II Trade Liberalization of CSG and Other Specialized Products: Comparative Analysis Using SMART

II.I Simulations Done Using Smart Analysis (Within Wits) For Working Out The Liberalization Impact Of CSG Trade Of Ecuador With Mercosur And China, Japan, Us And Eu In 2010

The study uses SMART- Single Market Partial Equilibrium Simulation Tool (available within WITS Database) to understand the liberalization effects of tariffs (zero tariffs) on the importer.

Rationale for Market Access Analysis

Despite successive rounds of multilateral, regional and unilateral trade liberalization, some trade barriers (including tariffs) remain highly restrictive in many (both developed and developing) countries.

For any government, it is crucial to be able to assess or to pre-empt the impact of different trade policy options. Market access analysis is a useful tool that can be used to anticipate the likely economic effects of various policy alternatives.

Impact of domestic trade reforms. For political economy or social purposes, it is often important to determine the distribution of the potential gains and losses from any contemplated policy changes. This will assist in anticipating any adjustment costs associated with reform implementation.

Impact of foreign trade liberalization. For instance, when preparing for trade negotiations, market access analysis helps identify the sensitive sectors where negotiating efforts should be focused. Also, it could be useful in the formation of negotiating coalitions in multilateral/regional negotiations.

The market access analysis tool included in the WITS package allows the researcher to investigate the impact of unilateral/ preferential/multilateral trade reforms at home or abroad on various variables including: Trade flows (import, exports, trade creation and trade diversion), world prices, tariff revenue and economic welfare.

The total trade effects are worked out by adding up the **price effects** (terms of trade effect) and quantity effects of trade by adding the trade creation and trade diversion effects. In addition the total welfare effect, consumer surplus effect and revenue effects of tariff reduction is also worked out.

For understanding the impact of tariff cuts, we discuss the opposite scenario of the impact on the economy if tariffs are imposed by the ´Small Country´ and another by one ´Large Country´.

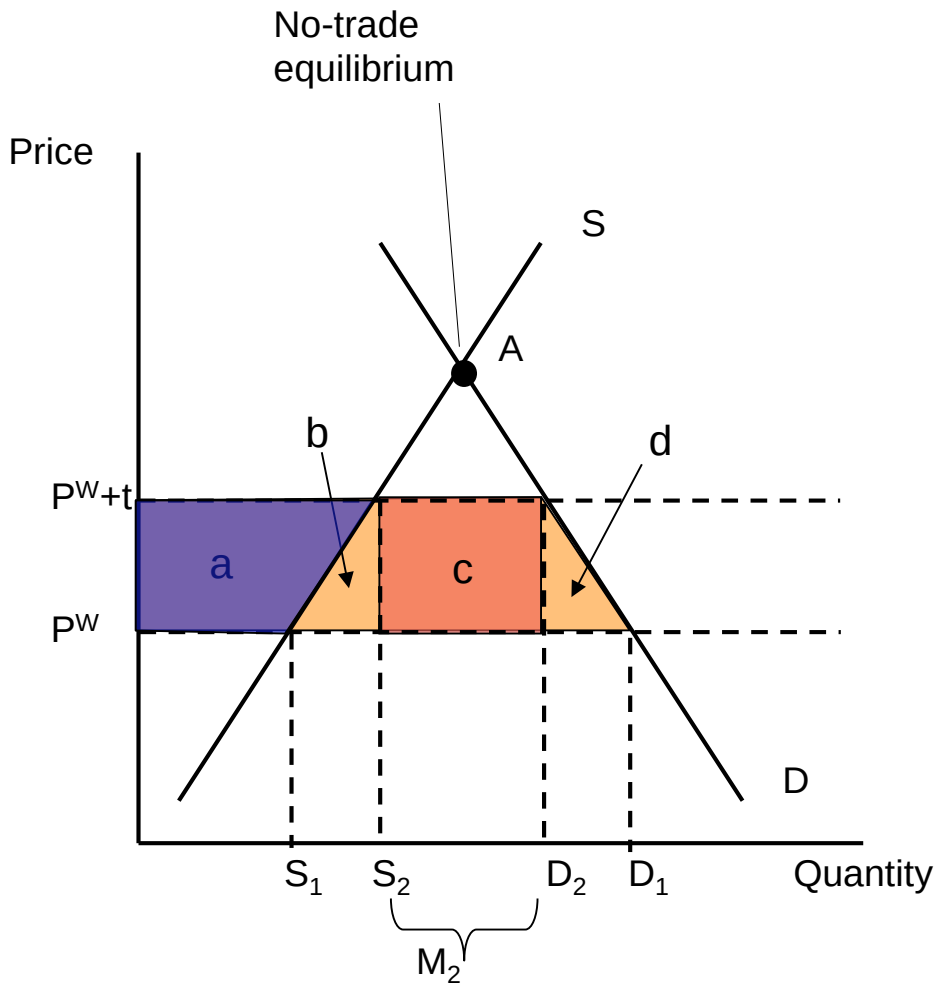
Small Country Case: A Country is small enough to have any impact on terms of trade.

The tariff increases the price from *P W* to *P W + t in the figure below*. As a result, consumer surplus falls by *(a + b + c + d)*. Producer surplus rises by area *a*, and government revenue increases by the area *c*. Therefore, the net loss in welfare, the deadweight loss to Home, is *(b + d)*, which is measured by the two triangles *b* and *d* in figure below.

Overall Effect of the Tariff on Welfare

The overall impact of the tariff in the small country can be summarized as follows:

Fall in consumer surplus	*-(a+b+c+d)*
Rise in producer surplus	*+a*
Rise in government revenue	*+c*
Net effect on Home welfare	***-(b+d)***



Therefore, any reductions in tariffs for small country will reduce production and consumption distortions. It would mean that consumer surplus will increase, producer surplus will decrease and welfare will improve of the small economy.

Large Country Case (see figure below): The Country is large enough to have impact on prices (terms of trade). The terms of trade improves for the tariff imposing country. The net effect on the welfare of the importing country is ambiguous.

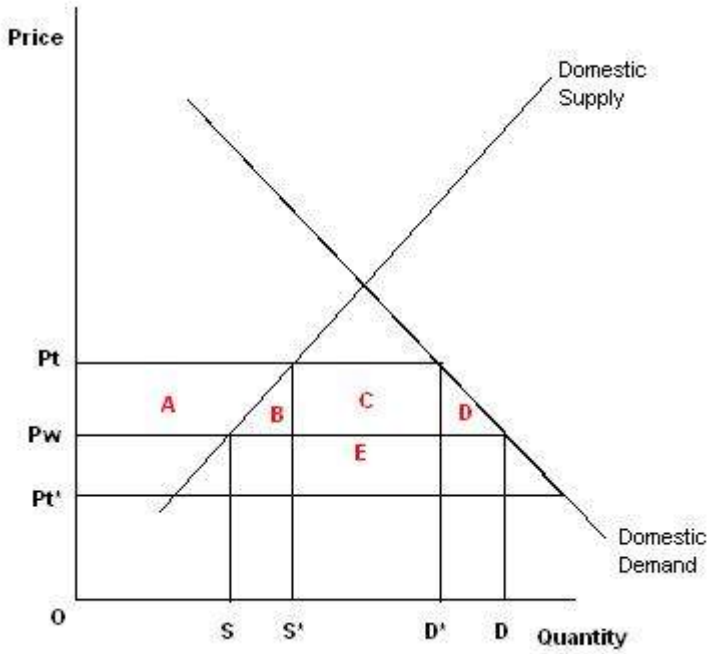
Loss in consumer surplus-(A+B+C+D)

Gain in Producer Surplus +A

Government Revenue + C+E

Net Effect of Tariff = E-(B+D)

E is the terms of trade gain and B+D are the distortions in the economy. Hence, there are optimal tariffs which maximizes welfare (E-(B+D). The formula for the optimal tariff works out is the reciprocal of the elasticity of the foreign supply curve (upward sloping for large importing country). Reduction in tariffs for large country will effect terms of trade and reduction in distortions due to increase in consumer surplus and reduction in producer surplus and reduction in tariff revenue for the Government.



Trade Creation & Trade Diversion and Total Trade Effects in SMART (Quantity Effects of Tariff Liberalization)

The explanatory table below shows the cost to the United States of purchasing an automobile part from various source countries, with and without tariffs. The numbers illustrate the idea of trade diversion, under which the United States could switch from buying the auto part from Asia before NAFTA (for $20.90 with a 10% tariff) to Mexico after NAFTA (for $20 with zero tariff). While the United States gains 90¢ on each unit from paying a lower price, it also loses $1.90 in tariff revenue from not purchasing from Asia. An initial tariff of 20% going down to zero levels will show that trade is created with Mexico. Consumers gain in US because they are now getting cars from Mexico at US $ 20 and at the same time the Mexican Producers gain. Trade creation is always welfare improving while trade diversion most of times are welfare reducing (except when Mexicans can put extra effort in providing all the car requirements of the US).

U.S. Tariff

	0%	10%	20%
From Mexico, before NAFTA	$20	$22	$24
From Asia, before NAFTA	$19	$20.90	$22.80
From Mexico, after NAFTA	$20	$20	$20
From Asia, after NAFTA	$19	$20.90	$22.80
From the United States	$22	$22	$22

Source: Feenstra and Taylor, 2008

Trade creation (in SMART model) is defined as the direct increase in imports following a reduction on the tariff imposed on good *g* from country *c*. If the tariff reduction on good *g* from country *c* is a preferential tariff reduction (i.e. it does not apply to other countries, *c*), then imports of good *g* from country *c* are further going to increase due to the substitution away from imports of good *g* from other countries that becomes relatively more expensive. This is the definition of trade diversion in the SMART model. For exporting countries, **total trade effect** is made of trade diversion and trade creation.

Equations for Trade Creation and Trade Diversion are given in Appendix Table VI. The values will depend on import demand elasticity, substitution elasticity and supply elasticity.

Simulation I: Liberalization of CSG Trade with MERCOSUR countries in 2010

The first simulation is the liberalization impacts of zero tariffs on imports of CSG from the rest of the nine MERCOSUR countries. The following are the outputs of the SMART analysis (within WITS).

The **Detailed Data report** is to check the raw data used for smart simulation just to make sure the dataset corresponds to expectations.

The **Export View report** shows the impact of the tariff reform on partner's exports to the considered market. It displays the pre value of exports (before the tariff change), the post value of exports (after the tariff change) to the considered market as well as the net value between the two, considered as the change in exports revenue

The **Market View report** returns all three types of effects affecting the market (trade value, tariff revenue and welfare change) by individual product code and for all products as one aggregate.

The **Revenue Impact report** returns individual results on the market's revenue by product code and for all products as one aggregate. The report displays the tariff revenue change between the pre and post tariff cut situation as well as the trade total effects.

The **Trade Creation Effect report** returns individual results on Trade Total effect by product code/partner combination and for all products as one aggregate. This report also shows the trade diversion effect among partners and trade creation effect for both the market and its partners. In SMART, beneficiaries of the tariff reduction enjoy both positive diversion effect and positive creation effect while all other partners will suffer from negative diversion effect and no trade creation effect

The **Welfare Effect report** returns individual results on the market's welfare by product code and for all products as one aggregate. The report displays the Total Trade Effect, which is defined as the sum of Trade Diversion effect, Trade Creation Effect and Price Effect as well as the Welfare Effect defined as the benefits consumers in the importing country derive from the lower domestic prices after the removal or reduction of tariffs.

In the SMART modeling framework, a change in trade policy (say preferential tariff liberalization) affects not only the price index/level of the composite good but also the relative prices of the different varieties. Despite the export supply elasticity,

the import demand elasticity and the substitution elasticity[9], it will lead to changes in the chosen aggregate level of spending on that good as well as to changes in the composition of the sourcing of that good. Both channels affect bilateral trade flows.

As mentioned above SMART reports the results of any trade policy shock on a number of variables. In particular, it reports the effects on trade flows (i.e. imports from the different sources). It also decomposes those trade effects in trade creation and trade diversion. Trade creation is defined as the direct increase in imports following a reduction on the tariff imposed on good *g* from country *c*. If the tariff reduction on good *g* from country *c* is a preferential tariff reduction (i.e. it does not apply to other countries, *c*), then imports of good *g* from country *c* are further going to increase due to the substitution away from imports of good *g* from other countries that becomes relatively more expensive. This is the definition of trade diversion in the SMART model.

9 Import Demand Elasticity: Values used by default in SMART have been empirically estimated for each country and every HS 6-digit product. For more details see Hiau Looi Kee& Alessandro Nicita& Marcelo Olarreaga, 2008. "Import Demand Elasticitiesand Trade Distortions," The Review of Economics and Statistics, MIT Press, vol. 90(4), pages 666-682, 07. Substitution Elasticity: Is the substitution elasticity value between partners. Substitution elasticity entails a product by product simulation, which is based on the assumption that any product is independent of another product. SMART uses 1.5 as the default value. However, one can change this default value. It is recommended to keep it at 1.5 for industrial products but to increase it for primary goods. The reason being that the higher the substitution elasticity, the higher the substitutability of the same product from different suppliers. However, the more sophisticated a product is, the higher its rigidity of being substitutable. Supply Elasticity: Is the export supply elasticity value. By default, SMART uses 99 for an infinite elasticity for all products and partners. The reason being that we are dealing with a single-country simulation tool, so one country is too small compared to the rest of the world in order to have an impact on the price level. However, if you consider imports of a certain product from a bigger entity (like the European Union e.g.) to be relatively high and have a real impact on the world price level, you can lower the supply elasticity

We summarize the results in Tables I through III **(Simulation I**). Table I gives the total trade effect (sum of price-terms of trade effect, and quantity effects-trade creation and trade diversion effects) of tariff liberalization undertaken by Ecuador in context of MERCOSUR countries (simulations) in 2010. Price effects in these simulations are zero because we assume Ecuador to be the 'small country'. Colombia gains the most in terms of total trade effects followed by Argentina and Peru. Chile has negative total trade effects because Chile already has a free trade policy with most of its Latin American Partners. Total trade effect for the US is negative and relatively higher as there is trade diversion from US to MERCOSUR countries for trade in CSG goods. For saving space the trade diversion impact on all countries is not shown. The total trade effect on the World is 3111.64 1000 US $.

Table I: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization with MERCOSUR Countries only for CSG Imports for Simulations Undertaken by Ecuador in 2010

Country	TradeTotalEffect in 1000 USD	TradeCreation Effect in 1000 USD	TradeDiversion Effect in 1000 USD	OldSimple DutyRate	NewSimple DutyRate
Argentina	283.918	163.449	120.469	3.05	0.00
Bolivia	2.521	1.301	1.220	1.90	0.00
Brazil	407.221	266.318	140.903	3.10	0.00
Chile	-35.802	0.000	-35.802	0.00	0.00
Colombia	3,856.045	2,526.573	1,329.472	8.30	0.00
Paraguay	0.152	0.076	0.076	3.39	0.00
Venezuela	73.243	35.232	38.011	9.33	0.00
Uruguay	0.506	0.285	0.222	1.52	0.00
Peru	224.942	118.401	106.541	7.26	0.00
UnitedStates	-637.852	0.000	-637.852	7.01	7.01
Spain	-74.646	0.000	-74.646	7.85	7.85
UnitedKingdom	-16.162	0.000	-16.162	6.29	6.29
Mexico	-183.279	0.000	-183.279	5.97	5.97
Italy	-110.727	0.000	-110.727	7.27	7.27
Germany	-106.627	0.000	-106.627	7.61	7.61
China	-305.511	0.000	-305.511	6.73	6.73
India	-12.172	0.000	-12.172	6.15	6.15
World	3,111.634	3,111.634	0.000	6.44	5.18

Source: Author´s work in WITS. Price effects are zero as we assume that Ecuador is ´small country´

SMART also calculates the impact of the trade policy change on tariff revenue, consumer surplus and welfare.

A tariff revenue change on a given import flow is computed simply as the final Ad Valorem tariff multiplied by the final import value minus the initial Ad Valorem tariff multiplied by the initial import value.

It should be noted that tariff revenue change is made of two opposite effects:

1. A tariff revenue loss at constant import value, which corresponds to a transfer from the State to consumers and is equal to Q0*(t0-t1).
2. A tariff revenue gain through the increase in imports which enlarges the tax base and is equal to (Q1-Q0)*t.

Using SMART internal import demand elasticity values, the tariff liberalization simulation returns a negative tariff revenue change (that is revenue gain from increased imports not enough to dominate revenue loss due to tariff decrease) in most cases.

Table II below shows that the welfare effects of tariff liberalization for CSG products. This works out to be 351.76 1000 US $ while the total imports before tariff reduction is 252,746.147, 1000 US$. The revenue effect works out to be -2,276.697, 1000 US $. The total import change is 3111.634, 1000 US$ due to reduction in tariffs on imports of CSG from MERCOSUR.

Table II: Revenue and Welfare Effects of CSG Liberalization undertaken by Ecuador (Simulations Only) with MERCOSUR Countries in 2010

Product Code	Welfare in 1000 USD	Revenue Effect in 1000 USD	TradeTotal Effect in 1000 USD	TradeValue in 1000 USD
csgcomb	351.763	-2,276.697	3,111.634	252,746.147

Source: Author´s work in WITS

Table III below shows the tariff change in revenue of -3029.456 while the consumer surplus due to reduction in tariffs on CSG coming from MERCOSUR countries. This work out to be 180.812, 1000 US dollars.

Table III: Simulation Results: Consumer Surplus and Tariff Change in Revenue for Ecuador after its liberalization with MERCOSUR in Trade in CSG Products

ImportsBefore in 1000 USD	ImportChange	TariffRevenue in 1000 USD	Tariff New Revenue in 1000 USD	Tariff Change In Revenue in 1000 USD	ConsumerSurplus in 1000 USD
252,746.147	3.111.634	16,282.010	13,252.550	-3,029.456	180.812

Source: Author´s work in WITS

Table IV below shows the trade creation, trade diversion and total trade effects of liberalization of CSG trade with the main suppliers of CSG goods, i.e., the US, Japan and China **(Simulation 2).** The highest total trade effect occurs in the US of the tune of 8023.8,1000 US$ followed by China worth 5338,1000US$ while the country which has the highest negative total trade effect is Columbia (-787.63, 1000 US$). Mexico has total negative trade effect of -379.09 ,1000 US&

while Germany is the most affected country in Europe of the tune of -369.29,1000US$. The total import price change with all countries is 9702.19,1000 US$

Table IV: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization of CSG Trade with China, Japan and the US for Simulations Undertaken by Ecuador in in 2010

PartnerName	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate
China	5,338.083	3,870.511	1,467.572	6.73	0.00
Japan	407.789	261.120	146.669	5.10	0.00
UnitedStates	8,023.866	5,570.565	2,453.301	7.01	0.00
Argentina	-149.808	0.000	-149.808	3.05	3.05
Bolivia	-0.777	0.000	-0.777	1.90	1.90
Brazil	-288.973	0.000	-288.973	3.10	3.10
Chile	-106.380	0.000	-106.380	0.00	0.00
Colombia	-787.637	0.000	-787.637	8.30	8.30
Peru	-59.719	0.000	-59.719	7.26	7.26
Paraguay	-0.140	0.000	-0.140	3.39	3.39
Uruguay	-0.450	0.000	-0.450	1.52	1.52
Venezuela	-26.459	0.000	-26.459	9.33	9.33
Canada	-124.123	0.000	-124.123	6.50	6.50
Germany	-369.291	0.000	-369.291	7.61	7.61
Italy	-317.928	0.000	-317.928	7.27	7.27
Mexico	-379.093	0.000	-379.093	5.97	5.97
Spain	-292.742	0.000	-292.742	7.85	7.85
Taiwan, China	-112.799	0.000	-112.799	6.53	6.53
World	9,702.196	9,702.196	0.000	6.44	2.85

SOURCE: Author´s work in WITS

Table V below gives the revenue and the welfare effects of tariff liberalization undertaken by Ecuador (simulations only) with respect to China, Japan and the US. The Welfare effect works out to be 786.20,1000US$ for Ecuador. The figure is higher (more than double) with what it were when Ecuador liberalized its trade of CSG products with the MERCOSUR countries.

Table V: Revenue and Welfare Effects of CSG Liberalization undertaken by Ecuador (Simulations Only) with China, Japan and the US in 2010

Trade Total Effect in 1000 USD	Welfare in 1000 USD	Revenue Effect in 1000 USD	Trade Value in 1000 USD
9,702.196	786.220	-7,274.732	252,746.147

Source: Author´s work in WITS

Table VI shows that consumer surplus effect is higher than when Ecuador liberalized its trade of CSG with MERCOSUR countries.

Table VI: Simulation Results: Consumer Surplus and Tariff Change in Revenue for Ecuador after its liberalization China, Japan and the US in Trade in CSG Products

ImportChange	Tariff Revenue in 1000 USD	Tariff New Revenue in 1000 USD	Tariff Change In Revenue in 1000 USD	Consumer Surplus in 1000 USD
9.702.196	16,282.010	7,491.704	-8,790.301	450.986

Source: Author´s work in WITS

Table VII indicates that Germany, Italy and Spain are the greatest gainers due to liberalization of Ecuadorian trade with EU27**(Simulation 3)**. The total trade effect for Germany works out to be 2686.755, 1000 US$ (export surge), followed by Italy of the tune of 2035.086,1000 US$ followed by Spain of the tune of 1362.69,1000 US $. United States, Columbia and China are the countries who have the greatest trade diversion effects because of preferences given by Ecuador to EU27 countries. The total trade effect (total import surge with respect to all countries) works out to be 5601.571,1000 US $

Table VII: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization of Ecuadorian CSG Trade with the EU 27 for Simulations Undertaken by Ecuador in in 2010.

Partner Name	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate
Sweden	286.873	179.537	107.336	6.06	0.00
Spain	1,362.694	880.241	482.453	7.85	0.00
Netherlands	472.833	321.712	151.121	6.60	0.00
Italy	2,035.086	1,277.382	757.704	7.27	0.00
Germany	2,686.755	2,089.803	596.952	7.61	0.00
Argentina	-75.200	0.000	-75.200	3.05	3.05
Australia	-7.953	0.000	-7.953	6.29	6.29
Austria	45.128	21.019	24.109	4.92	0.00
Belgium	396.383	277.261	119.121	7.11	0.00
Bolivia	-0.645	0.000	-0.645	1.90	1.90
Brazil	-110.155	0.000	-110.155	3.10	3.10
Bulgaria	0.020	0.010	0.009	3.13	0.00
Canada	-31.145	0.000	-31.145	6.50	6.50
Chile	-52.725	0.000	-52.725	0.00	0.00
China	-475.419	0.000	-475.419	6.73	6.73
Colombia	-319.996	0.000	-319.996	8.30	8.30
UnitedKingdom	362.098	241.962	120.136	6.29	0.00
UnitedStates	-928.260	0.000	-928.260	7.01	7.01
Uruguay	-0.635	0.000	-0.635	1.52	1.52
Venezuela	-7.869	0.000	-7.869	9.33	9.33
World	5,601.571	5,601.571	0.000	6.44	4.65

Source: Author´s work in WITS

Table VIII shows the consumer surplus effects of liberalization equivalent to 310.696,1000 US$, an amount less than when Ecuador liberalized CSG trade with China, Japan and the US, but more than when Ecuador liberalized its trade with MERCOSUR countries

Table VIII: Consumer Surplus and Tariff Change in Revenue Effects of Liberalization of Ecuadorian CSG Trade with EU27 Countries

Imports Before in 1000 USD	Import Change	Tariff Revenue in 1000 USD	Tariff New Revenue in 1000 USD	Tariff Change In Revenue in 1000 USD	Consumer Surplus in 1000 USD
252,746.147	5.601.571	16,282.010	12,016.081	-4,265.925	310.696

Source: Author´s work in WITS

Table IX shows the welfare effects of liberalizing Ecuadorian CSG trade with EU27 Countries. The amount works out to be 534.350,1000 US$, less than when Ecuador liberalized its trade with China, Japan and the US, but more than when it's liberalized its trade with Mercosur Countries

Table IX: Welfare and Total Trade Effect of Liberalizing Ecuadorian CSG Trade with EU27 Countries

Product Code	Trade Total Effect in 1000 USD	Welfare in 1000 USD	New Weighted Rate	Old Weighted Rate
csgcomb	5,601.571	534.350	4.65	6.44

Source: Author´s work in WITS

In Summary, SMART Analysis helps us to establish that it is better and more beneficial to liberalize Ecuadorian CSG trade with the Japan, the US and the China, followed by EU 27, the main suppliers (exporters) of CSG products rather than MERCOSUR countries

1.2 Smart Analysis For Trade In Specialized Products Of Ecuador

The first simulations are about Liberalization of 20 Products (in which Ecuador had Comparative Advantage) with MERCOSUR countries in 2010. The Table X below shows the trade creation, trade diversion and total trade effect of reducing tariffs on 20 specialized products with MERCOSUR Countries only. The major gainers in Latin American region in terms of total trade effect are Peru (62,438.419, 1000 US$), followed by Columbia (28,396.772,1000 US$) and Argentina (26,132.059,1000 US$), followed by Bolivia, Venezuela, Brazil and Uruguay, Paraguay and Chile have negative total trade effect. Chile imposes very low tariffs for products originating in Latin America. Any further tariff liberalization in Latin America makes goods cheaper of other Latin American countries. Therefore, in Chile one sees higher trade diversion than trade creation leading to negative total trade effect. The total import change for all countries in the Worlds is 110,484.049,1000 US $. United States, Mexico and Spain, among others are the most affected because of substantial trade diversion effect.

Table X: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization of Ecuadorian Trade in 20 Specialized Products with the MERCOSUR countries for Simulations Undertaken by Ecuador in in 2010.

Partner Name	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate
World	110,484.049	110,484.050	0.000	14.18	9.07
Argentina	26,132.059	18,054.437	8,077.621	9.74	0.00
Bolivia	8,837.414	8,198.047	639.367	11.24	0.00
Brazil	2,114.354	1,439.326	675.028	10.23	0.00
Chile	-4,417.713	838.672	-5,256.386	0.84	0.00
Paraguay	-4,272.821	193.607	-4,466.428	5.65	0.00
Peru	62,438.419	57,417.643	5,020.776	17.07	0.00
Uruguay	108.583	59.242	49.341	4.48	0.00
Venezuela	5,633.141	3,923.585	1,709.556	8.10	0.00
Colombia	28,396.772	20,359.491	8,037.281	17.47	0.00
Belgium	-294.149	0.000	-294.149	16.18	16.18
Canada	-145.185	0.000	-145.185	16.85	16.85
Germany	-173.796	0.000	-173.796	14.75	14.75
Guatemala	-119.065	0.000	-119.065	15.24	15.24
Italy	-165.487	0.000	-165.487	18.47	18.47
Mexico	-508.007	0.000	-508.007	15.18	15.18
Netherlands	-150.731	0.000	-150.731	12.07	12.07
Spain	-402.059	0.000	-402.059	16.98	16.98
United States	-8,033.844	0.000	-8,033.844	17.56	17.56
United Kingdom	-164.771	0.000	-164.771	14.51	14.51

Source: Author´s work in WITS. Please note that price effect is zero because the assumption of small country holds.

Table XI below gives the consumer surplus and tariff revenue effects of tariff liberalization with MERCOSUR countries. The consumer surplus effect is US$ 12,844.879,1000 US$ while the revenue effect is negative -74,320.888,1000 US $

Table XI: Consumer Surplus and Tariff Change in Revenue Effects of Liberalization of Ecuadorian Trade in 20 Specialized Products with MERCOSUR Countries in 2010

Revenue Effect in 1000 USD	Trade Value in 1000 USD	Tariff Revenue in 1000 USD	Tariff NewRevenue in 1000 USD	Tariff Change In Revenue in 1000 USD	Consumer Surplus in 1000 USD
-74,320.888	3,713,676.641	526,578.830	346,949.249	-179,629.578	12,844.879

Source: Author´s work in WITS

The Table XII shows the welfare effect of tariff liberalization of such 20 products with MERCOSUR countries in 2010. The Welfare effect works out to be 9,453.874,1000 US $.

Table XII: Welfare Effects of Liberalization of 20 Products with MERCOSUR in 2010

Product Code	Trade Total Effect in 1000 USD	Welfare in 1000 USD
20ECUCA	110,484.049	9,453.874

Source: Author´s work in WITS

Simulation Two: Table XIII bellow shows the tariff liberalization impact of liberalizing trade of 20 products (at two digit level) with the China, Japan and the US. One would have expected larger gains as compared to a scenario when Ecuador liberalized its trade with MERCOSUR countries (like in the case of CSG goods). Also, the total trade effect is 41,659.447,1000 US $, an amount (increase in imports) lowers than when Ecuador liberalized its trade of 20 products with MERCOSUR, which is 110,484.049,1000 US $. The table also shows that the US gains the most, followed by China and then Japan. The most affected(negative total trade effect) will be Argentina, Chile, Columbia and Peru in the Latin American region while Mexico, Spain and Belgium gets affected the most due to liberalization with the China, Japan and the US.

Table XIII: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization of Ecuadorian Trade of 20 specialized products with the China, Japan and the US for Simulations Undertaken by Ecuador in in 2010.

Partner Name	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple Duty Rate	New Simple Duty Rate
World	41,659.447	41,659.447	0.000	14.18	7.88
Argentina	-5,516.203	0.000	-5,516.203	9.74	9.74
Bolivia	-484.978	0.000	-484.978	11.24	11.24
Chile	-3,351.370	0.000	-3,351.370	0.84	0.84
Colombia	-2,571.654	0.000	-2,571.654	17.47	17.47
Paraguay	-67.529	0.000	-67.529	5.65	5.65
Peru	-1,720.109	0.000	-1,720.109	17.07	17.07
Uruguay	-17.761	0.000	-17.761	4.48	4.48
Venezuela	-180.280	0.000	-180.280	8.10	8.10
Brazil	-437.420	0.000	-437.420	10.23	10.23
China	9,523.760	7,436.136	2,087.624	16.82	0.00
Japan	323.048	264.813	58.235	17.58	0.00
Belgium	-115.961	0.000	-115.961	16.18	16.18
Germany	-204.064	0.000	-204.064	14.75	14.75
Italy	-121.725	0.000	-121.725	18.47	18.47
India	-41.036	0.000	-41.036	15.76	15.76
Mexico	-280.899	0.000	-280.899	15.18	15.18
Spain	-206.672	0.000	-206.672	16.98	16.98
United States	52,073.213	33,958.497	18,114.715	17.56	0.00

Source: Author´s work in WITS

The Table XIV shows that the welfare effect is 3031.310 US$, an amount lower when Ecuador liberalized its trade of 20 specialized products with the MERCOSUR. The revenue effect is -27,166.540,1000 US $

Table XIV: Welfare and Tariff Change in Revenue Effects of Liberalization of Ecuadorian Trade in 20 Specialized Products with the China, the Japan and the US in 2010

Revenue Effect in 1000 USD	Trade Total Effect in 1000 USD	Trade Value in 1000 USD	Trade Total Effect in 1000 USD	Welfare in 1000 USD
-27,166.540	41,659.447	3,713,676.641	41,659.447	3,031.310

Source: Author´s work in WITS

The table XV below shows that the consumer surplus is lower when Ecuador liberalizes its trade of 20 specialized products with the MERCOSUR countries.

Table XV: Tariff Change in Revenue and Consumer Surplus Effects of Liberalization of Ecuadorian Trade of 20 Specialized Products with the China, Japan and the US in 2010.

Imports Before in 1000 USD	Import Change	Tariff Revenue in 1000 USD	Tariff New Revenue in 1000 USD	Tariff Change In Revenue in 1000 USD	Consumer Surplus in 1000 USD
3,713,676.641	41.659.447	526,578.830	295,876.426	-230,702.401	4,594.678

Source: Author´s work in WITS

Simulation Three: The table XVI below shows the total trade effect, trade creation and trade diversion effect of liberalizing trade of 20 specialized products with the EU 27 countries in 2010

The maximum gain in terms of total trade effect is for Spain(2724.209,1000 US $),followed by Germany, Belgium ,Italy and Netherlands. Columbia and Chile in Latin American region while the US in North America will be the countries which will have maximum trade diversion.

Table XVI: Trade Creation, Trade Diversion and Total Trade Effects of Tariff Liberalization of Ecuadorian Trade of 20 specialized products with the EU 27 for Simulations Undertaken by Ecuador in in 2010.

Partner Name	TradeT otal Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Old Simple DutyRate	New Simple Duty Rate
World	7,206.532	7,206.532	0.000	14.18	12.35
Argentina	-376.826	0.000	-376.826	9.74	9.74
Austria	298.425	187.878	110.547	16.99	0.00
Belgium	1,584.957	962.403	622.553	16.18	0.00
Brazil	-177.364	0.000	-177.364	10.23	10.23
Canada	-277.069	0.000	-277.069	16.85	16.85
Chile	-880.214	0.000	-880.214	0.84	0.84
China	-309.681	0.000	-309.681	16.82	16.82
Colombia	-876.010	0.000	-876.010	17.47	17.47
Denmark	171.244	66.369	104.874	16.70	0.00
France	869.018	495.032	373.986	14.89	0.00
Germany	1,819.315	1,215.762	603.553	14.75	0.00
Italy	1,549.563	1,010.249	539.314	18.47	0.00
Mexico	-61.756	0.000	-61.756	15.18	15.18
Netherlands	1,160.392	666.897	493.495	12.07	0.00
Peru	-491.587	0.000	-491.587	17.07	17.07
Spain	2,724.209	1,737.373	986.836	16.98	0.00
United Kingdom	519.172	227.380	291.792	14.51	0.00
United States	-661.349	0.000	-661.349	17.56	17.56

Source: author´s work in WITS

Table XVII gives the Welfare, Revenue and Consumer Surplus effects. All figures are lower than when Ecuador liberalized its trade with the China, Japan and the US and MERCOSUR Countries. The maximum gain was when Ecuador liberalized its trade of 20 products with the MERCOSUR.

Table XVII: Welfare, Revenue and Consumer Surplus Effects of Tariff Liberalization of Ecuadorian Trade of 20 Specialized Products with the EU27 in 2010

Revenue Effect in 1000 USD	Trade Total Effect in 1000 USD	Welfare in 1000 USD	Imports Before in 1000 USD	Import Change	Tariff Revenue in 1000 USD	Tariff New Revenue in 1000 USD	Tariff Change In Revenue in 1000 USD	Consumer Surplus in 1000 USD
-5,358.885	7,206.532	766.643	3,713,676.641	7.206.532	526,578.830	459,372.249	-67,206.578	955.775

Source: author´s work in WITS

We repeat the tariff liberalization impact of liberalizing 238 products (6 digit levels) with all regional groups-MERCOSUR, China, Japan and the US considered as one group and EU27 Countries in 2010. We get the same results when we liberalized trade of 20 products**.** It is beneficial to trade in 238 products (6 digits) with the MERCOSUR trading partners rather than China, Japan and the US or the EU 27. Please see Appendix Tables VII through IX for the results put in the table.

Conclusions from SMART ANALYSIS

In summary It is beneficial to trade in 20 products (2 digit) and 238 products(6 digit) with the MERCOSUR trading partners while for trade in CSG it is better to liberalize trade with the Japan, the US and the China, the main suppliers (exporters)of CSG products.