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# INTRA-REGIONAL vs EXTRA-REGIONAL TRADE LIBERALIZATION IN CENTRAL AMERICA<sup>1</sup>

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## **ABSTRACT**

The countries in the Central American region (henceforth CA: Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica and Panamá) have signed multiple trade agreements in the recent past. Sometimes the whole CA worked as a unified agent, for instance vis à vis the United States or the European Union. In other cases, some individual countries took the initiative to extend their list of freely tradeable goods and services. CA exports and imports very extensively with the United States (39% of the aggregate exports). However, the recent growth of the intra-regional trade has been especially remarkable. The experts emphasize that such trade generates more internal added value than the inter-regional one, which may allow for higher local welfare and a more favorable external balance for CA. Our simulations try to evaluate which alternative is locally preferable, taking into account that any intra-regional trade liberalization would stimulate sectors that compete for productive resources with the world exports. To that purpose, our first shock will be an elimination of existing tariffs at the intra-regional level while keeping the protection against imports from the rest of the world. In our second simulation, we will keep the current level of tariffs within CA, while reducing with the shock the barriers to the inter-regional trade with the United States. Taking this background into account, we use a perfectly competitive GTAP CGE model based on the GTAP 9 database, to assess the impact of the different scenarios, based on the current trade relationships. Our intention is then advising the CA authorities as to which range of trade negotiations should be prioritized today.

*Key words: GTAP, applied general equilibrium, trade liberalization, Central America.*

*JEL Codes: C68, D58.*

## **RESUMEN**

Los países en la región de Centroamérica (CA: Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica y Panamá) han firmado múltiples acuerdos comerciales en el pasado reciente. En ocasiones Centroamérica participó como un agente unificado. En otros casos, algunos países tomaron la iniciativa individual de extender su lista de bienes y servicios libremente comerciables. CA exporta e importa muy intensamente con los Estados Unidos (39% de sus exportaciones agregadas). Sin embargo, el crecimiento reciente del comercio intra-regional ha sido especialmente relevante. Los expertos subrayan que dicho comercio genera proporcionalmente más valor añadido interno que el inter-regional, lo que podría facilitar un mayor bienestar local y un equilibrio más favorable de la balanza de pagos. Nuestras simulaciones tratan de evaluar qué alternativa es preferible localmente,

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<sup>1</sup> Senior authorship is not assigned.

teniendo en cuenta que cualquier liberalización intra-regional estimula ciertos sectores que compiten por recursos productivos con las exportaciones inter-regionales. Teniendo en cuenta estas consideraciones, hemos utilizado un modelo CGE perfectamente competitivo fundado en la base de datos GTAP 9, para medir el impacto de diferentes escenarios, basados en las relaciones comerciales actualmente existentes. Nuestra intención, por lo tanto, es aconsejar a las autoridades centroamericanas acerca del tipo de negociaciones comerciales que debieran ser priorizadas en la actualidad.

*Key words: GTAP, Equilibrio General Aplicado, Liberalización comercial, Centroamérica.*

*Códigos JEL: C68, D58.*

## 1. INTRODUCTION

The new regionalism has multiple expressions in Latin America. New initiatives (Pacific Alliance, UNASUR, ALBA) coexist with old processes inspired by the old regionalism from the fifties and sixties (ALADI, SICA, CARICOM and CAN) and also from the nineties (MERCOSUR). The Central American Integration System (SICA, acronym in Spanish) is one of the oldest regionalisms in the region since the signature in 1960 of the General Treaty of Economic Integration and the creation of the Central American Common Market (CACM). After the crisis of the 1980's, regional integration was a key variable in the regional Peace Agreements. In the framework of these Peace Agreements, the Central American countries restructured the integration process with the signature of SICA. The new SICA was created with a multidimensional approach, but the economic integration was still very relevant.

While negotiating the Peace Agreements at the end of the 1980s, the Central American countries began a process of trade liberalization under the structural adjustment negotiated with the IMF and the World Bank. These countries also applied some measures to attract FDI in order to strengthen their export capacity. However, the Central American countries maintained the customs union project when SICA came up to a renewal in the early nineties (Guatemala Protocol to the General Treaty for Economic Integration, in 1993).

Central America has today an imperfect customs union based on the following conditions:

- The customs union is conformed by Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panamá. The latter country recently joined and is gradually adopting the legal framework associated with the customs union (Dominican Republic and Belize are not involved). A comprehensive common policy on safeguard measures, origin of goods, unfair practices, transit of goods, sanitary and phytosanitary measures, non-tariff barriers, trade disputes, customs administration, regional transport and other matters.
- However, free intra-regional trade is limited by some unilateral measures, numerous safeguard clauses and other non-tariff barriers, which are especially prevalent in the case of Costa Rica. In addition, Panama is gradually joining Customs Union agreements and tariff barriers with other Central American countries are still very important.
- A common external tariff that covers the whole tariff universe, except 4.3% of the items. This creates some disharmony given the relevance of these exceptions in terms of taxes or in terms of the local lobbies' interests (especially concerning

agricultural products, but also related to industrial products such as metal, wood and medicines).

This imperfect customs union coexists with a not fully coordinated foreign trade policy. The external tariff is experiencing separate negotiations, which do not grant community tariff preferences and, in practice, reduce the effectiveness of the customs union and its legitimacy among the producers and entrepreneurs. In addition, in the first months of 2016, Honduras and Guatemala are negotiating to speed up the signature of a customs union agreement between them.

However, the region has developed some joint agreements with its major partners. First, with the United States and the Dominican Republic and secondly with the European Union (AAUECA). In addition, it is negotiating with Mexico the consolidation of a single agreement. . It has a free trade agreement with the Dominican Republic under bilateral application. The countries signed some FTA negotiations of bilateral application with Chile. In addition, Costa Rica and Honduras have bilateral FTAs with Canada (the rest of the CA countries are negotiating), People's Republic of China, Singapore and CARICOM. All countries have signed a FTA of bilateral application with Peru, with the exception of Nicaragua. El Salvador, Honduras and Guatemala signed it with Colombia. Nicaragua, Guatemala and El Salvador negotiated and implemented simultaneously a bilateral FTA with Taiwan.

Only five of the trade agreements of Central American countries are regional (Chile, United States, Mexico, Dominican Republic and the European Union). The rest have been negotiated bilaterally by one or more countries, which has created difficulties in meeting the goal of creating a customs union.

**Table 1.**

**Central America: Free Trade Agreements in force in 2015**

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panamá
European Free Trade Agreement (EFTA)	Ago-14		Jul-15 F			Ago-14
Canadá	Nov 02 E.M.			Oct-14		Abr-13
CARICOM	Nov-05 a/					
Colombia	May-13 F	Feb-10	Nov-09	Mar-10		Sep-13 F
Cuba					Abr-14	Ago-09
Chile-Central America	Feb-02	Jun-02	Mzo-10	Jul-08	Oct-12	Mar-08
China	Ago-11					
USA						Oct-11
USA-RD-CA	Ene-09	Dic-04	Mar-05	Abr-06	Oct-05	
México						Jul-15
México-Central America	Jul-13	Sep-12	Sep-13	Ene-13	Sep-12	
Panamá-Central America	Nov-08	Abr-03	Jun-09	Ene-09	Nov-09	Mar-09
Perú	Jun-13		Dic-11 F	May-15 F		May-12
Dominican Republic						Jun-87
Dominican Republic-CA	Mar-02	Oct-01	Oct-01	Dic-01	Sep-02	
Singapur	Jul-13					Jul-06
Trinidad and Tobago		Oct-14 F b/				Oct-13 F
China-Taiwán		Ene-08	Jul-06	Jul-08	Ene-08	Ene-04
European Union	Oct-13	Oct-13	Dic-13	Ago-13	Ago-13	Ago-13

Source: ECLAC on SICE database of the Organization of American States (OAS).

Notes: E.N. In negotiation / E.M. In modernization / F: Signed

a/ Existing Treaty with Trinidad and Tobago, Jamaica, Guyana, Barbados and Belize.

b/ Partial Agreement.

But even with this complex map of trade agreements, the share of intra-regional trade within SICA is the highest in the Latin American regionalism processes, including classic and recent agreements such as the Pacific Alliance. CACM countries, according to the Statistical System of Central American Trade (<http://estadisticas.sieca.int/>), represent the second largest partner for the region itself (32.70% of exports and 18.07% of imports in 2015). The first partner is United States (33.2% of exports and 34.23% of imports in 2015). The EU is the third largest export destination, but only the fifth market of origin of imports. China and Mexico (11% and 8.23%, respectively, in 2015) are also two important countries for the Central American imports. Exports to China are only 1.23% in 2015, but imports are growing significantly every year.

The development strategies of Central American countries have been more focused on the promotion of free trade agreements with third partners, even if that was done in an uncoordinated manner. Trade relations with key partners for Central America are covered by trade agreements, except in the case of China, an emerging partner that has agreement only with Costa Rica. However, the academic literature on the analysis of the impact of trade agreements is not wide, since some of them have been applied only for a few years. Nevertheless,, although the Central American countries face big challenges of modernization and competitiveness for their economies, the development of a network of trade agreements with third countries seems finished. What seems to be still pending is the full development of the customs union agreements and its complementary development agenda. The customs union is a second-level priority for the Central American governments, though.

Which are the questions still under negotiation? First of all, exceptions to free intra-regional trade. The general principle is that goods excluded from the free trade regimes (those that are still listed in "A" Appendix of the General Treaty) are subject to the payment of a MFN tariff like any other import from the rest of the world. However, there are some regionally differentiated treatments for these exceptions, regarding the implementation of measures such as "control of imports", tied to administrative licenses or authorizations, which may include charging a tariff rate.

Secondly, there are many products still affected by the tariffs applied by Costa Rica to its regional partners. Some of them would be affected by temporary safeguard measures, attending to the SICA specific normative. Other Costa Rican exceptions to free trade regime should be based on the discussion of the origins of goods.



Finally, trade between Panama and the rest of the Central American countries is still ruled by previous free trade agreements, as long as the incorporation of Panama to the Customs Union is still unfinished.

The performance of Central American countries in their intra-regional trade shows that the main intra-regional exporters are, in this order, Guatemala, El Salvador and Costa Rica; at a considerable distance from Honduras and Nicaragua. In terms of the intra-regional imports, the list has the following order: Honduras, El Salvador, Guatemala and Nicaragua. El Salvador is the country for which the regional market is most important, given its relative participation (more than 40% of its exports), followed by Guatemala. Costa Rica has the lowest percentage (less than 15%). Costa Rica and Guatemala show regularly a positive surplus in intra-regional trade.

According to the theoretical analysis, intra-regional trade can have offsetting effects on the dependence of the US economy, especially during times of crisis. In addition, the composition of intra-regional trade could be substantially different from the content of extra-regional trade. A wider implication of sectors and the importance of industrial and agro-industrial linkages are the main arguments in favor of a bigger added value from the intra-regional trade.

The development of intra-regional trade figures may not be yet enough to provide incentives to the member states. The main purpose of this paper is exploring the potential impact of a customs union in order to encourage the unfinished negotiations, providing a coherent connection with external trade agreements. The development strategies focused on the customs union could be very significant, and of particular interest for the governments in the region.

## **2. SPECIFICATION OF THE MODELLING APPROACH AND THE SCENARIOS**

### **2.1. The model and the database**

A GTAP (Global Trade Analysis Project) Computable General Equilibrium (CGE) model has been used in order to run some simulations related to the Central American (CA) economic integration. The GTAP model and databases were created in 1992, initially to allow for a quantitative evaluation of the individual impacts of the Uruguay Round negotiations, which took place under the coverage of the General Agreement on Tariffs and Trade (GATT) (Hertel, 1997). Over time a number of improvements and amendments have been introduced in the way that GTAP deals with environmental issues (GTAP-E, Burniaux and Truong, 2002), some versions of the model that introduce monopolistic competition in

particular sectors (Swaminathan and Hertel, 1997), immigration issues (GTAP-MIG), global policy impacts on poverty (GTAP-POV) and recent updates in the evaluation of the impacts of bilateral FTA negotiations (Megiato et al., 2016), among others. The model is amenable according to the user's needs.

The modeling language of the GTAP structure is GEMPACK, and the model consists of four main components:

- a) A database with input-output (IO) and social accounting matrices; tax and trade flows information matrices that provide the necessary input information for the subsequent impact analysis.
- b) A mathematical model that mimics the workings of the world economy through a nested structure, integrated by microeconomic functions (producer cost minimization, profit maximization and consumers' behavioral functions).
- c) Macroeconomic closure conditions, which allow selecting different endogenous and exogenous variables (the number of endogenous variables should be equal to a number of equations). The policy impact evaluation is performed by introducing a "shock" on the exogenous variables.
- d) Data on elasticities of substitution among primary factors, between domestic and imported goods (with the Armington structure) and among imports from different sources.

In the present study, the standard version 6.2 of the GTAP model was used, assuming perfect competition and constant returns to scale, together with standard closure rules. Other assumptions of the model are: all markets clear, all firms operate with zero profits and all households are on their budget constraint. This entails that global investment is equal to global savings according to Walras' law (Hertel, 1997).

A Leontieff technology is applied to the productive structure, which implies zero substitutability between primary factors of production and intermediate inputs at the top of the three levels of the nested structure.

The utility function has a four level structure and a Cobb-Douglas functional form. At the highest level, a Cobb-Douglas utility function allocates income to private consumption, government spending and savings. At the second level, all spending is allocated among final goods using a non-homothetic functional form with constant difference elasticity (CDE). The remaining two levels of the utility function, which allocate goods and services to the government and consumers, are similar to the second and third level demand by firms for intermediate inputs, with a constant elasticity of substitution.

## **2.2. Database and regional and sectoral aggregation used**

A GTAP 9 data base has been used in the present analysis, comprising 140 regions, 57 sectors and 8 types of endowments (land, natural resources, capital and workers with different skills). For workers, five labor skill categories are considered<sup>2</sup>. Bilateral trade data corresponds to the year 2011.

However, for the purpose of the study the available 140 regions were aggregated into 11:

1. Guatemala.
2. Honduras.
3. El Salvador.
4. Nicaragua.
5. Costa Rica.
6. Panamá.
7. Rest of South America.
8. USA.
9. EU 28.
10. China.
11. ROW (Rest of the world).

The proposed aggregation includes 6 individual Central American countries and their main current commercial partners such as China and the EU 28. The sectors and endowments present in our GTAP 9 database were fully exploited, thus the resulting database has a dimension of 11 regions, 57 commodities and 8 factor endowments. The decision to use all 57 sectors and not to aggregate them should allow us to get the least biased results, since according to Bektasoglu (2015) the biases of data aggregation are much stronger than those related to the model structure.

## **2.3. Scenarios**

Two scenarios are proposed for the evaluation of the impacts of trade liberalization on our Central American countries:

- Scenario 1: Economic integration of the 6 CA countries via the elimination of all import tariffs between them<sup>3</sup>.
- Scenario 2: CA countries keep tariffs among them at the current level, but abolish import tariffs with the USA. The USA also abolishes import tariffs with each of CA

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<sup>2</sup> The reader can consult the <https://www.gtap.agecon.purdue.edu/> web page for complete information.

<sup>3</sup> Non-tariff barriers (NTBs) are not considered at the present study due to difficulty in its quantification.

countries. This scenario tries to reflect the unilateral negotiations carried out by each of CA countries with USA.

### **3. SCENARIO RESULTS AND DISCUSSION**

#### **3.1. Scenario 1**

##### **3.1.1. Overview**

It is true that CA maintains an extensive export and import relationship with the United States (39% of their aggregate exports). However, the recent growth of the intra-regional trade has been especially remarkable and represents today about 30% of the aggregate local exports. Moreover, some authors (Duran Lima, Terra and Zalcicever (2011), Cordero (2014), etc.) emphasize that such intra-regional trade generates more internal added value than the inter-regional one, which may allow for a higher local welfare and a more favorable external balance for CA.

In order to confirm or reject such expectations, we want to compare the effects of deepening the Central American Integration System (Scenario 1) versus deepening the CAFTA agreements with the United States (Scenario 2). The results of the first simulation will be presented in the following subsection.

##### **3.1.2. Domestic Production and International Trade**

The evaluation of the intra-regional integration within the 6 Central American countries is carried out assuming the elimination of all the intra-regional tariff barriers among them, while keeping the existing tariffs in 2011 between CA and the rest of the world.

In each of our scenarios, in order to capture the main allocative and welfare effects of the evaluated trade agreement, our simulations are performed using the standard GTAP closure. This closure considers perfect intersectoral mobility of labor and capital, together with imperfect mobility of land and natural resources. Meanwhile, the national aggregate supply of each factor of production is exogenous and constant for all regions.

The protection structure inside the CA region shows today distinctive geographical features that are worth mentioning and can be observed in Table 2. In particular, the three countries whose productive structure is most dependent on agrarian goods (Guatemala, Honduras and Nicaragua) are quite protected from the competing primary goods produced in neighboring countries. Moreover, El Salvador is clearly the least protective and the most liberal country with respect to its CA neighbors. Finally, Costa Rica and Panama are heavily

protected by nontariff barriers against both manufacturing goods and, even more intensely, against selected primary products like Other Meat or Sugar.

These considerations will allow us to evaluate the size of the shock for each country, which accounts for the direction and magnitude of our change in trade policy. However, in order to trace back the results to the values of our parameters, it is also important to know the sectoral elasticities of substitution in demand (see Table 3); between primary factors; between domestic and imported goods and among imports from different sources. Therefore, the sectors affected by larger tariff reductions and higher elasticities of substitution will be those generating the highest variations in domestic production, imports and welfare. In particular, our experiments evaluate the impact of the liberalization agreement on the 57 productive sectors contained by our GTAP database. However, for our description of the results provided below we have selected 10 of them, on the basis of their relevance with respect to regional output, their tradability and their significance in terms of high initial tariff barriers. They are, specifically: Other Meat, Sugar, Other Food, Textiles, Wearing and Apparel, Paper products, Petroleum and Coke, Chemical and Rubber, Iron and Steele and Electronic Equipment.

Since the most significant intra-regional tariff rates affect the primary sectors, the elimination of internal tariff barriers within CA tends to reduce the productive duplicities in important agricultural goods. The demand for agricultural inputs becomes then less significant in these countries, which will damage mainly landowners. There such transformation will release productive resources to focus on more technologically intensive products (see the outcome of our simulations on Table 4). In other words, the countries that showed a most intense intra-regional protection of agricultural production, like Panamá or Costa Rica, will receive much cheaper imports of Sugar from the rest of the region, for instance. Simultaneously, Costa Rica, Guatemala and Honduras will expand their manufacturing basis.

**Table 2. Average import tariffs with Central American countries (%) (2011)**

	<b>Guatemala</b>	<b>Honduras</b>	<b>El Salvador</b>	<b>Nicaragua</b>	<b>Costa Rica</b>	<b>Panamá</b>	<b>USA</b>
<b>Other Meat</b>	2.54	36.84	6.02	3.51	26.13	20.45	0
<b>Sugar</b>	3.42	3.57	0	7.42	11.8	19.5	9.24
<b>Other Food</b>	2.19	3.27	0.002	2.22	10.63	10.01	0.25
<b>Textiles</b>	2.61	3.84	2.25	4.02	10.04	5.53	1.49
<b>Wearing and Apparel</b>	5	5.92	2.85	5.77	13.93	12.46	0.003
<b>Paper</b>	0.98	2.14	0.13	1.5	7.11	9.11	0
<b>Petroleum and Coke</b>	0.84	1.5	0.27	0.57	3.6	4.68	0
<b>Chemical and Rubber</b>	0.45	0.62	0.002	1.17	5.66	2.73	0
<b>Iron and Steel</b>	0.33	1.6	0	0.36	5.84	3.55	0
<b>Electronic Equipment</b>	2.5	2.24	0	1.9	0.58	6.47	0

Source: GTAP 9.0 Database

**Table 3. Elasticities of Substitution**

	<b>ESUBVA (Added Value)</b>	<b>ESUBD (Demand)</b>	<b>ESUBM (Imports)</b>
<b>Other Meat</b>	1.12	4.4	8.8
<b>Sugar</b>	1.12	2.7	5.4
<b>Other Food</b>	1.12	2	4
<b>Textiles</b>	1.26	3.75	7.5
<b>Wearing and Apparel</b>	1.26	3.7	7.4
<b>Paper</b>	1.26	2.95	5.9
<b>Petroleum and Coke</b>	1.26	2.1	4.2
<b>Chemical</b>	1.26	3.3	6.6
<b>Iron and Steel</b>	1.26	2.95	5.9
<b>Electronic</b>	1.26	4.4	8.8

Source: GTAP 9.0 Model

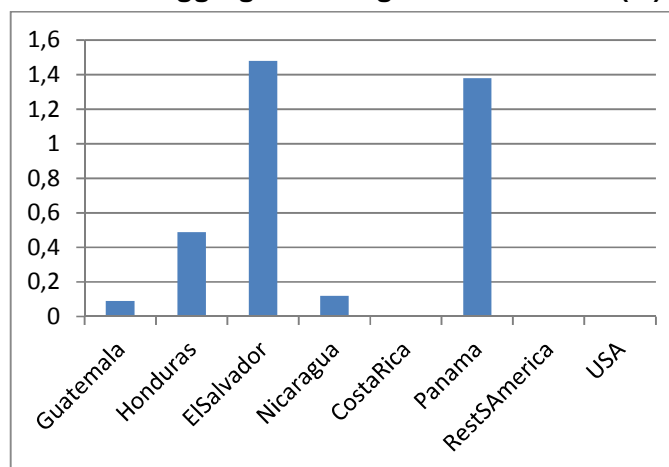
**Table 4. Sectoral Output Variations after the Shock (%) (Scenario 1).**

	<b>Guatemala</b>	<b>Honduras</b>	<b>El Salvador</b>	<b>Nicaragua</b>	<b>Costa Rica</b>	<b>Panama</b>	<b>USA</b>
<b>Other Meat</b>	-0.86	-48.7	2.58	-0.38	1.25	18.29	-0.05
<b>Sugar</b>	-0.8	0.38	-3.49	-0.21	-0.24	-3.14	0.04
<b>Other Food</b>	-0.09	-1.58	5.3	0.52	0.17	-2.97	-0.01
<b>Textiles</b>	-1.44	2.89	-3.85	-0.67	-1.7	4.16	0.01
<b>Wearing &amp; Apparel</b>	-0.85	1.72	-10.67	-0.64	-0.96	4.28	0.01
<b>Paper</b>	2.58	4.04	1.1	-0.75	0.6	-1.58	0
<b>Petroleum and Coke</b>	0.49	1.24	-0.83	0.16	1.2	-0.99	0
<b>Chemical Rubber</b>	1.48	2.17	-1.88	-0.02	0.81	-4.35	0.01
<b>Iron and Steel</b>	4.86	6.44	-4.06	5.21	1.69	-2.15	0
<b>Electronic Equipment</b>	-1	-0.15	-7.85	-0.72	-0.14	-4.04	0.01

Source: Own elaboration after running our GTAP simulation.



**Figure 1. Welfare Aggregate Changes in Scenario 1 (%).**



Source: Own elaboration after running our GTAP simulation.

## **3.2 Scenario 2**

### **3.2.1. Overview**

A thorough inspection of Table 5 reveals that, still in 2011, there exists a substantial level of CA protection against the US imports. On the other hand, as we can observe in the last column of Table 2, with the exception of a few sectors like Sugar and Milk, the North American foreign trade is much more liberalized in regards to the imports from CA, on the basis of previous unilateral US concessions to the region, under the Caribbean Basin Initiative (CBI). This fact immediately implies that the USA has now much to gain in terms of accessibility to the regional market, whereas the potential benefits for the Central American countries are more limited.

As a result of this new scenario, which postulates a deepening of the CAFTA agreements, there will appear some new productive chains between North America and the CA region. Nevertheless, they will leave a meager amount of added value in the latter area due to the limited linkages within the local CA productive structure. Although further analysis is needed in this respect in order to derive conclusions, it seems that these new USA-CA productive linkages will not affect key sectors within the Central American environment.

**Table 5. CA Import Tariffs with the USA (%)**

	<b>Guatemala</b>	<b>Honduras</b>	<b>El Salvador</b>	<b>Nicaragua</b>	<b>Costa Rica</b>	<b>Panamá</b>
<b>Other Meat</b>	6.823	18.638	34.167	23.214	38.729	29.551
<b>Sugar</b>	6.07	9.715	8.315	14.791	24.652	36.24
<b>Other Food</b>	1.998	4.639	2.459	2.47	13.082	12.107
<b>Textiles</b>	1.449	0.024	0.005	0.457	7.938	10.039
<b>Wearing and Apparel</b>	0.147	0.093	0.028	0.392	13.855	11.733
<b>Paper</b>	0.582	2.448	0.839	1.334	2.404	6.696
<b>Petroleum and Coke</b>	0	2.039	0.98	0.879	4.111	7.716
<b>Chemical and Rubber</b>	0.321	1.391	0.302	0.301	2.872	3.701
<b>Iron and Steel</b>	0.622	0.914	1.496	0.361	1.864	5.272
<b>Electronic Equipment</b>	0	0.323	0.071	0.352	0.088	6.311

Source: GTAP 9.0 database.

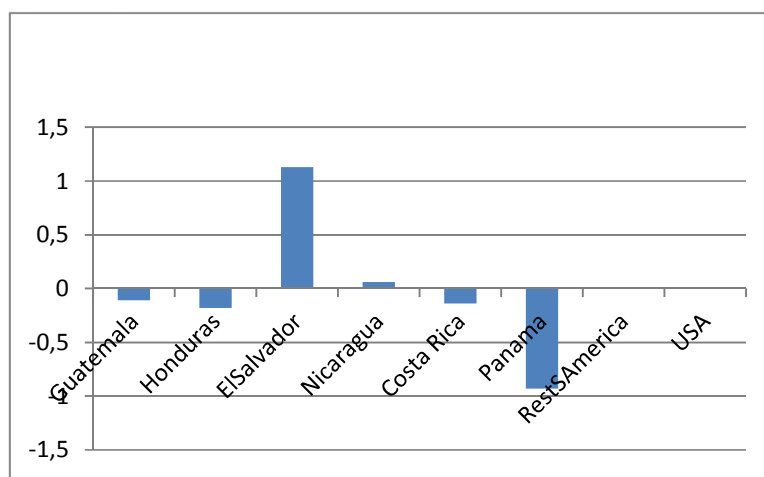
### 3.2.2. Impact on domestic production and international trade

The most apparent result from this scenario is an intense concentration of the textile industry in El Salvador, which becomes a maquila-based export platform directly linked to the USA. The Americans also benefit from the deal, since their wearing and apparel sector will expand considerably as well.

China will suffer from these new and intense links between Textiles and Wearing and Apparel on both sides of the Caribbean, since the Asian country competes with CA to provide the US market with related materials. All this happens to the extent of causing the partial deindustrialization of the rest of the CA region, by diverting resources from their original productive uses. Practically all the rest of the Salvadoran economic structure contracts due to this change; to the extent that the Chemical and Rubber and Electronic Equipment sectors are captured by Panama at the expense of El Salvador.

Apart from the latter country, only Nicaragua will gain slightly in welfare terms from such transformation. It is a fact that all countries, including El Salvador, are better off under the first scenario than under the second. On the other hand, the six Central American countries will lose their relative competitiveness in the Other Meat sector, which favors again the United States, in absolute terms the great winner from Scenario 2. However, the Sugar sector will be able to expand considerably in the six CA countries, especially in Panama once the US import tariff barriers are removed.

**Figure 2. Welfare Aggregate Changes in Scenario 2 (%).**



Source: Own elaboration after running our GTAP simulation.

Additional emphasis should be made on the creation of new US exports of Petroleum and Coke to Panama, whose refineries will apparently re-export the processed oil to the USA. These new links, when considered as a whole, do not seem to promote substantially the economic development of Panama and the Central American region, given the low added value created within the latter.

**Table 6. Sectoral Output Variations after the shock (%) (Scenario 2)**

	<b>Guatemala</b>	<b>Honduras</b>	<b>El Salvador</b>	<b>Nicaragua</b>	<b>Costa Rica</b>	<b>Panama</b>	<b>USA</b>
<b>Other meat</b>	-3.35	-9.84	-23.31	-6.25	-12.21	-8.53	0.32
<b>Sugar</b>	4.35	2.79	2.79	5.7	7.39	42.01	-0.47
<b>Other Food</b>	-0.15	0.48	-3.86	0.98	-0.6	1.18	0.05
<b>Textiles</b>	1.24	0.27	22.83	-0.77	-1.29	1.27	-0.01
<b>Wearing &amp; Apparel</b>	0.88	0.13	-8.79	-0.17	-0.46	-0.32	0.14
<b>Paper</b>	-0.14	0.56	-3.9	-0.2	-0.84	-1.03	0
<b>Petroleum and Coke</b>	-0.13	-1.22	-2.52	-0.67	-4	2.2	0.12
<b>Chemical Rubber</b>	0.23	0.55	-4.72	-0.09	-0.11	5.68	-0.04
<b>Iron and Steel</b>	0.27	3.7	-6.37	-0.01	2	10.87	-0.03
<b>Electronic Equipment</b>	0.86	-0.13	-7.09	-0.67	1.24	7.95	-0.05

Source: Own elaboration after running our GTAP simulation.

#### 4. CONCLUSIONS

In the present paper we have made an initial attempt to compare the consequences of an intra-regional liberalization (consisting in the elimination of the pending barriers in the Customs Union agreements)) versus an inter-regional trade liberalization (consisting in a deepening of the CAFTA agreement) for Central America. Our results imply that the intra-regional liberalization is preferred by the regional household in the 6 Central American countries, whereas the alternative is only preferred by the representative agent from the United States. The aggregate, local creation of added value is especially intense under the intra-regional liberalization, though the general tendency masks important differences in the results by sector.

It is important to notice that, under both scenarios, El Salvador is the country that stands more to gain from trade liberalization. In any intra-regional liberalization process, since El Salvador already applies very low trade barriers to imports from the rest of CA, it will face only new possibilities from higher exports to the rest of the region. On the other hand, under an inter-regional liberalization process, El Salvador will be the preferred location for the setup of maquila-based export platforms connected to the USA. The reason for this fact is also related to this country's openness to international trade within CA, which facilitates the access to productive inputs and to regional markets for Textiles and Wearing and Apparel. However, the effects of this scenario are negative for the rest of the productive sectors in El Salvador, which suggests an increased dependence on the maquila platforms.

These results need to be qualified, since our preliminary approach does not contemplate the possibilities of FDI or capital accumulation. Therefore, we should probably understand our results as an approximation to the short run impact of these reforms. Nevertheless, they are potentially interesting for the current political decision making in CA, since they could help establish some negotiation priorities in the institutional agenda. Although there are important sectoral benefits from further trade liberalization vis à vis the United States, particularly in sectors like Sugar, Textiles, Chemical and Rubber or Iron and Steel, the resulting productive chains seem to generate less local added value and factor remunerations for the CA countries.

These results would confirm the hypothesis that the impact of CAFTA is limited in terms of development. It would also confirm the convenience of a combined strategy on extra-regional and intra-regional agreements. These results are encouraging to explore the potential of intra-regional trade; the culmination of the negotiations with Panama; the removal of the restrictions to free trade between Costa Rica and CA partners; and also the

elimination of the exceptions to free trade regime in those products included in the Annex "A" of the treaty.

Since the most significant intra-regional tariff rates affect the primary sectors, the elimination of internal tariff barriers within CA tends to reduce the productive duplicities in important agricultural goods. The demand for agricultural inputs becomes then less significant in these countries, which apparently releases productive resources to focus on more technologically intensive products. The confirmation of these and other related consequences seems to be a promising area for further research, once a more detailed modelling approach is applied to this issue.

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