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***Is MERCOSUR external agenda pro-poor?
An assessment of the EU-MERCOSUR free trade agreement on Uruguayan
poverty applying MIRAGE***

**Draft version. Results and conclusions to be completed
April 2011**

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Abstract

In 2010, after several years of being stalled, negotiations between MERCOSUR and the European Union to conform a Free Trade Agreement (FTA) were resumed. This FTA is expected to have an important impact on MERCOSUR economies, especially if both blocs reach an agreement regarding the agriculture sector. For a small country as Uruguay, one of the small economies of MERCOSUR, the conclusion of this agreement may have an important impact on the economy, and also on income distribution and poverty, as the FTA will have differentiated impact on the different sectors of the economy. This paper analyzes the impact of a FTA between MERCOSUR and EU making special focus on distributional impacts on Uruguay. For doing so, we apply an improved version of MIRAGE with household heterogeneity.

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1. Introduction

In 2010, after several years of being stalled, negotiations between MERCOSUR and the European Union to conform a Free Trade Agreement (FTA) were resumed. According to official sources, there is optimism that this time negotiations will conclude in the medium term. This FTA is expected to have an important impact on MERCOSUR economies, especially if both blocs reach an agreement regarding the agriculture sector. For a small country as Uruguay, one of the small economies of MERCOSUR, the conclusion of this agreement may have an important impact on the economy, and also on income distribution and poverty, as the FTA will have differentiated impact on the different sectors of the economy.

This paper analyzes the impact of a FTA between MERCOSUR and EU on Uruguay, making special focus on the impact on poverty¹. For doing so, we apply an improved version of MIRAGE with household heterogeneity. The original representative private agent of the MIRAGE model is now split into a public agent and a private agent for all countries/regions in the model, and into 439 households in the case of Uruguay. This split is made with data from a recent household survey, applying a clustering method. Households are characterized by social and economic attributes, such as skill level and gender of the household head, main income source and location.

This exercise allows us to first analyze how the gains of the FTA are distributed among the MERCOSUR members, and also explore how the gains for one country (Uruguay) are distributed among its population, to identify potential winners and losers from the agreement, and to understand the different reactions of the households. Finally, gains and losses of the public sector are also be analyzed.

There are several studies that analyze the impact of a trade agreement between Mercosur and European Union (Laborde and Ramos, 2008; Monteagudo and Watanuki, 2001; Bouet et al, 2003; Laens and Terra, 2006), but none of them analyze the redistributive impacts of the agreement.

¹ In this paper, we will not consider Venezuela as part of Mercosur. The country signed the entrance to the Customs Union in 2006, but not all countries have yet ratified this entrance.

2. State of negotiations between EU and MERCOSUR

Negotiations between the European Union and Mercosur are almost as old as the Mercosur itself. In 1995, the year Mercosur officially started to operate, both trade bloc signed the EU-Mercosur Framework Cooperation Agreement, which established the objective of “encouraging the increase and diversification of trade, preparing for subsequent gradual and reciprocal liberalization of trade and promoting conditions which are conducive to the establishment of the Interregional Association, taking into account, in conformity with WTO rules, the sensitivity of certain goods.” The agreement entered into force in 1999, and negotiations to liberalize trade started in 2000. In 2004, after 13 meetings of the Bi-regional Negotiations Committee (BNC) and an exchange of offers, negotiations were suspended due to lack of agreement. The main differences were in the agriculture sector liberalization. Mercosur countries were not satisfied with the treatment of tariff quotas offered by the European Union (affecting 20% of agriculture tariff lines), regarding the volume of the quotas, the in and over the quota tariffs and the administration of the quotas (Kutas, 2006). The EU, on its side, was not satisfied with Mercosur’s offer on liberalization on services and government procurement.

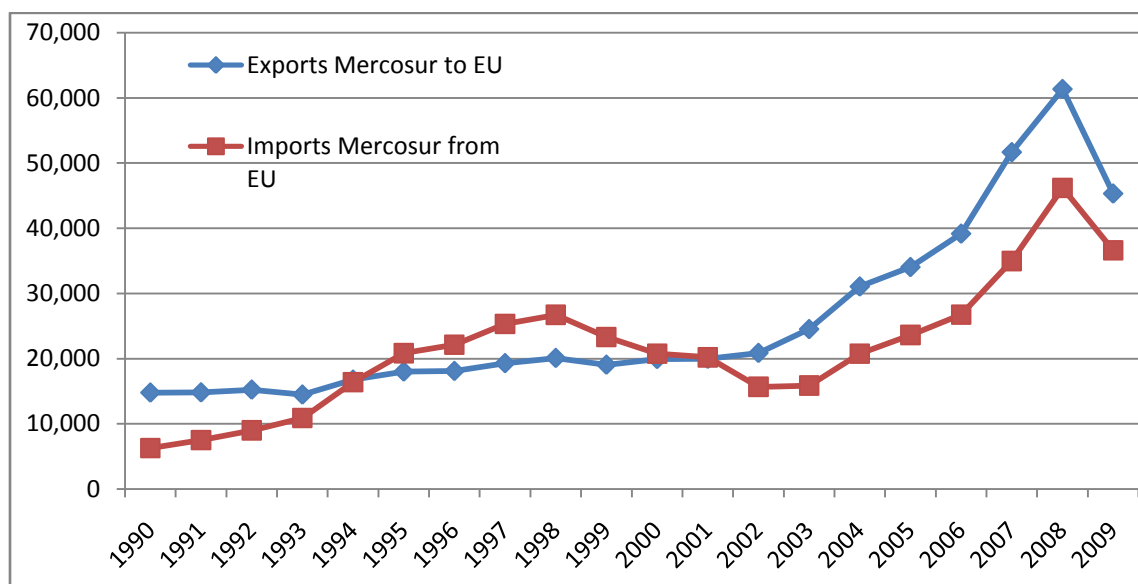
After the suspension of negotiations, both regions kept dialogue, but the negotiations were in part subject to the evolution of the Doha Round. However, since an agreement on the Doha Round does not seem to happen in the short run, negotiations between Mercosur and EU were resumed in 2010. Negotiations were relaunched in March 2010, during the Madrid Summit, and the first round of negotiations took place soon after that, in June/July in Buenos Aires, Argentina. So far, there have been four rounds of negotiations, and two more rounds are scheduled for May and July 2011. According to EU Trade Commissioner Karel de Gucht, an agreement could be reached by the end of 2011, although the issues that have determined the cease of negotiations before seem to be arising again: “pressures from the EU farming lobby that involve a warning from the European Parliament and Argentina’s ‘protectionist policies’ which are a growing obstacle for normal trade”². Negotiations seek to reach an “Association Agreement” in three areas: political dialogue, cooperation and trade.

² <http://en.mercopress.com/2011/03/18/eu-mercotur-negotiations-stumble-but-both-sides-determined-to-continue>

3. Trade and protection

Value of trade between Mercosur and European Union has shown an increasing trend in the last 20 years. Exports from European Union to Mercosur increased between 1990 and 1998, and fell after the devaluations of domestic currencies in Brazil (1999) and Argentina (2002). Between 2003 and 2008 they increase sharply (partly due to the increase in international commodity prices), and fell as a consequence of 2009 financial crisis. Exports from Mercosur to European Union, on the other hand, showed a slight increasing trend during the 1990s, and show the same trend than EU exports in the 2000s. In the last decade, exports of Mercosur to European Union have been larger in value than the opposite.

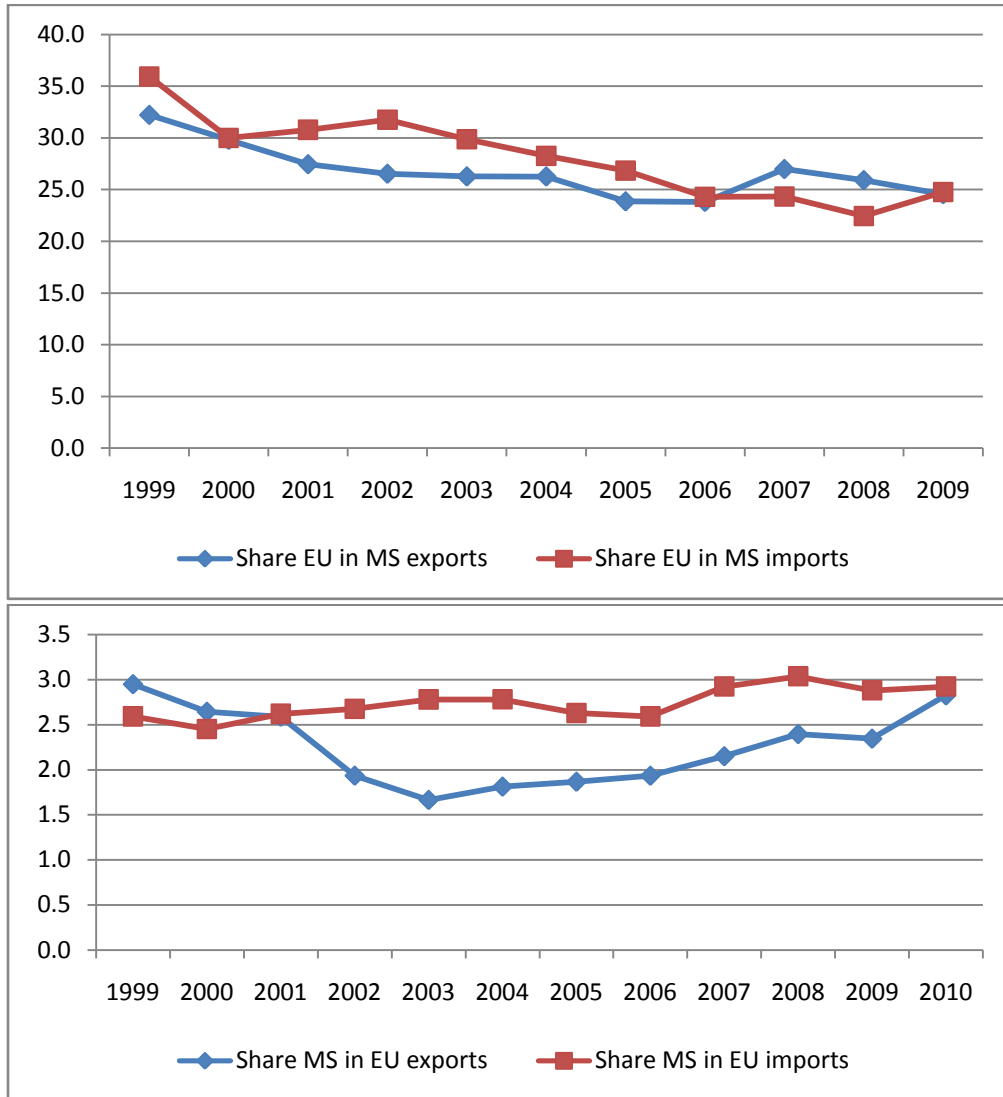
Figure 1. Evolution of trade between Mercosur and European Union, 1990-2009, in million USD



Source: Centre for International Economy (CEI)

The importance of each bloc in total trade of the other bloc is highly asymmetrical. While EU represents an important share of both Mercosur exports and imports (around 25% in 2009), Mercosur only represents 3% of European exports and imports, considering extra European trade. The importance of EU in Mercosur trade has declined over time: In 1999, the EU represented 35% of Mercosur total exports and 32% of imports. On the other hand, Mercosur has become a more important trade partner for the European Union, although the variation is not very significant.

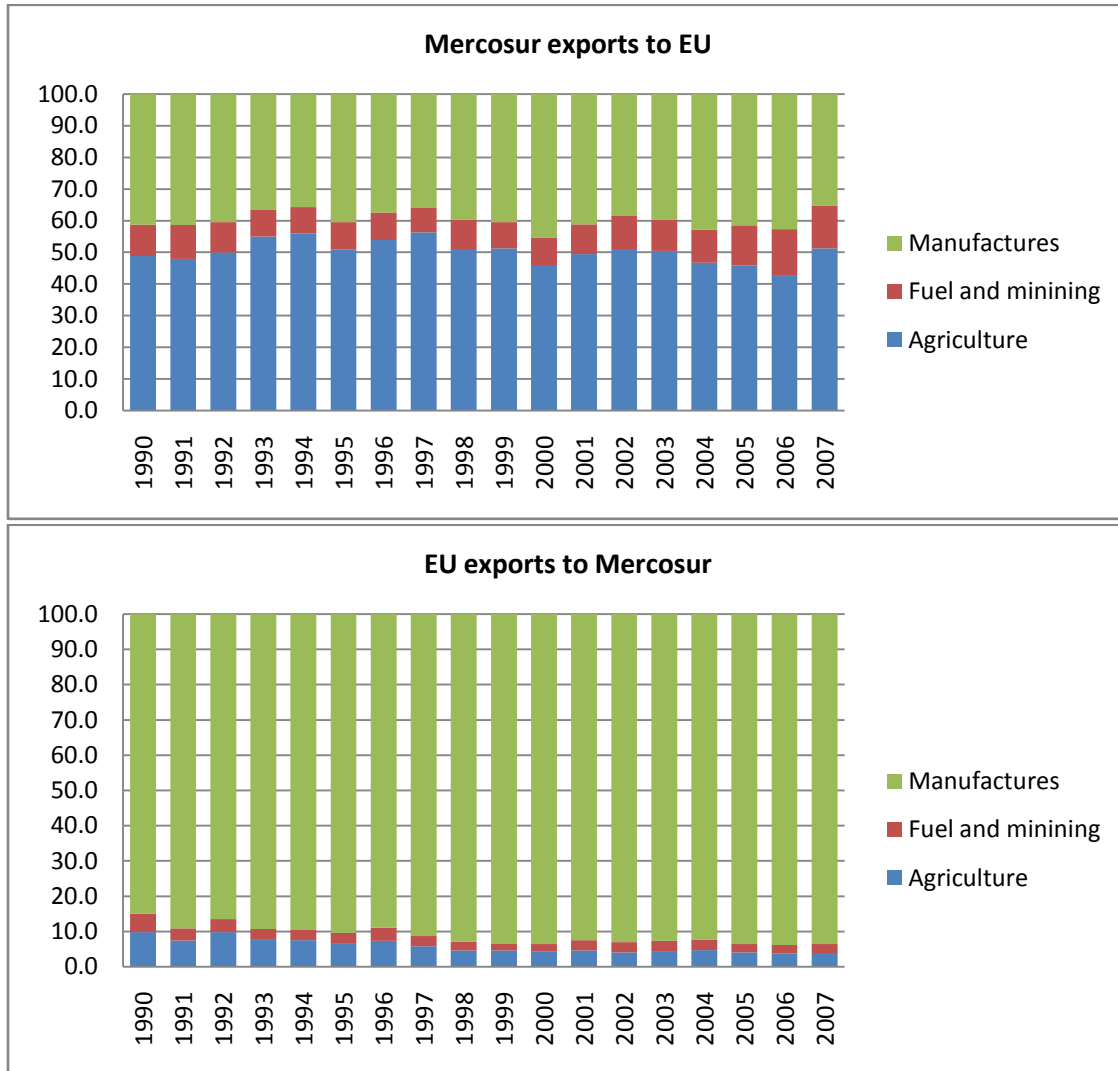
Figure 2. Importance of each bloc in other bloc trade, 1999-2009, in percentage



Source: own elaboration with data from Eurostat and CEI

Composition of Mercosur exports to EU has remained similar along time, although the share of agriculture in total exports to EU has fluctuated from 45.7% in 2000 to 56.3% in 1997, mostly at the expense of industrial exports. On the other hand, composition of exports from EU to Mercosur has shown changes along time. Industry exports have gained importance in the last from 10% in 1990 to 4% in 2007.

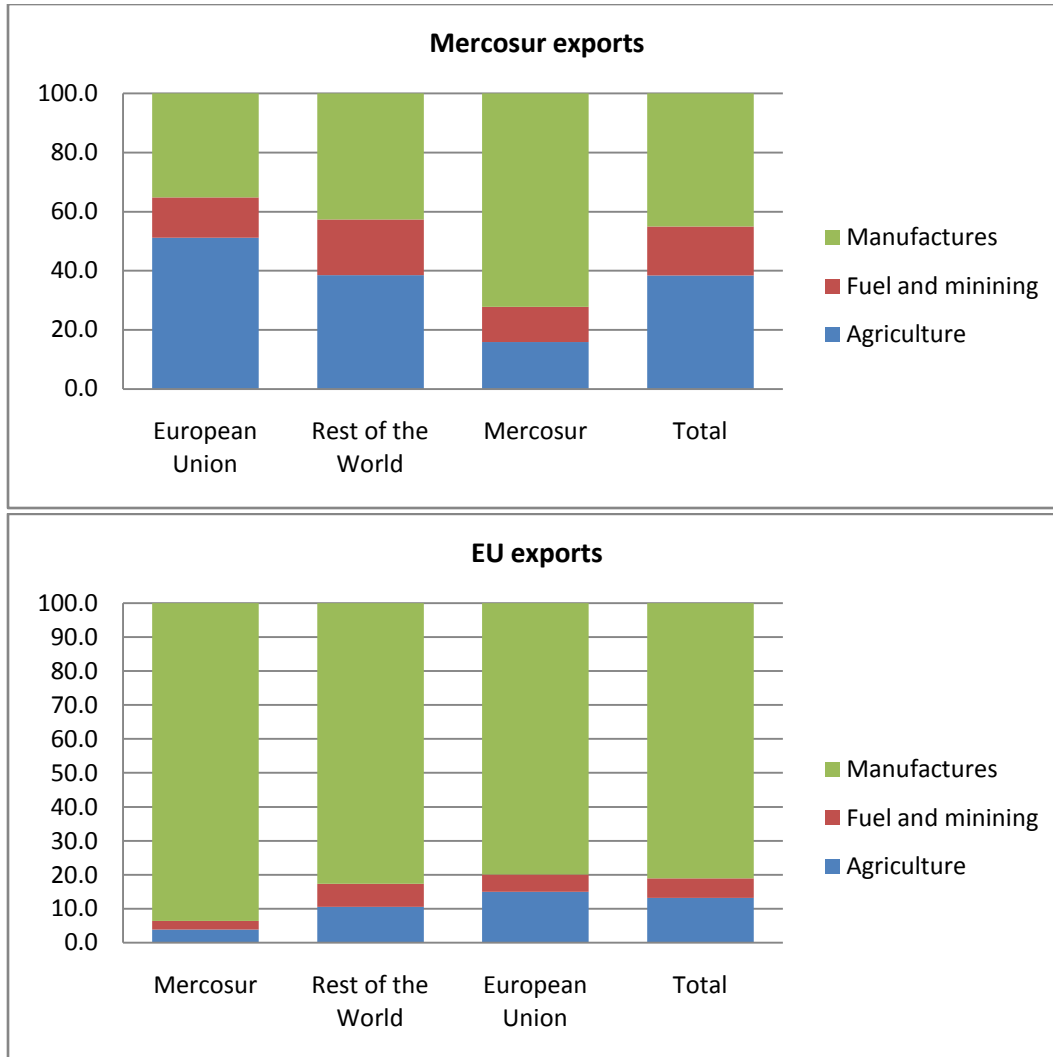
Figure 3. Evolution of composition of exports between both blocs



Source: own elaboration with data from BACI

The composition of exports from Mercosur to EU does not follow the same pattern that the composition of total Mercosur exports. As Figure 4 shows, while half of Mercosur exports to the European Union are agriculture products, these products represent 38% of total exports. Both manufactures and mining products are underrepresented in exports to the EU. In the opposite case, European exports to Mercosur, there is also a distinctive partner. In this case, manufacture exports are overrepresented: while this group represents 80% of total European exports, in the case of Mercosur they represent 94% and almost dominate exports to the region.

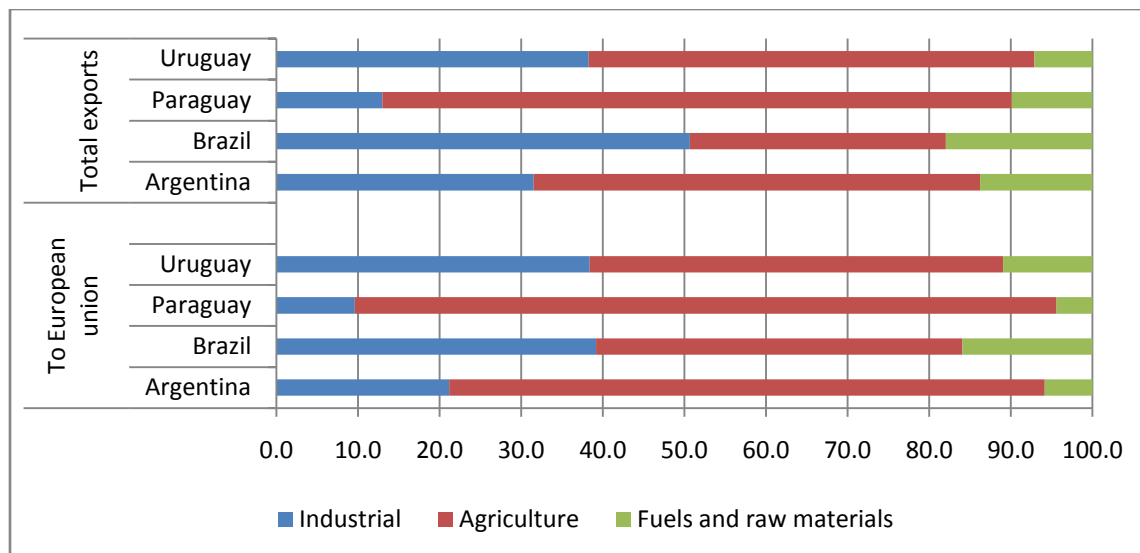
Figure 4. Composition of exports. Intra-regional, to the other bloc, to the rest of the world and total, 2007



Source: own elaboration with data from BACI

The four countries in Mercosur present strong differences in terms of trade composition with the EU (see Figure 5). Brazil is the country with a higher share of manufacture exports (almost 40%), while Paraguay has the highest share of agriculture exports (86%). Comparing the composition of total exports of the four countries with the composition of exports to European Union, we find some differences. Uruguay is the only country for which the share of agriculture exports to the EU is smaller than the share of agriculture exports to the world. This may be explained by the protection that agriculture exports face in the EU, which we will analyze next.

Figure 5. Share of agriculture products, fuel and manufactures in total exports by Mercosur country, 2007



Source: own elaboration with data from BACI

Table 1 also shows that Mercosur countries have strong differences in terms of size (economic and population), and that the gap with the EU is also significant. The “small” Mercosur countries, Paraguay and Uruguay, only account for 4% of total population and 2.4% of total GDP of Mercosur. However, in terms of GDP per capita, the small countries have strong differences: Uruguay is the country in Mercosur with highest GDP per capita in 2009, while Paraguay is the one with the lowest. The asymmetry between both trade blocs is high: the EU doubles Mercosur in population, and has a GDP eight times higher than Mercosur GDP.

Table 1. GDP and population of Mercosur and EU. Year 2009

	Argentina	Brazil	Paraguay	Uruguay	EU
GDP (million current USD)	310,065	1,574,039	14,901	31,528	15,450,335
Population (million people)	40.1	191.5	6.3	3.3	494.3
GDP per capita (current USD)	7,726	8,220	2,350	9,426	31,257

Source: CEI and OECD

Protection

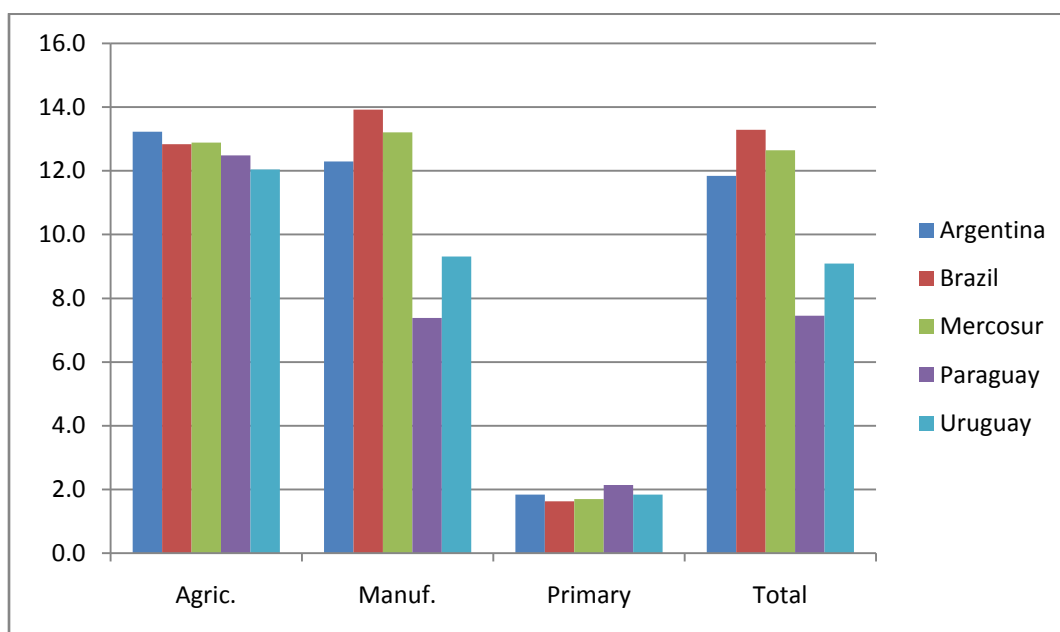
The average level of protection (only taking into account tariffs) that each region applied on the other region’s exports is very similar: 12.6% in the case of EU and 12.4% in the case of the Mercosur. However, behind this average figure there are different trade policy strategies applied by both regions. We’ll first start analyzing the protection that EU exports face in Mercosur, and then we’ll present the trade policy of the EU.

Protection applied by Mercosur countries

Mercosur countries apply a Common External Tariff that covers around 85% of total tariff lines. There are still exceptions allowed to capital goods, computing and telecommunications goods, and small countries (Uruguay and specially Paraguay) are granted with more exceptions than big countries (Argentina and Brazil)³.

As Figure 6 shows, the average protection applied to EU exports in agriculture goods is very similar among Mercosur countries, however, EU manufacture exports face different protection levels depending on the destination country within Mercosur. The highest tariff on manufactures is applied by Brazil, followed by Argentina. Primary goods face on average the lowest tariffs.

Figure 6. Protection applied by Mercosur countries to EU exports, year 2007



Source: Laborde (2010). Applied tariffs, reference group weights.

Protection in European Union

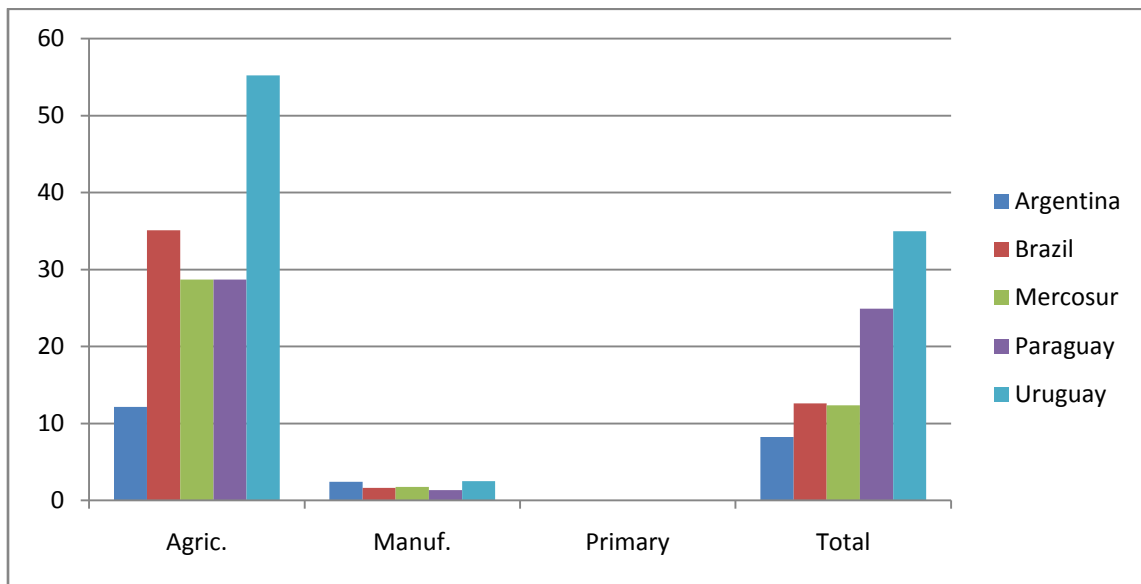
Protection faced by Mercosur exports in the EU presents a completely different picture. Protection to manufacture sectors is very low, and to primary sector is practically zero. The bulk of protection in the European Union is concentrated in agriculture sectors, mainly sugar, meat, dairy products and cereals. As Figure 8 shows, in some products protection can be higher than 100%.

³ Decision 56/10 of Mercosur establishes a maximum of 100 tariff lines up to 2015 excepted from CET to Argentina and Brazil, 649 tariffs lines up to 2019 for Paraguay and 225 tariff lines up to 2017 for Uruguay.

The different countries in Mercosur face different protection levels. Uruguay exports face the highest level of protection in the EU. Again, in this case the higher level of tariffs is explained by protection in agriculture sectors. Uruguay faces a higher level of protection on cereals than its Mercosur partners.

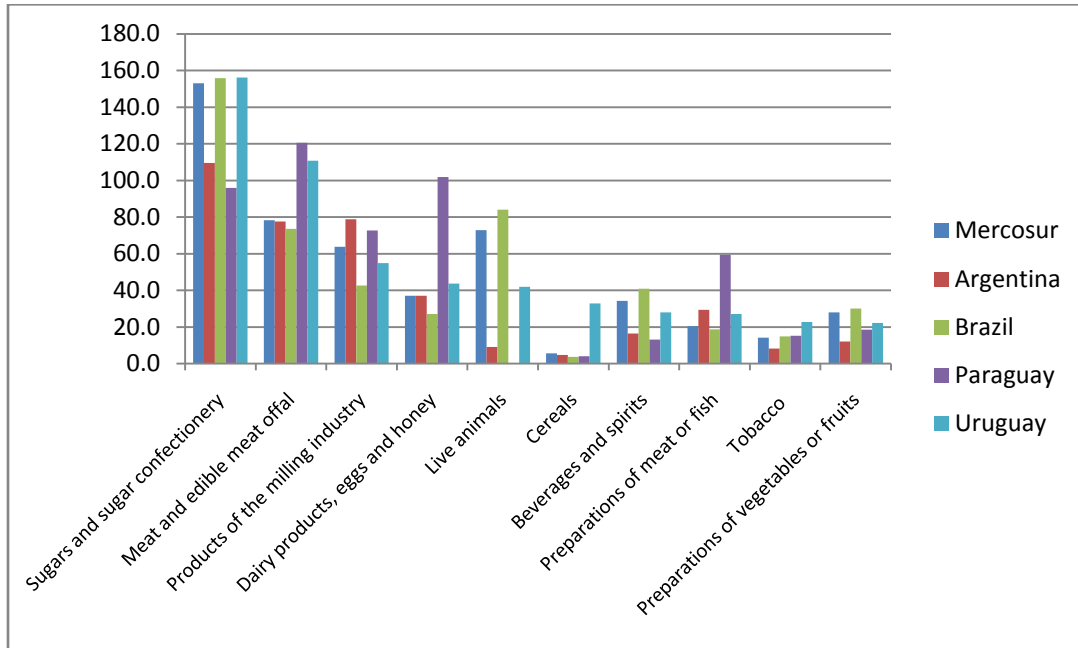
Mercosur countries benefit from preferential tariff quotas in some of the region’s agriculture exports: cereals, meats, some fruits, vegetables, dairy products and meat (Laborde and Ramos, 2008). In the last case, the quotas benefit mostly Argentina and Brazil. The expansion of tariff quotas has been of the controversial issues in trade negotiations between Mercosur and EU in the past.

Figure 7. Protection applied by European Union to Mercosur exports by country



Source: Laborde (2010)

Figure 8. Protection applied by European Union to Mercosur exports (10 highest protected HS2 products)



Source: Laborde (2010)

4. Methodology

MIRAGE model

We apply the MIRAGE model of the world economy, multi-sector, multi-region Computable General Equilibrium Model devoted to trade policy analysis. In this paper, we work with an extension of MIRAGE that introduces household heterogeneity.

A detailed technical description of the model is available in Bchir et al. (2002) and Decreux and Valin (2007). The model assumes perfect competition across all sectors. On the production side, value added and intermediate goods are complement under a Leontief hypothesis. The intermediate inputs function is an aggregate CES function of all goods: it means that substitutability exists between two intermediate goods, depending on the relative prices of these goods. This substitutability is constant and at the same level for any pair of intermediate goods. Similarly, value-added is a constant elasticity of substitution (CES) function of unskilled labor, land, natural resources, and of a CES bundle of skilled labor and capital. This nesting implies less substitutability between capital and skilled labor than between these two and other

factors. In other words, when the relative price of unskilled labor is increased, this factor is replaced by a combination of capital and skilled labor, which are complementary.⁴

Factor endowments are fully employed. The only factor whose supply is constant is natural resources with a few exceptions detailed later. Capital supply is modified each period because of depreciation and investment. Growth rates of labor supply are fixed exogenously. Land supply is endogenous; it depends on the real remuneration of land. In some countries land is a scarce factor (for example, Japan and the EU), such that elasticity of supply is low. In others (such as Argentina, Australia, and Brazil), land is abundant and elasticity is high.

Skilled labor is the only factor that is perfectly mobile. Installed capital and natural resources are sector specific. New capital is allocated among sectors according to an investment function. Unskilled labor is imperfectly mobile between agricultural and nonagricultural sectors according to a constant elasticity of transformation (CET) function: unskilled labor's remuneration in agricultural activities is different to that in nonagricultural activities. This factor is distributed between these two series of sectors according to the ratio of remunerations. Land is also imperfectly mobile between agricultural sectors.

We assume full employment of labor; more precisely, there is a constant aggregate employment in all countries (wage flexibility). This assumption could amplify the benefits of trade liberalization for developing countries (in this paper's case, Mercosur countries): in full-employment models, increased demand for labor (from increased activity and exports) leads to higher real wages, such that the origin of comparative advantage is progressively eroded; but in models with unemployment, real wages are constant and exports increase much more.

Capital in a given region, whatever its origin, domestic or foreign, is assumed to be obtained by assembling intermediate inputs according to a specific combination. The capital good is the same whatever the sector. In this version of the MIRAGE, we assume that all sectors operate under perfect competition, there is no fixed cost, and price equals marginal cost.

In this paper, we introduce some changes in the way the demand side is modeled. This is presented next.

Household heterogeneity in MIRAGE

The main changes introduced in the MIRAGE model in order to consider household heterogeneity are presented in Bouet et al. (2010; 2011). In the traditional version of MIRAGE the demand side is modeled in each region through a representative agent whose propensity to save is constant. In this new version, we first split the representative agent in a public and a

⁴ Substitution elasticity between unskilled labor, land, natural resources, and the bundle of capital and skilled labor is 1.1 - for all sectors except for agriculture and mining where it is equal to 0.2 - whereas it is only 0.6 between capital and skilled labor.

private agent, for all countries/regions in the model; and second, we split the private agent in different households for some countries only. In this paper, we do it for Uruguay.

The public agent receives income from taxation. It can spend more (public deficit) or less (public surplus) than tax receipts but this difference remains constant in proportion of country's GDP. Consumption of the public agent is modeled through Cobb Douglas preferences, which implies that the share of public consumption of sector i in total public expenditures is constant in value. There is a consumption tax on public expenses, which is the same as for the private consumption.

The private agent receives income from production activities and transfers, both public and private. Preferences of the private agent, as in previous versions of MIRAGE, are represented through a CES–LES function. These preferences define private final demand for each good. This implies that consumption has a non-unitary income elasticity; when the consumer's income is augmented by x percent, the consumption of each good is not systematically raised by x percent, other things being equal. The sector sub-utility function used in MIRAGE is a nesting of four CES-Armington functions that defines the origin of the goods. In this study, Armington elasticities are from GTAP 7 database and are assumed to be the same across regions.

Total final consumption is the sum of public consumption and private consumption for each good.

Data

The main source of data for the MIRAGE model is the GTAP7.1⁵ database that provides an exhaustive picture of the world economy for the year 2004 (see Narayanan and Walmsley, 2008). We work with 19 countries/regions, among them the four Mercosur countries and the European Union (27), as presented in Table 2.

⁵ www.gtap.org

Table 2. Countries/regions considered in the model

Argentina	ARG
Brazil	BRA
Paraguay	PRY
Uruguay	URY
European Union (27)	EU27
United States	USA
Mexico	MEX
Chile	CHL
Andean countries	ANDC
Rest of Latin America and Caribbean	XLAC
EFTA	EFTA
China	CHN
Developed Asian countries	Dvp_AS
Rest of Asia	XAS
Australia and New Zealand	ANZCERTA
Commonwealth of Independent States	CIS
Middle East and North Africa	MENA
Sub-Saharan Africa	SSA
Rest of the World	ROW

Table 3. Sectors included in the model

Rice	Agro-food
Cereals	Agro-food
Vegetable and fruits	Agro-food
Other seeds	Agro-food
Sugar	Agro-food
Other crops	Agro-food
Cattle meat	Agro-food
Other meat	Agro-food
Dairy products	Agro-food
Other agriculture products	Agro-food
Primary	Primary
Crude oil and gas	Primary
Minerals	Primary
Vegetable oils	Agro-food
Other food	Agro-food
Beverage and tobacco	Agro-food
Textiles	Industry
Leather products	Industry
Wood and paper	Industry
Chemicals, plastics, rubber	Industry
Manufactures	Industry
Motor vehicles	Industry
Transport equipment	Industry
Electronic equipment	Industry
Machinery and equipment	Industry
Electricity and gas distrb	Services
Other services	Services
Construction	Services
Private services	Services
Transport services	Services

Household disaggregation in Uruguay was made through a clustering procedure (hierarchical analysis), taking into account three variables: income per capita of the household (in logarithm), consumption structure (share of each GTAP product in total consumption) and income structure (share of capital, labor, self-employed labor and transfers in total income of the household)⁶, using the 2005/2006 Income and Expenditure Survey carried out by the National Statistics Office (INE). We identified 439 households in Uruguay.

⁶ A more detailed explanation of data treatment is found in Bouet et al. (2011).

Baseline and simulations

We simulate four different scenarios: a complete liberalization of trade between Mercosur and EU (FTA), and three scenarios including sensitive products: sensitive products in both regions (SENS1), sensitive products only for Mercosur countries (SENS2), and sensitive products for European Union (SENS3). The methodology for choosing sensitive products follows Jean et al (2010).

EU sensitive products cover 55 tariff lines, and are concentrated in meat (44% of sensitive lines), dairy products (24%) and cereals (10%). Mercosur sensitive products, on the other hand, are concentrated in motor vehicles and parts, beverages and tobacco and other food products.

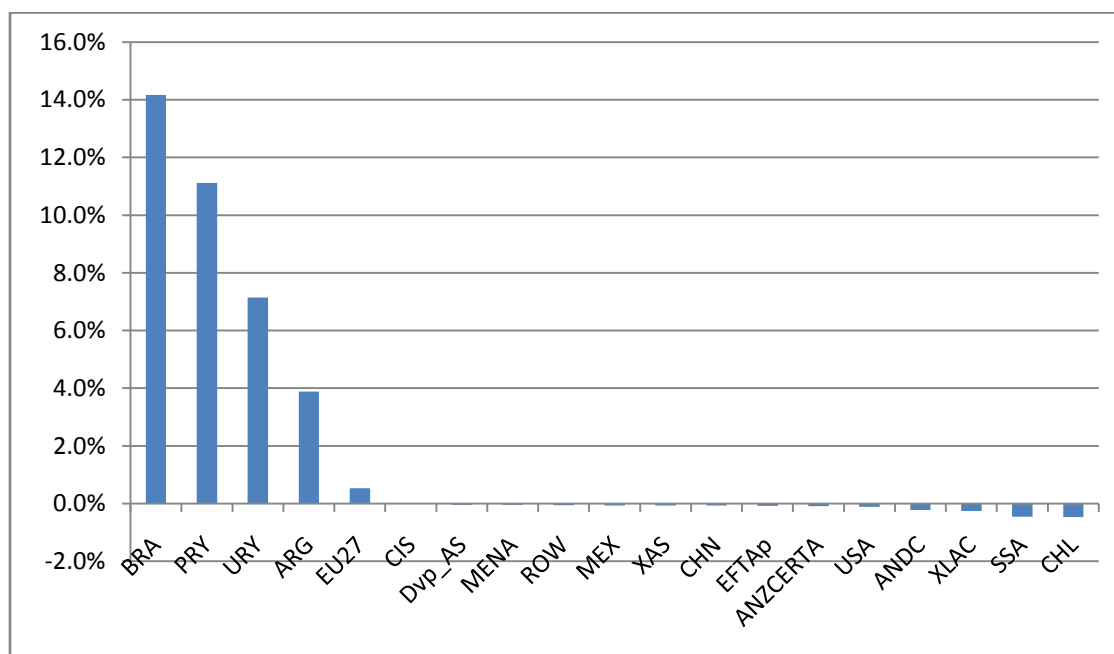
Our model has some caveats, and does not consider some important issues of an agreement between Mercosur and EU. In the first place, we are not simulating tariff quotas expansion, because the specification of the model with household disaggregation does not consider them. Second, we are not modeling liberalization of services, which seems to be one of EU interest in negotiations with Mercosur.

5. Results

Trade

Complete trade liberalization between Mercosur and European Union brings about an increase in exports for the countries participating in the agreement. Brazil and Paraguay are the countries that benefit most: exports increase 14% and 11% respectively, followed by Uruguay (7% rise in exports) and Argentina (almost 4%). European Union exports increase but slightly (0.5%).

Figure 9. Total exports in value, percentage change, year 2020. Full liberalization scenario



Source: MIRAGE results

As it might be expected, the main losers from the agreement are countries/regions with an important trade relation with Mercosur countries (Chile, Rest of Latin America, United States), or Europe (Andean countries, Sub-Saharan Africa, EFTA). For all these countries/regions, exports fall.

Also as expected, Mercosur countries expand their exports of agriculture and food products, especially dairy products, cereals, meat and rice, while the European Union increases mainly industrial exports, but also primary and services exports.

Table 4. Impact on exports by sector, percentage change, year 2020. Full liberalization scenario

	Argentina	Brazil	Paraguay	Uruguay	European Union
Agro-food	13.3	92.4	42.3	35.5	-3.6
Industry	-2.6	-9.5	-18.2	-11.9	1.1
Primary	-4.4	-7.4	-14.3	-14.3	0.8
Services	-2.2	-6.4	-10.0	-7.9	0.1

Source: MIRAGE results

These results are significantly affected when sensitive products are included in negotiations. Mercosur exports to the European Union increase in those sectors sensitive for the latter, and thus when sensitive products are included, exports still increase, but much less, as shown in Table 5. Considering only sensitive products for the European Union (SENS3 scenario), we find that the most affected countries of Mercosur are Brazil and Uruguay. On the other hand, the impact on European exports is small, but this is related to the slight increase in exports of this region in the first place. For small Mercosur countries, including sensitive products in Mercosur lists (SENS2) have a positive impact on their exports, due to an attenuated trade diversion effect.

Table 5. Impact on exports in value, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
Argentina	3.9	2.3	3.8	2.4
Brazil	14.2	6.5	13.7	6.9
Paraguay	11.1	7.3	11.2	7.3
Uruguay	7.1	2.0	7.3	1.9
European Union	0.5	0.3	0.5	0.3

Source: MIRAGE results

Table 6. Impact on imports in value, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
Argentina	5.5	3.3	5.4	3.4
Brazil	19.4	8.9	18.8	9.5
Paraguay	13.1	8.6	13.1	8.5
Uruguay	6.1	1.7	6.2	1.7
European Union	0.5	0.3	0.5	0.3

Source: MIRAGE results

Table 7. Real exchange rate, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
Argentina	0.2	-0.2	0.3	-0.4
Brazil	2.8	0.0	3.0	-0.2
Paraguay	4.1	2.8	4.1	2.8
Uruguay	3.1	0.2	3.1	0.2
European Union	-0.2	0.1	-0.2	0.1

Source: MIRAGE results

Welfare

Terms of trade improve for Mercosur countries as a consequence of the agreement, while for the European Union, they deteriorate, although slightly. The results are changed when sensitive products are included in negotiations, except for Paraguay, that still gains as a consequence of the liberalization.

Table 8. Terms of trade, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
ARG	0.4	-0.2	0.5	-0.3
BRA	3.2	-0.1	3.4	-0.3
PRY	4.7	3.3	4.7	3.3
URY	3.8	0.0	3.8	0.0
EU27	-0.1	0.0	-0.1	0.0

Source: MIRAGE results

The reduction of tariffs in Mercosur countries make tariff revenue fall. In spite of this fall, the impact on public consumption is positive. Tariff revenue falls in all countries participating in the agreement except Paraguay, but total public income increases, due to an increase in other tax revenue, such as consumption or/and production taxes.

Table 9. Impact on public consumption, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
Argentina	1.2	-0.3	1.4	-0.5
Brazil	3.5	0.0	3.8	-0.3
Paraguay	8.5	4.8	8.6	4.7
Uruguay	4.6	0.0	4.8	-0.1
European Union	-0.1	0.1	-0.1	0.1

Source: MIRAGE results

Private real income increases in all countries participating on the agreement. The strongest increase in real income is in Paraguay, even when sensitive products are included in the agreement. In this last case, real income falls in Argentina.

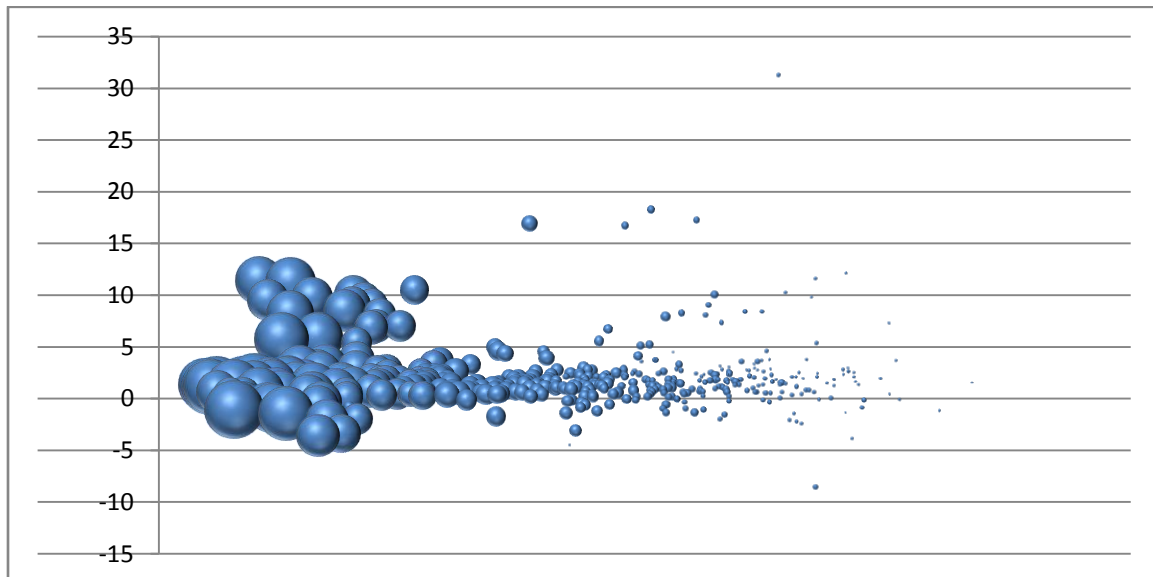
Table 10. Impact on private welfare, percentage change, year 2020. Full liberalization scenario and scenarios with sensitive products

	FTA	SENS1	SENS2	SENS3
Argentina	0.42	-0.05	0.55	-0.08
Brazil	1.10	0.11	1.70	0.03
Paraguay	4.81	3.18	5.08	3.14
European Union	0.23	0.05	0.15	0.06

Source: MIRAGE results

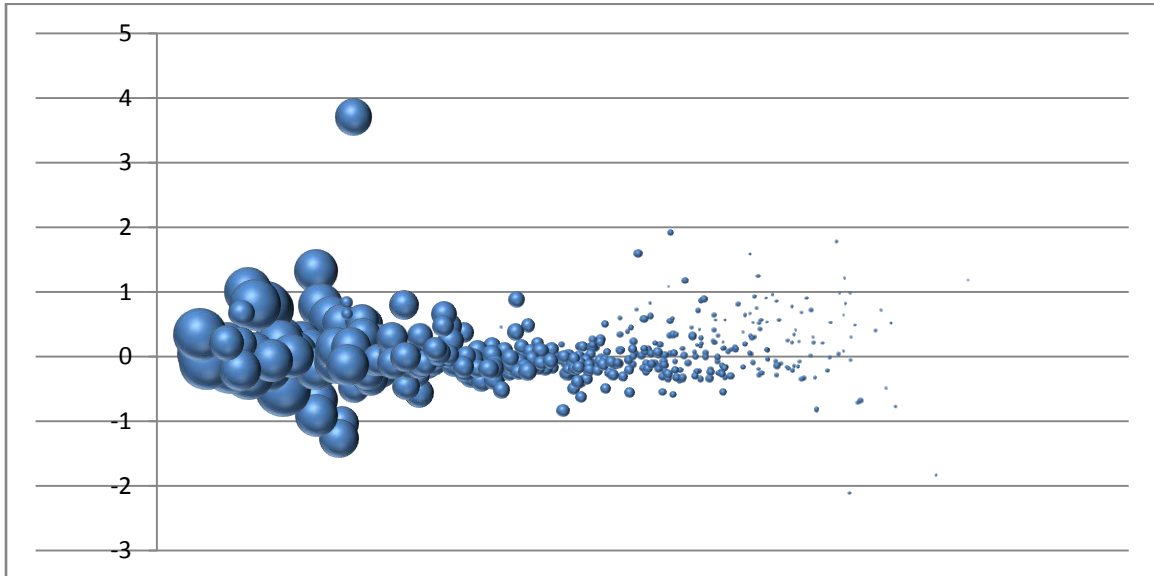
In the case of Uruguay, we work with 439 households in the model, and the impact on their real income varies strongly, from significant gains from liberalization –increase in real income above 10% in some cases – and losses –fall in real income, as Figure 10 shows. The size of the bubbles represents the size of the households, the vertical axis welfare variation (in percentage change) and in the horizontal axis income per capita of households (in logarithm). Even when most households gain from the trade agreement signed by Uruguay, there are some households that lose. The gains from the agreement are attenuated when sensitive products are included, as Figure 11 shows. However, losses are also attenuated, and the distributional impacts of the agreement are less strong.

Figure 10. Impact on welfare in Uruguay, percentage change, year 2020. Full liberalization scenario



Source: MIRAGE results

Figure 11. Impact on welfare in Uruguay, percentage change, year 2020. Scenario with sensitive products



Source: MIRAGE results

Results section to be completed

6. Concluding remarks

To be completed

7. References

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