**2,8**	**7,8**	**4,4**	4,6	10,4	1,6	3,1	8,0	4,9
Union Europea 27	**6,4**	**0,1**	**1,4**	**6,8**	**4,7**	**1,7**	6,8	0,1	1,4	6,8	4,7	1,8
China	10,1	3,7	3,3	0,0	6,0	5,3	10,7	3,7	3,3	0,0	6,0	5,4
Asia	9,8	2,7	2,3	6,3	5,0	4,6	10,7	2,7	2,3	6,3	5,0	4,6
EE UU	3,7	1,6	0,0	5,4	5,1	3,0	3,6	1,6	0,0	5,7	5,1	3,0
Resto del Mundo	5,9	1,4	0,6	3,7	5,4	2,8	6,6	1,4	0,6	3,8	5,4	2,8
Mundo	**5,5**	**1,1**	**1,6**	**5,9**	**5,2**	**3,0**	5,9	1,1	1,7	5,9	5,2	3,1

Anexo 4

Argentina: porcentaje de importaciones afectadas por barreras no arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	**Arroz**	0%	0%		0%	0%			0%
2	**Trigo**	0%			0%	0%		0%	0%
3	**Ocereales**	0%	0%		0%	0%	0%	0%	0%
4	**FrutasVeg**	0%	0%	0%	0%	0%	0%	0%	0%
5	**Semillaoil**	0%	0%	0%	0%	0%		0%	0%
6	**Ocultivos**	0%	0%	0%	0%	0%	0%	0%	0%
7	**FibrasVeg**	0%				0%		0%	0%
8	**Ganaderia**	0%	0%	0%	0%	0%	0%	0%	0%
9	**Forestal**	0%		0%	0%	0%		0%	0%
10	**Pesca**	0%	0%	0%	0%	0%	0%	0%	0%
11	**ExtEnergia**	0%	0%	0%	0%	0%	0%	0%	0%
12	**Mineria**	0%	0%	0%	0%	0%	0%	0%	0%
13	**Carne**	0%	0%		0%	0%	0%	0%	0%
14	**AceitesVeg**	0%	0%	0%	0%	0%	0%	0%	0%
15	**Lacteos**	0%			0%	0%			0%
16	**OtrosAlim**	0%	0%	0%	0%	0%	0%	0%	0%
18	**BebyTab**	0%	0%	0%	0%	0%	0%	0%	0%
19	**Textiles**	47%	60%	74%	39%	33%	0%	18%	53%
20	**Confecciones**	4%	8%	7%	0%	1%	2%	1%	5%
21	**CueroCalz**	0%	6%	48%	0%	0%	0%	0%	20%
22	**Madera**	0%	0%	0%	0%	0%	0%	0%	0%
23	**Papel**	0%	0%	0%	0%	0%	0%	0%	0%
24	**DPetroleo**	0%	0%	0%	0%	0%	0%	0%	0%
25	**Quimicos**	20%	11%	4%	4%	5%	0%	1%	9%
26	**ProdMineral**	3%	0%	19%	1%	0%	0%	0%	5%
27	**Metal**	22%	10%	6%	15%	3%	54%	1%	17%
28	**ProdMetal**	19%	19%	39%	20%	24%		14%	22%
29	**Autop**	22%	32%	49%	27%	50%	100%	4%	25%
30	**ETransp**	0%	0%	3%	0%	0%		0%	1%
31	**OtrManuf**	35%	14%	26%	14%	16%	9%	9%	23%
32	**MaquiEquip**	72%	57%	24%	32%	55%	10%	52%	45%

Anexo 5
Ecuador: porcentaje de importaciones afectadas por barreras no arancelarias, detalle sectorial

Orden	Producto	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	**Arroz**	100%		0%	0%	0%			89%
2	**Trigo**	0%			0%	0%		0%	0%
3	**Ocereales**	0%	0%		0%	0%		0%	0%
4	**FrutasVeg**	77%	0%	10%	43%	67%		8%	58%
5	**Semillaoil**	0%	0%	0%	0%	0%	0%	0%	0%
6	**Ocultivos**	22%	2%	22%	14%	21%	1%	3%	20%
7	**FibrasVeg**	0%	0%	0%	0%	0%		0%	0%
8	**Ganaderia**	6%	0%	0%	1%	5%	0%	0%	4%
9	**Forestal**	0%	0%	0%	0%	0%		0%	0%
10	**Pesca**	30%	0%	0%	0%	0%	0%	0%	7%
11	**ExtEnergia**	0%	0%	0%	0%	0%	0%	0%	0%
12	**Mineria**	0%	0%	0%	0%	0%	0%	0%	0%
13	**Carne**	35%	0%	0%	62%	0%		92%	43%
14	**AceitesVeg**	1%	0%	0%	0%	0%		0%	0%
15	**Lacteos**	68%		0%	0%	0%			30%
16	**OtrosAlim**	62%	7%	34%	52%	40%	64%	24%	58%
18	**BebyTab**	85%		89%	49%	29%	0%	3%	70%
19	**Textiles**	6%	1%	1%	6%	8%	0%	9%	4%
20	**Confecciones**	81%	5%	15%	58%	57%	0%	3%	41%
21	**CueroCalz**	30%	10%	22%	31%	39%	41%	12%	23%
22	**Madera**	1%	0%	0%	0%	0%	0%	0%	0%
23	**Papel**	41%	5%	28%	20%	43%	96%	2%	35%
24	**DPetroleo**	0%	0%	0%	0%	0%	0%	0%	0%
25	**Quimicos**	30%	20%	25%	4%	6%	7%	2%	18%
26	**ProdMineral**	27%	6%	9%	9%	11%	0%	30%	18%
27	**Metal**	0%	0%	0%	0%	0%	0%	0%	0%
28	**ProdMetal**	31%	12%	23%	9%	14%	0%	3%	21%
29	**Autop**	78%	93%	60%	47%	48%	94%	28%	85%
30	**ETransp**	81%	82%	87%	14%	8%	100%	57%	66%
31	**OtrManuf**	19%	17%	34%	11%	6%	1%	14%	18%
32	**MaquiEquip**	70%	22%	42%	42%	40%	45%	19%	45%

Anexo 6
Venezuela: porcentaje de importaciones afectadas por barreras no arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	**Arroz**	0%	0%	0%	0%	0%			0%
2	**Trigo**	0%			0%			0%	0%
3	**Ocereales**	0%			0%	0%		0%	0%
4	**FrutasVeg**	7%	0%	0%	12%	3%	0%	0%	6%
5	**Semillaoil**	0%		0%	0%	0%	0%	0%	0%
6	**Ocultivos**	0%	1%	0%	0%	2%	0%	0%	0%
7	**FibrasVeg**	45%							45%
8	**Ganaderia**	0%	94%	99%	9%	1%	0%	0%	0%
9	**Forestal**	28%	99%	100%	89%	83%		0%	63%
10	**Pesca**	31%	1%		93%	0%	0%	0%	29%
11	**ExtEnergia**	54%			96%	100%		0%	51%
12	**Mineria**	27%	72%	38%	88%	60%	0%	0%	35%
13	**Carne**	0%	0%	0%	0%	0%	0%	0%	0%
14	**AceitesVeg**	0%	27%	0%	2%	1%	0%	0%	1%
15	**Lacteos**	0%			0%	0%		0%	0%
16	**OtrosAlim**	14%	14%	35%	4%	8%	0%	0%	12%
18	**BebyTab**	1%	23%	74%	6%	54%	0%	0%	34%
19	**Textiles**	56%	95%	98%	82%	86%	0%	18%	69%
20	**Confecciones**	55%	100%	100%	100%	96%	0%	10%	64%
21	**CueroCalz**	63%	89%	100%	100%	94%	0%	7%	73%
22	**Madera**	36%	99%	100%	100%	99%	0%	0%	70%
23	**Papel**	40%	98%	99%	99%	88%	0%	0%	63%
24	**DPetroleo**	28%	100%	100%	72%	86%	0%	0%	68%
25	**Quimicos**	19%	59%	58%	52%	24%	0%	2%	30%
26	**ProdMineral**	39%	95%	99%	97%	87%	0%	1%	62%
27	**Metal**	28%	83%	87%	83%	66%	0%	5%	52%
28	**ProdMetal**	36%	95%	97%	97%	81%	0%	6%	65%
29	**Autop**	30%	94%	85%	77%	41%	0%	85%	59%
30	**ETransp**	44%	99%	100%	94%	94%	0%	0%	63%
31	**OtrManuf**	41%	73%	80%	68%	48%	0%	13%	57%
32	**MaquiEquip**	68%	100%	100%	99%	84%	0%	12%	81%

Tabla 1.5 Mexico: porcentaje de importaciones afectadas por barreras arancelarias y no arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	**Arroz**	0%	0%		0%	0%			0%
2	**Trigo**	0%	0%	0%	0%	0%		0%	0%
3	**Ocereales**	0%	0%		0%	0%		0%	0%
4	**FrutasVeg**	0%	0%	0%	13%	0%	0%	0%	10%
5	**Semillaoil**	0%	0%	0%	0%	0%	0%	0%	0%
6	**Ocultivos**	0%	0%	0%	17%	0%	0%	0%	12%
7	**FibrasVeg**	0%	0%	0%	0%	0%		0%	0%
8	**Ganaderia**	0%	0%	0%	0%	0%	0%	0%	0%
9	**Forestal**	0%	0%	0%	0%	0%	0%	0%	0%
10	**Pesca**	0%	0%	0%	0%	0%	0%	0%	0%
11	**ExtEnergia**	0%	0%	0%	0%	0%	0%	0%	0%
12	**Mineria**	0%	0%	0%	0%	0%	0%	0%	0%
13	**Carne**	0%	0%	0%	0%	0%	0%	0%	0%
14	**AceitesVeg**	0%	0%	0%	0%	0%	0%	0%	0%
15	**Lacteos**	0%			0%	0%		0%	0%
16	**OtrosAlim**	0%	0%	0%	52%	0%	0%	0%	34%
18	**BebyTab**	0%	0%	0%	4%	0%	0%	0%	2%
19	**Textiles**	0%	0%	0%	1%	0%	0%	0%	1%
20	**Confecciones**	0%	0%	0%	78%	0%	0%	0%	35%
21	**CueroCalz**	0%	0%	0%	0%	0%	0%	0%	0%
22	**Madera**	0%	0%	0%	0%	0%	0%	0%	0%
23	**Papel**	0%	0%	0%	11%	0%	0%	0%	8%
24	**DPetroleo**	0%	0%	0%	0%	0%	0%	0%	0%
25	**Quimicos**	0%	0%	0%	2%	0%	0%	0%	1%
26	**ProdMineral**	0%	0%	0%	2%	0%	0%	0%	1%
27	**Metal**	0%	0%	1%	3%	0%	0%	0%	2%
28	**ProdMetal**	0%	0%	0%	0%	0%	0%	0%	0%
29	**Autop**	0%	0%	0%	0%	0%	0%	0%	0%
30	**ETransp**	0%	0%	0%	0%	0%	0%	0%	0%
31	**OtrManuf**	0%	0%	0%	14%	0%	0%	0%	5%
32	**MaquiEquip**	8%	11%	66%	43%	14%	3%	8%	44%

Tabla 1.6 Mexico: porcentaje de importaciones favorecidas por reducciones arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	Arroz	0%	0%		0%	0%			0%
2	Trigo	0%	0%	0%	0%	0%		0%	0%
3	Ocereales	0%	0%		0%	0%		0%	0%
4	FrutasVeg	0%	0%	0%	0%	0%	0%	0%	0%
5	Semillaoil	0%	0%	0%	0%	0%	0%	0%	0%
6	Ocultivos	0%	0%	0%	0%	0%	0%	0%	0%
7	FibrasVeg	100%	100%	100%	100%	100%		100%	100%
8	Ganaderia	26%	19%	81%	11%	18%	72%	3%	13%
9	Forestal	100%	100%	100%	100%	100%	100%	100%	100%
10	Pesca	0%	0%	0%	0%	0%	0%	0%	0%
11	ExtEnergia	100%	100%	100%	100%	100%	100%	99%	100%
12	Mineria	100%	100%	100%	100%	100%	100%	100%	100%
13	Carne	0%	0%	0%	0%	0%	0%	0%	0%
14	AceitesVeg	99%	98%	84%	86%	93%	100%	98%	92%
15	Lacteos	0%			0%	0%		0%	0%
16	OtrosAlim	4%	22%	7%	22%	39%	13%	27%	21%
18	BebyTab	0%	0%	0%	0%	0%	0%	0%	0%
19	Textiles	100%	99%	100%	100%	100%	99%	100%	100%
20	Confecciones	100%	100%	100%	100%	100%	100%	100%	100%
21	CueroCalz	100%	100%	100%	100%	100%	100%	100%	100%
22	Madera	100%	100%	100%	100%	100%	100%	100%	100%
23	Papel	100%	100%	100%	100%	100%	100%	100%	100%
24	DPetroleo	100%	100%	100%	100%	100%	100%	97%	100%
25	Quimicos	99%	100%	100%	100%	100%	99%	99%	100%
26	ProdMineral	100%	100%	100%	100%	100%	100%	99%	100%
27	Metal	100%	100%	100%	100%	100%	100%	100%	100%
28	ProdMetal	100%	100%	100%	100%	100%	100%	99%	100%
29	Autop	100%	100%	100%	100%	100%	100%	100%	100%
30	ETransp	100%	100%	100%	100%	94%	91%	100%	99%
31	OtrManuf	100%	100%	100%	100%	100%	100%	99%	100%
32	MaquiEquip	100%	100%	100%	100%	100%	100%	99%	100%
33	Servicios				100%			100%	100%

Tabla 1.7 Brasil: porcentaje de importaciones afectadas por medidas arancelarias y no arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	Arroz	0%	0%		0%	0%		0%	0%
2	Trigo	0%			0%			0%	0%
3	Ocereales	0%	0%	0%	0%	0%		0%	0%
4	FrutasVeg	0%	0%	0%	0%	0%		0%	0%
5	Semillaoil	0%	0%	0%	0%	0%		0%	0%
6	Ocultivos	0%	0%	0%	0%	0%	0%	0%	0%
7	FibrasVeg	0%	8%	0%		0%			6%
8	Ganaderia	56%	0%	0%	0%	0%	0%	0%	27%
9	Forestal	0%	0%	0%	0%	0%		0%	0%
10	Pesca	0%	0%	0%	0%	0%	0%	0%	0%
11	ExtEnergia	0%	0%	0%	0%	0%	0%	0%	0%
12	Mineria	0%	0%	0%	0%	0%	0%	0%	0%
13	Carne	0%	0%	0%	0%	0%		0%	0%
14	AceitesVeg	11%	18%	87%	45%	9%		19%	15%
15	Lacteos	0%			0%	0%		0%	0%
16	OtrosAlim	0%	0%	0%	0%	0%	0%	0%	0%
18	BebyTab	0%	0%	0%	0%	0%	0%	0%	0%
19	Textiles	0%	0%	0%	0%	0%	0%	0%	0%
20	Confecciones	0%	0%	0%	0%	0%	0%	0%	0%
21	CueroCalz	3%	25%	72%	35%	30%	0%	4%	51%
22	Madera	0%	0%	0%	0%	0%	0%	0%	0%
23	Papel	0%	0%	0%	0%	0%	0%	0%	0%
24	DPetroleo	0%	0%	0%	0%	0%	0%	0%	0%
25	Quimicos	10%	2%	9%	1%	0%	0%	0%	2%
26	ProdMineral	0%	8%	1%	5%	12%	0%	1%	6%
27	Metal	3%	7%	26%	19%	7%	0%	29%	11%
28	ProdMetal	0%	0%	0%	0%	0%	0%	0%	0%
29	Autop	0%	1%	2%	2%	1%	0%	1%	1%
30	ETransp	0%	0%	0%	0%	0%	0%	0%	0%
31	OtrManuf	3%	2%	1%	6%	5%	1%	4%	3%
32	MaquiEquip	0%	0%	0%	0%	0%	0%	0%	0%

Tabla 1.8 Brasil: porcentaje de importaciones favorecidas por reducciones arancelarias, detalle sectorial

Orden	ProdPM	ALC	Asia	China	EE UU	EU 27	Resto de ALC	Resto del Mundo	Total
1	Arroz	0%	0%		0%	0%		0%	0%
2	Trigo	0%			0%			0%	0%
3	Ocereales	0%	0%	0%	0%	0%		0%	0%
4	FrutasVeg	0%	0%	0%	0%	0%		0%	0%
5	Semillaoil	0%	0%	0%	0%	0%		0%	0%
6	Ocultivos	6%	1%	80%	34%	42%	82%	17%	31%
7	FibrasVeg	0%	99%	0%		0%			77%
8	Ganaderia	0%	0%	0%	0%	0%	0%	0%	0%
9	Forestal	0%	0%	0%	0%	0%		0%	0%
10	Pesca	0%	0%	0%	0%	0%	0%	0%	0%
11	ExtEnergia	0%	0%	0%	0%	0%	0%	0%	0%
12	Mineria	0%	12%	0%	0%	0%	0%	0%	0%
13	Carne	0%	0%	0%	0%	0%		0%	0%
14	AceitesVeg	0%	0%	0%	0%	0%		0%	0%
15	Lacteos	0%			0%	0%		0%	0%
16	OtrosAlim	0%	0%	0%	0%	0%	0%	0%	0%
18	BebyTab	0%	0%	0%	0%	0%	0%	0%	0%
19	Textiles	0%	0%	0%	0%	0%	0%	0%	0%
20	Confecciones	0%	0%	0%	0%	0%	0%	0%	0%
21	CueroCalz	0%	0%	0%	0%	0%	0%	0%	0%
22	Madera	0%	0%	0%	0%	0%	0%	0%	0%
23	Papel	0%	0%	0%	0%	0%	0%	0%	0%
24	DPetroleo	0%	0%	0%	0%	0%	0%	0%	0%
25	Quimicos	9%	13%	10%	12%	13%	0%	2%	10%
26	ProdMineral	0%	2%	0%	3%	7%	0%	1%	3%
27	Metal	0%	0%	0%	0%	1%	0%	0%	0%
28	ProdMetal	0%	0%	0%	0%	0%	0%	0%	0%
29	Autop	2%	14%	29%	21%	13%	5%	12%	10%
30	ETransp	6%	0%	2%	0%	0%	0%	0%	0%
31	OtrManuf	5%	4%	4%	7%	8%	5%	6%	5%
32	MaquiEquip	0%	0%	0%	0%	0%	0%	0%	0%