

# Argentina's import patterns: trade preferences and the extensive margin of trade

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- WORK IN PROGRESS -  
(comments most welcome)

## Abstract

We estimate the influence of trade preferences granted by Argentina on the origin of its imports. We try to identify if changes in Argentina trade policy toward a set of countries had a differential effect, depending on if goods were already traded, or on the contrary, if tariff changes affected mostly imports of new goods. We distinguish between the effects of changing tariffs and changing trade preferences.

The econometric evidence shows that the effect of changes in tariff preferences on the probability of Argentina importing from other ALADI members has been rather small, with most of the effect being explained by changes in tariff rates levied on imports from these countries. This result is stronger in the case of imports from Brazil.

**JEL:** F13, F15

**Keywords:** regional integration, import patterns, tariff preferences, extensive margin.

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## Introduction

On August 12, 1980, eleven Latin-American countries<sup>1</sup> signed the Treaty of Montevideo, establishing the “Asociación Latinoamericana de Integración” (ALADI). The main role of ALADI is to serve as the umbrella for economic, trade and social integration of its members. Under the ALADI framework different kind of agreements can be signed by two or more countries, which differentiate among them depending on the number of countries involved (regional agreements versus partial agreements), and on the scope of such agreements (trade agreements, economic complementation, agricultural, etc.).

Since the beginning of ALADI, Argentina signed more than fifty agreements with other ALADI members. Until the nineties, most of these agreements had a very limited scope, usually implying the establishment of quotas which would benefit of a preferential treatment. At the end of 1988, Argentina started a unilateral reduction of most of its barriers on imports, both tariffs and non-tariffs. Almost simultaneously, Argentina and Brazil initiated a process of regional integration with the signature of the “The Treaty of Integration, Cooperation and Development” explicitly setting the objective of reaching a Common Market. In July 1990 the “Buenos Aires Act” was signed, with the objective of achieving a Free Trade Area by 1994. This Act is the immediate record of MERCOSUR, which was launched only one year later, in June 1991, with the joining of Paraguay and Uruguay and the signature of the “Asuncion Treaty”. In 1996 the MERCOSUR and Chile signed an agreement seeking to establish a Free Trade Area, a similar agreement was signed with Bolivia in 1997. Other agreements have been signed by the MERCOSUR with other members of ALADI. On July 2006 Venezuela initiated the process to become MERCOSUR fifth member.

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<sup>1</sup> Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela. On November 1998 Cuba joined as the twelfth member.

The objective of the paper is to present new evidence on the role that preferences granted by Argentina to other ALADI countries had on the country import patterns, and especially on imports from Brazil.

The rest of the paper is organised as follows. In section 1 we briefly describe the evolution of Argentina's imports. In section 2 some descriptive statistics are presented distinguishing between new and disappearing goods, an index of import variety is also constructed. Section 3 presents econometric evidence on the role that the reduction of tariffs levied on imports from other ALADI members as well as changes in trade preferences, had on the probability of Argentina importing from these countries, we also look at the particular case of imports from Brazil. Finally section 4 concludes.

## **1. Argentina's import evolution**

As pointed out by Harrison and Revenga (1995), the concept of openness should be related to the idea of "neutrality", the incentives derived from trade policy should be neutral, either in terms of exports or imports. An appropriate measure of openness should not only be able to distinguish between higher or lower barriers to trade, but also between inward and outward oriented regimes. However, constructing such measures require to tackle not a few obstacles, such as the lack of appropriate data, the complexity of the relations among economic sectors, etc. All these problems leave the researcher, in the best of the scenarios, with imperfect indices to measure the restrictiveness of trade policy.

In despite of these concerns, we can say that Argentina is a relatively "closed" economy if we take into account different parameters such as population, GDP, geographical location (relatively far from world market centres) and product specialization in which primary products, and goods which are intensive in primary inputs, play an important role. Using the openness ratio, measured by the ratio between exports plus imports divided by

GDP<sup>2</sup>, Moncarz (2006) finds that for the period 1990-1999 there was a convergence between the observed openness ratio and the one that, according to the characteristics of Argentinean economy could have been expected, the convergence, however, was only partial.<sup>3</sup>

Since the late 1980s Argentina's trade values have increased almost continuously, with the exception of a few years. Imports from other MERCOSUR members have gained an increasing weight, for instance, while for the 80s intra-MERCOSUR imports accounted for around 20% of Argentina's total imports, in the year 2007 they represented 36%, almost doubling the initial figure. This growth is explained almost completely by imports from Brazil, which went from representing 12%-16%% in 1980-1989 to a 32.5% in 2007. This behaviour has made some people to raise a voice of concern over the potential presence of a trade diversion effect. During the same period, imports originated outside the boundaries of MERCOSUR have also grown significantly; however there has been a dissimilar behaviour depending on the origin of imports (see Figure 2)<sup>4</sup>. *Laird (1997) characterizes the growth of MERCOSUR imports from third countries as "impressive" and suggests that "the growth of intra-trade cannot be attributed uniquely to trade diversion resulting from the creation of MERCOSUR as, apart from certain years and partners, trade has also been growing strongly with other countries"* (quoted in Nagarajan, 1998).

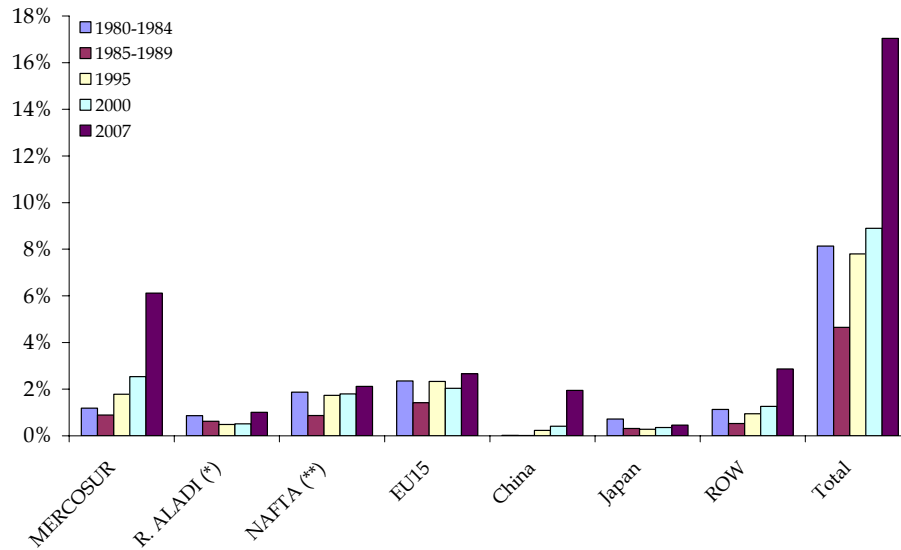
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<sup>2</sup> The rationale behind this measure is that greater trade flows are associated with lower trade restrictions. However, as Harrison and Revenga (1995) point out, trade flows are at best an imperfect proxy of the restrictiveness of trade policy. An early response to this critic has been to control by other variables, such as country size, foreign capital inflows, etc. and to use as a measure of openness the deviation between the observed and predicted trade flows.

<sup>3</sup> After the massive devaluation of the local currency in the year 2002, the openness ratio more than doubled (at current prices).

<sup>4</sup> China's figure is explained, mostly, by the very low values at the beginning of the period here considered.

**Figure 1**  
**Argentina: import penetration ratios**  
**(Current USD)**



(\*) Includes Mexico. (\*\*) Excludes Mexico. Source: own based on Centro de Economía Internacional, (Ministerio de Relaciones Exteriores, Comercio Internacional y Culto), COMTRADE and World Development Indicators.

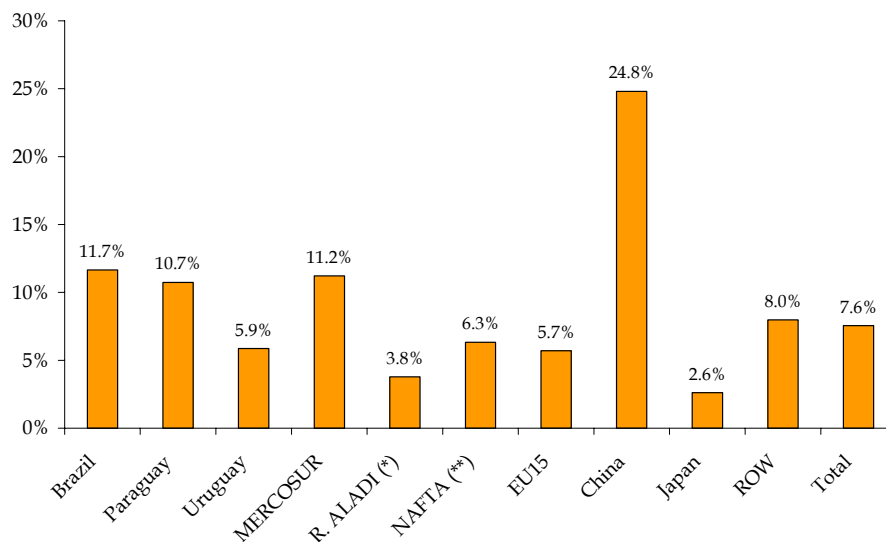
However, just looking at changes in import shares could give us a misleading picture, since growth of imports from a given country could be, in part, explained by an increase in this country's share in world trade, and not necessarily to be the result of a preferential treatment. To control for this, and following Yeats (1998) in Table 1 we present the evolution of "import intensity ratios" where the share of country  $j$  in Argentina's total imports ( $M_{A,j}/M_A$ ) is normalised by the share of country  $j$  in total world exports ( $X_j/X_W$ ):

$$I_{A,j} = \frac{M_{A,j}/M_A}{X_j/X_W}$$

where  $M_{A,j}$  are Argentina's imports from country  $j$ ,  $M_A$  are Argentina's total imports,  $X_j$  are country  $j$ 's total exports, and  $X_W$  are World exports. If  $I_{A,j}$  takes a value above (below) one, countries have greater (smaller) bilateral trade than could be expected based on the partner's share in World trade. As explained by Yeats (1998), this index calculated at a single point of

time is of limited utility, however, its evolution over time can show if the two countries are experiencing an increasing, or decreasing, tendency to trade with each other.

**Figure 2**  
**Argentina's imports**  
**Average growth rates 1986-2006<sup>(1)</sup>**



(1) Obtained from the regression  $\ln(M) = a + b.t$ , where M: imports, and t: time. (\*) Includes Mexico. (\*\*) Excludes Mexico. Source: own based on Centro de Economía Internacional, (Ministerio de Relaciones Exteriores, Comercio Internacional y Culto), COMTRADE and World Development Indicators.

As we can appreciate by looking at Table 1, Argentina, not surprisingly, shows a much larger propensity to import from other MERCOSUR countries, the same it happens, but to a lower extent, with countries that belong to ALADI. However, when looking at the evolution of the index over time this has increased substantially in the cases of imports from Brazil, Paraguay, and mostly from China. For all other partners, the index has diminished between the beginning and end of the period here considered. In the case of Uruguay, the other MERCOSUR member, the index has shown a more unstable behaviour.

**Table 1**  
**Argentina: Import Intensity Ratios**

	1981-1984	1985-1989	1995	2000	2007
Brazil	8.81	12.31	21.61	29.01	26.51
Paraguay	49.16	48.34	36.61	83.53	111.26
Uruguay	24.7	35.76	32.79	45.73	29.9
MERCOSUR	10.02	13.84	22.37	30.48	28.01
Rest of ALADI (*)	3.35	5.88	2.23	1.48	1.86
NAFTA (**)	1.32	1.12	1.39	1.19	1.03
EU15	0.75	0.73	0.79	0.65	0.44
China	0.16	0.14	0.98	1.15	1.23
Japan	0.99	0.64	0.39	0.52	0.49

(\*) Includes México. (\*\*) Excludes México. Source: own based on COMTRADE.

## 2. The extensive margin of Argentina's imports

For a long time, world trade has grown faster than world product. To explain this phenomenon implies not few challenges. While trade liberalisation has been pointed out as the main reason behind increasing trade flows, the magnitude of the reduction of tariff barriers has been rather small (Debaere y Mostashari, 2006). New hypotheses have recently attracted the attention of researchers. One of these hypotheses points out to changes in the set of goods that are traded. The finding that these changes are not marginal has lead to the conjecture they may be in part responsible for the rapid growth of trade flows. From the works of Helpman, Melitz and Rubinstein (2004), Hummels and Klenow (2005), Evenett and Venables (2002) and Kang (2004) we know countries differ in the set of goods they trade. Moreover, the set of traded goods changes over time. Yi (2003) is one of the first who suggested that changes in the set of goods countries trade may explain the increase in the volume of trade during the last decades despite of the small reductions in trade barriers. Kehoe and Ruhl (2004) and Ruhl (2005) suggest a similar hypothesis. Ruhl (2005) shows that

permanent reductions of tariffs affect the set of goods traded through the entrance of new firms into the world markets.

In the case of preferential trade agreements, which mean a discriminatory reduction of trade barriers, we may expect an increase in trade flows among members of the agreement, in some cases this is at the expense of trade with the ROW. The theory of economic integration is not conclusive with respect to the welfare effects of such agreements. On the other hand, the empirical evidence is more suggestive (Venables, 2003). In the case of customs unions among developed countries the evidence shows a convergence of income (Ben-David, 1993, 1996). The opposite outcome arises when less developed countries integrate with each others, an example of this is the case of the East African Common Market (Venables, 2003). A reason behind these opposite results is based on the comparative advantages of the countries involved in the integration agreements, relative to other member of the agreement as well as relative to the ROW (Venables, 2003, 2005). This argument suggests that countries with intermediate comparative advantages benefit the most, while countries with extreme comparatives advantages suffer most of the burden of trade diversion. Venables (2005) analyses the different mechanisms by which MERCOSUR may have produced an unequal distribution of costs and benefits among its four members.

## **2.1. Terminology and data**

In this section we analyse descriptively the changes across countries of Argentina's extensive margin of imports. We consider two years, 1992 and 2007. The choices of both years are restricted by data availability, 1992 is the first year for which Argentina's imports are recorded using the Harmonised System Classification (HS); 2007 is the last year for which we have detailed data on the origin of Argentina's imports. Unless otherwise stated, we work with data at six digits of the HS, and we include only those 6-digit codes which have

been present in all versions of the HS<sup>5</sup>, we call these “permanent goods” This choice leaves us with a total of 4209 goods or group of goods<sup>6,7</sup>. Unless otherwise stated, from the 4,209 goods or group of goods we use only 3,786 corresponding to manufactures<sup>8</sup>. From all countries constituting a potential source of imports, we work with 178 countries or groups of countries<sup>9</sup>, this leaves us with 673,908 potential bilateral flows. In the Tables below we restrict the analysis to 13 countries, the 11 ALADI partners, China, one of the fastest growing sources of Argentina’s imports, and the United States, historically the largest single source country, now second, after Brazil, and with China rapidly disputing this position. All other countries are grouped together in what we call Rest of the World (ROW).

**Table 2**  
**Argentina’s imports in 2007(#)**  
**(thousands US dollars)**

Total Imports (all origins)	42.459.429
Manufactures (all origins)	39.801.512
Manufactures (items included in the sample, all origins)	31.679.873

(#) Excluding imports of unknown origin. Source: own based on COMTRADE.

Finally, we need to define what we understand for new and disappearing goods. In each case we use three alternative definitions:

<sup>5</sup> Since 1992 there have been four versions of the Harmonised System, 1992, 1996, 2001 and 2007.

<sup>6</sup> Unless we need to be more precise, we are going to use the words “item”, “good” or “group of goods” indistinctly

<sup>7</sup> Working with a greater detail of the HS, 8 or 10 digits, would have allowed to be closer to what might constitute a “proper definition” of a “good”, however, countries change very often the definitions of items at this level of detail, meaning that we would have to sacrifice an important proportion of import flows.

<sup>8</sup> We consider as manufactures all HS 6-digit items that correspond to categories 15 to 36 of the International Standard Industry Classification (ISIC), Revision 3.

<sup>9</sup> The following groups of countries are used: Yugoslavia (Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Slovenia); Czechoslovakia (Czech and Slovak Republics); United States (United States, Puerto Rico and Virgin Islands); Soviet Union (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan); Belgium-Luxembourg (Belgium and Luxembourg).

#### New Goods:

NG1: A good  $i$ , imported from country  $j$ , is considered new if imports in 2007 were positive, and they were zero in 1992.

NG2: A good  $i$ , imported from country  $j$ , is considered new if imports in 2007 were larger than 2,000 US dollars, and they were equal or less than 2,000 US dollars in 1992.

NG3: A good  $i$ , imported from country  $j$ , is considered new if imports in 2007 were larger than 5,000 US dollars, and they were equal or less than 5,000 US dollars in 1992.

#### Disappearing Goods:

DG1: A good  $i$ , imported from country  $j$ , is considered disappearing if imports in 2007 were zero, and they were positive in 1992.

DG2: A good  $i$ , imported from country  $j$ , is considered disappearing if imports in 2007 were equal or less than 2,000 US dollars, and they were larger than 2,000 US dollars in 1992.

DG3: A good  $i$ , imported from country  $j$ , is considered disappearing if imports in 2007 were equal or less than 5,000 US dollars, and they were larger than 5,000 US dollars in 1992.

Let us say that using the same cut off point for all countries may introduce an asymmetry in the way different source countries are treated, since it is quite normal to expect that imports across source countries will show a large degree of variability.

## 2.2. Positive import flows

Table 3 shows the proportion of positive trade flows with different trade partners. The first result that emerges is quite clear, a very low percentage of the potential trade flows takes place when considering all sources. Also, there is a very large heterogeneity across partners; not surprisingly, the United States and Brazil show the largest values.

Comparing the figures for 1992 and 2007, the share of items with positive flows increased between 10% and 33%, depending on the definition of what constitutes a positive import flow. For more than a half of ALADI partners, the proportion of items with positive imports felt between the two years. Relative to 1992 values, the largest reductions are for Uruguay, Chile, and Bolivia, and also Ecuador and Venezuela when we use a more restrictive criterion of what constitutes a traded item. Surprisingly, exports from first three countries are among the ones (together with Brazil and Paraguay) Argentina is granting almost complete free access. A possible explanation for this finding is that together with the increasing tariff preferences Argentina grants to MERCOSUR countries and Bolivia and Chile, the country also implemented a reduction of its MFN rates, this might have eroded the market access advantage enjoyed by these countries, measured as the difference between the MFN rate and the tariff applied on imports from these countries. However, as Table 4 shows, this has not been the case for Chile and Bolivia, countries that in 2007 enjoyed a much larger trade preference than in 1992.<sup>10</sup> In the other extreme, the countries showing the largest increases in the proportion of positive flows are Mexico, Peru, and Colombia. Cuba also shows a very large improvement, but the values are still very low. China also showed a large increase, with figures that are almost three times the values for 1992. This change means now the country is the first or second, depending on the criterion of what constitutes a traded

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<sup>10</sup> For Bolivia, in 421 cases the level of preference felt between 1992 and 2007, in 319 they remained constant, while in the remaining 3,046 they increased. For Chile the figures are 519; 272 and 2,995 respectively.

good, source of Argentina's imports, together with the United States, when considering the number of positive flows. Brazil moved from second to third place, showing in 2007 almost the same figures as in 1992, if not slightly lower.

**Table 3**  
**Proportion of Positive Import Flows**

Partner		1992 (a)	2007 (a)	1992 (b)	2007 (b)	1992 (c)	2007 (c)
Bolivia	(&)	6.42%	4.52%	3.78%	2.25%	2.51%	1.72%
Brazil	(&)	65.32%	66.80%	61.20%	59.46%	57.74%	56.44%
Chile	(&)	49.29%	27.92%	42.10%	19.49%	36.87%	17.14%
Colombia	(&)	5.55%	10.06%	4.17%	5.12%	3.65%	4.20%
Cuba	(&)	0.21%	0.42%	0.13%	0.24%	0.11%	0.21%
Ecuador	(&)	3.14%	2.69%	1.98%	1.29%	1.53%	1.11%
Mexico	(&)	13.60%	29.56%	11.57%	19.57%	10.41%	17.04%
Paraguay	(&)	6.21%	6.39%	4.83%	5.02%	3.83%	4.54%
Peru	(&)	5.20%	10.94%	4.15%	5.84%	3.54%	4.60%
Uruguay	(&)	32.51%	17.01%	28.37%	13.55%	25.15%	12.33%
Venezuela	(&)	4.36%	3.65%	3.25%	1.74%	2.67%	1.40%
China	(&)	22.05%	67.22%	19.57%	60.46%	17.99%	57.58%
United States	(&)	79.98%	72.16%	75.78%	60.14%	71.69%	55.41%
ROW	(*)	3.55%	5.19%	2.96%	3.52%	2.57%	3.02%
All origins (#)	(#)	4.94%	6.60%	4.21%	4.69%	3.72%	4.11%

(&) 3,786 potential import flows; (\*) 624,690 potential import flows; (#) 673,908 potential import flows; (a) If imports are positive; (b) If imports larger than 2,000 US dollars; (c) If imports larger than 5,000 US dollars. Source: own based on COMTRADE.

**Table 4**

Partner	Average Import Tariff (%)		Average Preference (% points)	
	$\tau_{1992}$	$\tau_{2007}$	$MFN_{1992} - \tau_{1992}$	$MFN_{2007} - \tau_{2007}$
Bolivia	18.41	0.41	2.44	11.73
Brazil	6.67	0.02	14.18	12.12
Chile	16.63	0.19	4.22	11.94
Colombia	19.35	5.28	1.49	6.85
Cuba	20.80	10.00	0.04	2.13
Ecuador	18.41	4.00	2.43	8.13
Mexico	15.53	9.14	5.32	3.00
Paraguay	8.08	0.02	12.77	12.12
Peru	19.36	5.33	1.49	6.80
Uruguay	7.35	0.02	13.50	12.12
Venezuela	19.66	5.39	1.19	6.75

Note: the MFN rates include the Statistic Duty.  $MFN_{1992} = 20.86$ ;  $MFN_{2007} = 12.13$ .

Source: own based on MERCOSUR and ALADI.

### 2.3. New and Disappearing goods

Tables 5 and 6 show the importance of new and disappearing. From Table 5 we have, considering all source countries, that in 2007 just a small proportion of the potentially imported goods were not so in 1992. However, the value of these imports represented about 20% of Argentina's imports in 2007.

When distinguishing among country sources, China, and to a less extent Mexico and Brazil, show the largest shares of new goods. However, while for the China and Mexico, new goods represented an important share of total imports in 2007; this was not the case for Brazil, where new goods just explained a 3.5%/4.5% of Argentina's imports from this country.

For most of other ALADI countries, new goods represented no more than 10% of all potential import flows in 2007; however, as it happens with China and Mexico, they explain a very large proportion of the value of imports, the exception being Chile. For the United States, the shares of new goods are relatively similar, if not a bit larger, than the shares of import values.

Table 6 shows the importance of disappearing goods. At the aggregate level the share of disappearing goods is very low, just about 2%, however, considering the value imported by Argentina in 1992, these goods represented between 15%-20% of total imports in that year. Chile, United States, Uruguay and Brazil, show the largest shares of disappearing goods between 1992 and 2007, however, while for Chile and Uruguay, disappearing goods explained between 30%-46% of these countries exports to Argentina in 1992, for Brazil and United States the importance in value terms is low, especially in the case of Brazil.

Like with new goods, for most of other ALADI partners, disappearing goods explain a very large percentage of Argentina's imports from these countries during 1992, even when they represent a small share of potential trade flows. A case emerging clearly is Venezuela,

disappearing goods are just 2.4%-3.5% of potential import flows, but they explain above 90% of Argentina's imports in 1992.

In the case of China, both in terms of the number of potential import flows and import values, disappearing goods were just a small proportion.

**Table 5**  
**New Goods in 2007**

		Proportion of Potential Flows			Proportion of Imports in 2007		
		(a)	(b)	(c)	(a)	(b)	(c)
Bolivia	(&)	2.93%	1.56%	1.32%	34.0%	39.8%	40.3%
Brazil	(&)	12.04%	11.04%	11.41%	3.6%	3.9%	4.5%
Chile	(&)	7.82%	6.52%	6.39%	8.0%	9.7%	11.0%
Colombia	(&)	7.90%	3.94%	3.33%	57.0%	60.7%	61.0%
Cuba	(&)	0.37%	0.18%	0.16%	39.0%	39.0%	38.9%
Ecuador	(&)	2.14%	0.87%	0.77%	17.5%	17.5%	17.5%
Mexico	(&)	21.21%	13.84%	12.26%	30.9%	32.5%	33.3%
Paraguay	(&)	4.44%	3.46%	3.20%	60.0%	73.8%	77.5%
Peru	(&)	9.03%	4.78%	3.70%	76.8%	79.3%	81.0%
Uruguay	(&)	6.47%	5.26%	4.99%	23.5%	25.1%	26.4%
Venezuela	(&)	2.77%	1.35%	1.08%	65.3%	66.2%	66.3%
China	(&)	45.91%	42.13%	40.83%	34.4%	38.9%	41.1%
United States	(&)	6.55%	5.36%	5.94%	3.8%	4.0%	4.1%
ROW	(*)	2.92%	1.88%	1.65%	33.2%	35.0%	36.7%
All origins	(#)	3.43%	2.30%	2.06%	18.2%	19.6%	20.7%

(&) 3,786 potential import flows; (\*) 624,690 potential import flows; (#) 673,908 potential import flows; (a) If imports are than positive in 2007 and zero in 1992; (b) If imports larger than 2,000 US dollars in 2007 and equal or less than 2,000 US dollars in 1992; (c) If imports larger than 5,000 US dollars in 2007 and equal or less than 5,000 US dollars in 1992. Source: own based on COMTRADE.

## 2.4. Import variety

In this section we use an indicator proposed by Feenstra (1994), and already applied by Feenstra and Kee (2003), Kang (2004), among others, to measure the changes in the degree of import variety for Argentina between 1992 and 2007, from each source country  $j$ . This index is based on the theory of index numbers for a CES aggregator function. Let us define  $I_{j,t}$  as the set of goods a given country (Argentina in our case) imports from country  $j$  in the year

$t$ . Suppose that the set of all available goods to be imported (from all sources) in year  $t$  is given by  $I_t$ . Then, an index of import variety (IIV) from country  $j$  in year  $t$  can be defined as:

$$IIV_{j,t} = \frac{\sum_{i \in I_{j,t}} v_{i,t}^T}{\sum_{i \in I_t} v_{i,t}^T}$$

where  $v_{i,t}^T$  is total imports (from all sources) of good  $i$  in year  $t$ . As we can clearly appreciate,  $IIV_{j,t}$  is the proportion of Argentina's total imports of products that are imported from country  $j$ . For each source country  $j$ , the index depends on the set of goods Argentina imports from country  $j$  but not on the value of these imports, except as these imports affect Argentina's worldwide imports.

**Table 6**  
**Disappearing Goods in 2007**

		Proportion of Potential Flows			Proportion of Imports in 1992		
		(a)	(b)	(c)	(a)	(b)	(c)
Bolivia	(&)	4.8%	3.1%	2.1%	24.4%	26.1%	27.6%
Brazil	(&)	10.6%	12.8%	12.7%	3.8%	4.8%	5.2%
Chile	(&)	29.2%	29.1%	26.1%	30.4%	37.1%	38.0%
Colombia	(&)	3.4%	3.0%	2.8%	46.4%	51.4%	53.2%
Cuba	(&)	0.2%	0.1%	0.1%	15.2%	13.9%	13.1%
Ecuador	(&)	2.6%	1.6%	1.2%	21.8%	21.7%	21.4%
Mexico	(&)	5.3%	5.8%	5.6%	42.2%	53.4%	54.4%
Paraguay	(&)	4.3%	3.3%	2.5%	53.1%	53.6%	53.8%
Peru	(&)	3.3%	3.1%	2.6%	78.1%	81.7%	82.0%
Uruguay	(&)	22.0%	20.1%	17.8%	43.8%	46.0%	46.3%
Venezuela	(&)	3.5%	2.9%	2.4%	93.7%	94.6%	94.6%
China	(&)	0.7%	1.2%	1.2%	1.4%	3.0%	3.2%
United States	(&)	14.4%	21.0%	22.2%	8.1%	11.1%	12.6%
ROW	(*)	1.3%	1.3%	1.2%	18.5%	23.1%	25.0%
All origins	(#)	1.8%	1.8%	1.7%	14.7%	18.2%	19.6%

(&) 3,786 potential import flows; (\*) 624,690 potential import flows; (#) 673,908 potential import flows; (a) If imports are than positive in 2007 and zero in 1992; (b) If imports larger than 2,000 US dollars in 2007 and equal or less than 2,000 US dollars in 1992; (c) If imports larger than 5,000 US dollars in 2007 and equal or less than 5,000 US dollars in 1992. Source: own based on COMTRADE.

When calculating the variety index for different sources over different years, Feenstra and Kee (2003) suggest having a common comparison country. Following their application, we use Argentina worldwide imports from all source countries, which are also averaged

over the period 1992-2007. Working this way, the variety index for imports from country  $j$  in the year  $t$  is calculated as follows:

$$IIV_{j,t} = \frac{\sum_{i \in I_{j,t}} v_i^A}{\sum_{i \in I_A} v_i^A}$$

where  $I_A \equiv \bigcup_{j,t} I_{j,t}$  is the set of all goods imported by Argentina from all source countries over the period considered, and  $v_i^A$  is imports of good  $i$  from all source countries averaged over the period 1992-2007.

In Appendix 1 we report the Extensive Margin Indices for 73 countries Argentina imported systematically from during the period 1992-2007. Not surprisingly, the largest indices correspond to developed and diversified economies, and countries sharing borders with Argentina. If we consider the countries with the ten highest indices in 1992, in only two cases there has been a significant change in their rankings, Chile and Belgium-Luxembourg, which back away nine and six positions respectively. Other countries which lost several positions are Panama, Venezuela, Paraguay, Hong Kong, Colombia and Uruguay, in this last case, the country moved from the 11<sup>th</sup> to the 22<sup>nd</sup> place between 1992 and 2007. On the other hand, among the countries which improved their ranking between 1992 and 2007, a case that emerging clearly is China which moved from 21<sup>st</sup> to the 5<sup>th</sup> place. Also, Mexico (from 17<sup>th</sup> to 10<sup>th</sup> place) and Canada (from 20<sup>th</sup> to 15<sup>th</sup> place) showed an improvement in their rankings.

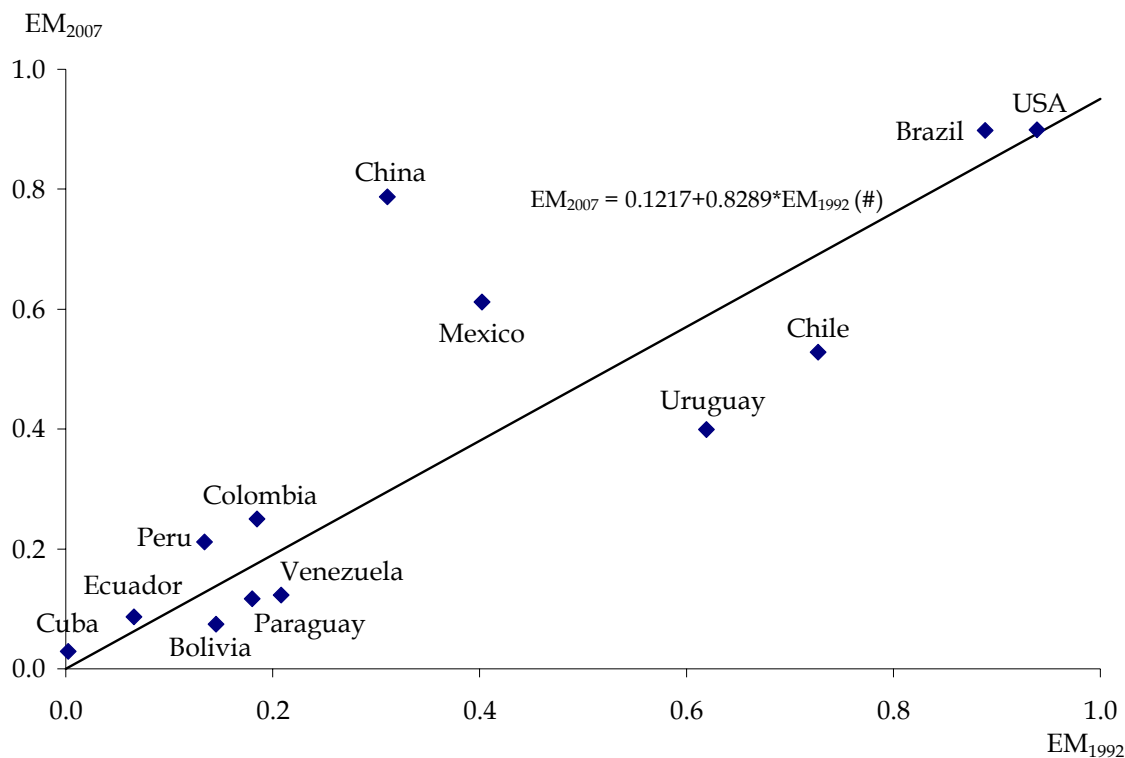
However, in despite of these and other changes, and as Figure 3 shows, is still possible to observe a stable pattern across time. Another message emerging from Figure 3 is that with the exception of Brazil, the other four countries which benefited the most of Argentina discriminatory liberalisation, Bolivia, Chile, Paraguay and Uruguay, showed in 2007 a lower index than in 1992.

In Table 7 we report the Extensive Margins for the twenty-two 2-digit sectors of the International Standard Industry Classification (Revision 3) for five selected countries, Brazil

and the United States, which show the largest, and also relatively stable, aggregate indices; China and Mexico, which experienced an important increase between 1992 and 2007; and Chile and Uruguay which indices felt considerably between these two years.

In the case of Brazil, 11 out of 22 sectors experienced a decrease in their indices; however, only in Manufacture of paper and paper products (code 21), and Manufacture of coke, refined petroleum products and nuclear fuel (code 23), these reductions were of some importance, 13% and 54%. Among the other sectors which indices increased, emerges clearly Manufacture of tobacco products (code 16), with a 276% change. For Manufacture of motor vehicles, trailers and semi-trailers (code 34), which represent almost one third of Argentina's imports from Brazil, the index shows a slight reduction.

**Figure 3**  
**Extensive Margin Index for selected countries**



(#) Based on a sample of 73 countries Argentina consistently imported from during the period 1992-2007

**Table 7**  
**Extensive Margins by Sectors for selected countries**  
**Changes between 1992 and 2007**

Sector (ISIC Rev. 3)	1992						2007					
	Brazil	Chile	China	Mexico	USA	Uruguay	Brazil	Chile	China	Mexico	USA	Uruguay
15	0.83502	0.78071	0.02800	0.24210	0.71035	0.46607	0.86503	0.61529	0.44210	0.40944	0.59310	0.43362
16	0.26587	0.53230	0.00000	0.00000	0.99994	0.18704	0.99994	0.10789	0.00000	0.21611	0.99994	0.10789
17	0.88476	0.73114	0.33963	0.18723	0.85372	0.62415	0.94332	0.38701	0.88358	0.14167	0.68126	0.33399
18	0.86427	0.97673	0.69604	0.26275	0.97503	0.89970	0.81943	0.57998	0.98921	0.41777	0.80046	0.77592
19	0.99504	0.99550	0.88871	0.27296	0.95565	0.89327	0.99646	0.64263	0.99794	0.43735	0.89544	0.45865
20	0.94250	0.94152	0.07830	0.00803	0.96494	0.48506	0.94432	0.89176	0.54044	0.29248	0.94652	0.21406
21	0.98083	0.74352	0.05647	0.27797	0.83518	0.66791	0.85731	0.68413	0.63434	0.22988	0.93513	0.25234
22	0.97995	0.99836	0.63875	0.89718	0.99980	0.81394	0.99790	0.95507	0.99589	0.96018	0.99817	0.89651
23	0.55898	0.22260	0.46918	0.00000	0.60295	0.01390	0.25613	0.19957	0.50615	0.00000	0.85335	0.15325
24	0.79665	0.36633	0.15782	0.46798	0.93086	0.43352	0.86054	0.43149	0.79039	0.67363	0.96429	0.36361
25	0.98804	0.95354	0.45710	0.44612	0.99930	0.84421	0.98283	0.77938	0.96563	0.75151	0.97953	0.60382
26	0.90248	0.64198	0.19670	0.11383	0.94703	0.40188	0.95380	0.59648	0.89999	0.52333	0.86042	0.35602
27	0.81284	0.39590	0.01464	0.32282	0.65141	0.14955	0.85796	0.32879	0.57914	0.22495	0.66805	0.11676
28	0.95600	0.85795	0.58870	0.29862	0.95522	0.61481	0.98899	0.64727	0.92304	0.67892	0.93216	0.42149
29	0.94975	0.78084	0.39750	0.22945	0.97898	0.59205	0.92483	0.57837	0.89186	0.52434	0.95058	0.28283
30	0.94739	0.94178	0.87335	0.84230	1.00000	0.93918	0.93128	0.83529	0.99980	0.94980	0.98748	0.77079
31	0.98165	0.88472	0.54186	0.44075	0.99950	0.72728	0.97660	0.53054	0.96957	0.82501	0.98201	0.35447
32	0.98892	0.98095	0.90031	0.51404	1.00000	0.95249	0.95733	0.04399	0.99991	0.91583	0.99983	0.32782
33	0.79159	0.79576	0.41066	0.20614	0.99980	0.68185	0.84276	0.44794	0.96152	0.75110	0.97691	0.33387
34	0.99334	0.99250	0.19254	0.65148	0.98739	0.85941	0.98097	0.66075	0.65927	0.81007	0.87392	0.63504
35	0.30300	0.34731	0.25484	0.20775	0.92836	0.34262	0.29776	0.01723	0.32542	0.03304	0.71406	0.03444
36	0.91796	0.96634	0.65152	0.22664	0.99235	0.77378	0.86542	0.57496	0.98910	0.67401	0.94400	0.37886
MEAN (*)	0.88867	0.72712	0.31052	0.40237	0.93872	0.61906	0.89772	0.52775	0.78736	0.61190	0.89942	0.39925
MEAN (**)	0.84713	0.76492	0.40148	0.32346	0.92126	0.60744	0.86822	0.52435	0.77020	0.52002	0.88803	0.39118
SD	0.20840	0.24382	0.29448	0.24144	0.11841	0.26961	0.20001	0.25967	0.27390	0.29980	0.12167	0.22629
CV	0.24601	0.31876	0.73349	0.74642	0.12853	0.44385	0.23037	0.49521	0.35562	0.57651	0.13701	0.57847

(\*) Weighted average. (\*\*) Simple average. Source: own based on COMTRADE.

For the United States, Chile and Uruguay, especially the two last countries, most sectors showed in 2007 lower indices than in 1992. However, while in the case of United States, most reductions are relatively small, the opposite happens for Chile and Uruguay, with average reductions of 31% and 36% respectively. Finally, China and Mexico's indices show the opposite behaviour, with all sectors increasing their value between 1992 and 2007 in the case of China (average increase of 92%), and 16 out of 22 sectors in the case of Mexico (average increase of 61%).

### 3. Tariff preferences and the extensive margin

At the same time that integration under MERCOSUR and other trade agreements deepened, there was an important increase in import flows from countries benefiting from a preferential treatment. Thus, it becomes a relevant issue to look at the question if increasing imports from countries benefiting from a preferential treatment has not been at the expense of trade with the ROW, with the costs in terms of welfare that this may imply. Following Debaere and Mostashari (2006) the problem we want to analyse can be expressed as follows:

$$Y_{i,j,2007} = \beta_1 Y_{i,j,1992} + \beta_2 \Delta \tau_{ij} + \beta_3 \Delta Pref_{ij} + \eta' C + \gamma' S + u_{ij} \quad (1)$$

where:

$i$ : defined at 6 digits of the Harmonized System

$Y_{i,j,2007}$ : dummy variable equal to 1 if good  $i$  was imported from country  $j$  in 2007, and 0 otherwise;

$Y_{i,j,1992}$ : dummy variable equal to 1 if good  $i$  was imported from country  $j$  in 1992, and 0 otherwise;

$\tau_{ij}$ : tariff rate on imports of good  $i$  from country  $j$ ;

$Pref_{ij}$ : tariff preference granted to imports of good  $i$  from country  $j$ ;

C: a group of country dummies;

S: a group of sector dummies (defined at 4 digits of the HS),

$\Delta$ : is the difference operator (2007 values less 1992 values).

$Pref_{i,j}$  is measured as  $t_j - \tau_{i,j}$ , where  $t_i$  is the Most Favoured Nation (MFN) rate on imports of good  $i$  plus the Statistical Duty (Tasa de Estadística<sup>11</sup>). The way  $\tau_{i,j}$  and  $Pref_{i,j}$  are defined means coefficient  $\beta_2$  is expected to be negative, while we expect coefficient  $\beta_3$  to be positive.

Because of the dichotomy nature of the dependent variable, we estimate the model with a Probit, such that the probability of good  $i$  being imported from Brazil is:

$$\Pr(Y_i = 1|X) = \Phi\left(X' \frac{B}{\sigma}\right)$$

where  $X$  is the vector of explanatory variables,  $B = [\beta_1, \beta_2, \beta_3, \eta]$  is the vector of coefficients to be estimated, and  $\sigma$  is the standard deviation of the error term  $u$ .  $\Phi(\cdot)$  is the cumulative standard normal distribution.

As explained at length in Debaere and Mostashari (2006) the estimated equation can be directly related to a Ricardian Model with a continuum of goods (Dornbusch, Fischer and Samuelson, 1977, later extended to a multicountry setting by Wilson, 1980). Conditional on the status at the initial period, good  $i$  is more likely to be imported from country  $j$ , if on the one hand its costs relative to Argentina's production costs decrease (measured by a reduction in  $\tau_{i,j}$ ), and on the other hand, if the costs of importing from country  $j$  relative to other countries go down (measured by an increase in  $t_i - \tau_{i,j}$ ).

As pointed out by Debaere and Mostashari (2006), an advantage of the specification adopted here is that it allows disentangling the influence of the tariff imposed on a given

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<sup>11</sup> The Statistical Duty is an ad valorem charge Argentina applies on most imports with the "declared" objective of financing a system of trade statistics. In 1992 the country increased this charge from 3% to 10%. After several complaints in the WTO, and an adverse decision against the Argentinean position, the country reduced it to a 0.5% rate in the year 1999, also setting a maximum limit to the amount paid by the importer agent.

specific country and the change in this tariff relative to other potential import sources. In this way, it allows to capture the effect of trade diversion on the extensive margin separately from the influence of a decrease in only one country's tariff. The effect of a change in the tariff applied on imports from the ROW, holding constant the tariff on imports from the country which is granted a preferential treatment is measured by  $\beta_3$ . Instead, if  $t_{ij}$  remains constant while  $\tau_{ij}$  changes, the total effect is measured by  $(\beta_2 - \beta_3)$ <sup>12,13</sup>.

The inclusion of a variable to control for the initial status, that is, whether or not a good was imported from a given country before any tariff change, can be justified, for example, by the existence of fixed costs associated with starting a new trade relationship.

The country and sector dummy variables help to account for unobserved heterogeneity. Following Greene (2002, 2004) we do this by "brute force", by creating and including a complete set of dummy variables.

Before looking at the results, an issue we need to deal with is the problem of the "incidental parameters" that emerges, with few exceptions, in nonlinear models with fixed effects, which introduces a bias in the estimates. *This problem arises directly from the unobserved heterogeneity. One estimates one coefficient for these unobserved effects for a group that is of fixed [finite] size. In nonlinear models any estimation error of such estimates introduces bias in the estimates of the model parameters of interest. Moreover, this error will, given the fixed group size, not vanish as the sample size increases* (Debaere and Mostashari, 2006). However this bias should not be important for group sizes that are large enough, like in the case of our sample. A well cited example here is Heckman (1981), who obtains through a Monte Carlo experiment that the bias problem is not such for group sizes at least of eight observations. More recently,

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<sup>12</sup> To be more precise, the effects are given by the marginal effects associated with coefficients  $\beta_2$  and  $\beta_3$ . For a linear model, the marginal effects are the coefficients themselves.

<sup>13</sup> If, as expected,  $\beta_2$  is negative and  $\beta_3$  is positive, a reduction in  $\tau_{ij}$  holding constant  $t_{ij}$  would increase the probability of good  $i$  being imported from country  $j$ .

Greene (2002, 2004) reinforce the idea that the bias diminishes rapidly as group sizes increase; by he puts a note of caution on Heckman's "optimistic" result.<sup>14</sup>

### 3.1. Results<sup>15</sup>

Tables 8 and 9 report the results from the equation above when using two alternative criteria of what constitutes an imported good. Firstly, we consider good  $i$  is imported from country  $j$  in year  $t$  if imports are larger than 2,000 US dollars. Secondly, we use a more restrictive criterion, considering good  $i$  is imported from country  $j$  in year  $t$  if imports are larger than 5,000 US dollars. In the two cases we run alternative specifications depending on the interactions among the explanatory variables<sup>16</sup>.

The first result that emerges from Tables 8 and 9 is that independently of the sample we use, the variable which control for if good  $i$  was or not imported in 1992 is always positive and statistically significant, however the coefficients for the marginal effects imply that, in average, the fact that good  $i$  was imported in 1992 ( $Y_{1992}=1$ ) increases the probability of being imported in 2007 by just 14%-25%. Counterintuitively, this effect is larger in the case of the less restrictive sample. In the case of the variables measuring the changes in the tariffs applied on imports from country  $j$  ( $\Delta\tau_{i,j}$ ) we obtain the expected negative sign, meaning that the reduction of  $\tau_{i,j}$  increases the probability of good  $i$  being imported from country  $j$ , the estimated coefficients are statistically significant more than half of the cases. On the other hand, the coefficients for the variable  $\Delta Pref_{i,j}$  is mostly not statistically significant, and in the

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<sup>14</sup> Estimating the good fixed effects at 4-digit of the Harmonized System means that 20% of the groups have the minimum group size of 11, one for each country included into the sample; 19% of groups have a size of 22, while all the remaining groups have a size at least as large as 33.

<sup>15</sup> We also run equation (1) by linear OLS. The results, not reported here, do not differ substantially from the ones presented below.

<sup>16</sup> We also run the regressions using a less restrictive criterion, where good  $i$  is considered to be imported from country  $j$  in year  $t$  if imports are positive. The qualitative results are similar to the ones presented here; however, the Hosmer-Lemeshow goodness of fit test rejects the null hypothesis that the model is well fitted.

two occasions when this is not the case, they show a negative sign, the opposite to what is expected.

When allowing for the interaction of the tariff and preference variables with country-group dummies, the results shows that the reduction of intra-MERCOSUR tariffs between 1992 and 2007 had a significant effect on the probability of good  $i$  being imported in 2007 from the other three members of the agreement. For the interaction with the dummy variable for Bolivia and Chile the results are less clear, and when they are statistically significant, the coefficient shows a positive sign. For the interaction of  $\Delta Pref_{i,j}$  and the country-group dummy variables, the coefficients are always not significant.

From the interaction of  $\Delta \tau_{i,j}$  and  $\Delta Pref_{i,j}$  with the variable controlling for good  $i$  being imported in 1992 ( $Y_{1992}$ ), we obtain that the effect of changes in  $\tau_{i,j}$  was lower for those goods which were already imported in 1992 ( $Y_{1992}=1$ )<sup>17</sup>, while the effect of  $\Delta Pref_{i,j}$  shows no statistically difference depending on good  $i$  being or not imported in 1992.

Next, we allow for the interaction of  $\Delta \tau_{i,j}$  and  $\Delta Pref_{i,j}$  with two variables that intend to proxy for the value or productivity level associated with good  $i$ . We use a variable which measures the income, or productivity, level associated with a product  $i$ , relative to the productivity level of country  $j$ 's exports. The index measuring the income level associated with product  $i$  is calculated following Hausmann et al. (2005)  $PRODY_i$  index, which is defined as:

$$PRODY_i = \sum_j \frac{x_{i,j}/X_j}{\sum_j (x_{i,j}/X_j)} GDPpc_j$$

where  $x_{i,j}$  are exports of good  $i$  (to all destinations) by country  $j$ , and  $X_j$  are total exports by  $j$ .

The  $PRODY$  index for each good  $i$  is then normalised by an index measuring the productivity

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<sup>17</sup> Remembering that the coefficient for  $\tau_{i,j}$  is negative, a positive coefficient, as we obtained, for the interaction of  $\tau_{i,j}$  and  $Y_{1992}$  means the effect of a change in  $\tau_{i,j}$  is lower for goods which were already imported in 1992.

level associated with country  $j$ 's overall exports. This later index ( $EXPY_j$ ), also suggested by Hausmann et al. (2005), is given by:

$$EXPY_j = \sum_i \frac{x_{i,j}}{X_j} PRODY_i$$

In this way we obtain a  $PRODY$  index which is country-good specific:

$$PRODY_{i,j} = \frac{PRODY_i}{EXPY_j}$$

A  $PRODY_{i,j}$  larger than one means that the productivity level of good  $i$  is larger than the average productivity level of country  $j$ 's exports, such that the larger is  $PRODY_{i,j}$  the less likely good  $i$  should be exported by country  $j$ . The opposite is the case for a  $PRODY_{i,j}$  lower than one.

In the last regression we use an index of Revealed Comparative Advantage (RCA) for the source countries.<sup>18</sup>

Both,  $PRODY_{i,j}$  and  $RCA_{i,j}$ , are calculated using data for the year 1994. The reason for doing this is to try to approximate the situation previous to the signature of most of the preferential agreements. The year 1994 is the first year for which we have data for all ALADI partners.

The interactions of  $\Delta\tau_{i,j}$  and  $\Delta Pref_{i,j}$  with  $PRODY_{i,j}$  show that given a change in  $\tau_{i,j}$ , the effect on the probability of good  $i$  being imported from country  $j$  is larger for goods with a higher productivity level. The opposite is true for the interaction of  $\Delta Pref_{i,j}$  with  $PRODY_{i,j}$ , here the larger is  $PRODY_{i,j}$  the lower is the effect of an increase in  $Pref_{i,j}$  on the probability of importing good  $i$  from country  $j$ .

Finally, for the interaction of  $\Delta\tau_{i,j}$  and the RCA variable, we obtain that the effect of a reduction in the tariff rate applied on imports from country  $j$  is larger the higher is the RCA

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<sup>18</sup> We use Balassa's formula given by  $RCA_{i,j} = \frac{x_{i,j}/X_j}{\sum_j x_{i,j}/\sum_j X_j}$ .

index of the exporter country  $j$ . On the other hand, a larger value for the RCA index reinforces the negative effect of an increase in  $\Delta Pref_{i,j}$ .

Independently of the specification we look at, the percentage of correctly classified observations is between 85% and 92%, however, this very high ratio is explained basically because of the very large proportion of rightly predictions when  $Y_{2007}=0$ , while the model is less successful when predicting  $Y_{2007}=1$ . This outcome is not surprising since the proportion of cases for  $Y_{2007}=1$  is very low, between 13% and 26% when using the 2,000 US dollars cut off point, and 12% and 24% for the 5,000 US dollar cut off point.

To give a more intuitive picture of the effects of each of the two variables we run the following partial equilibrium exercises: using the results from the last regression of Table 9 we calculate the predicted probabilities of each good  $i$  being imported in 2007; then assuming that  $\Delta Pref_{i,j}=0$  or/and  $\Delta \tau_{i,i}=0$ , we recalculate these probabilities. The differences between the predictions of the full model and those when  $\Delta Pref_{i,j}=0$  is a measure of what could have been the scenario if Argentina would have followed a policy reducing tariff rates on imports from ALADI's countries and at the same time applying discriminatory changes in MFN rates depending on country  $j$  imports come from, such that tariff preferences remained at their 1992 levels<sup>19</sup>. As we can see in Table 10, the fact that Argentina followed a discriminatory liberalisation had a relatively small effect.

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<sup>19</sup> This assumption means that the hypothetical MFN rate on good  $i$  imported from country  $j$  during 2007 would need to be equal to the observed MFN rate in that year less the observed change in  $Pref_{i,j}$ .

Table 8

	Dependent Variable: $Y_{2007}$											
	(Y <sub>1992</sub> =1 if M <sub>1992</sub> >2, Y <sub>2007</sub> =1 if M <sub>2007</sub> >2) (#)											
	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect
$Y_{1992}$	0.9445***	0.1435***	0.9400***	0.1419***	1.1398***	0.1908***	0.9426***	0.1695***	0.7255***	0.1914***	0.9372***	0.2535***
	[33.9]	[33.9]	[33.6]	[33.6]	[20.5]	[20.5]	[33.9]	[33.9]	[21.8]	[21.8]	[13.2]	[13.2]
$\Delta\tau$	-0.0052	-0.0005	-0.0062	-0.0005	-0.0102***	-0.0009***	0.0072	0.0008	-0.0493***	-0.0112***	-0.0202***	-0.0045***
	[-1.52]	[-1.52]	[-1.53]	[-1.53]	[-2.73]	[-2.73]	[1.48]	[1.48]	[-10.2]	[-10.2]	[-2.89]	[-2.89]
$\Delta Pref$	-0.0018	-0.0002	-0.0025	-0.0002	0.002	0.0002	0.0043	0.0005	-0.0295***	-0.0067***	-0.0001	0.0000
	[-0.56]	[-0.56]	[-0.59]	[-0.59]	[0.57]	[0.57]	[0.86]	[0.86]	[-5.95]	[-5.95]	[-0.014]	[-0.014]
$\Delta\tau^*Mercosur$			-0.0269***	-0.0024***							-0.0432***	-0.0097***
			[-4.30]	[-4.30]							[-5.04]	[-5.04]
$\Delta Pref^*Mercosur$			0.0038	0.0003							0.0016	0.0004
			[0.82]	[0.82]							[0.23]	[0.23]
$\Delta\tau^*Bolivia/Chile$			0.0115**	0.0010**							-0.0121	-0.0027
			[2.03]	[2.03]							[-1.52]	[-1.52]
$\Delta Pref^*Bolivia/Chile$			-0.0001	0.0000							-0.0113	-0.0025
			[-0.022]	[-0.022]							[-1.48]	[-1.48]
$Y_{1992}*\Delta\tau$					0.0181***	0.0016***					0.0217***	0.0049***
					[3.50]	[3.50]					[3.08]	[3.08]
$Y_{1992}*\Delta Pref$					-0.0062	-0.0006					-0.0011	-0.0003
					[-1.35]	[-1.35]					[-0.18]	[-0.18]
$\Delta\tau^*\ln(PRODY)$							-0.0086***	-0.0010***			-0.0230***	-0.0052***
							[-3.80]	[-3.80]			[-7.05]	[-7.05]
$\Delta Pref^*\ln(PRODY)$							-0.0039	-0.0004			-0.0192***	-0.0043***
							[-1.44]	[-1.44]			[-4.71]	[-4.71]
$\Delta\tau^*\ln(RCA)$									-0.0139***	-0.0032***	-0.0147***	-0.0033***
									[-21.5]	[-21.5]	[-22.4]	[-22.4]
$\Delta Pref^*\ln(RCA)$									-0.0093***	-0.0021***	-0.0096***	-0.0022***
									[-9.86]	[-9.86]	[-9.85]	[-9.85]
Constant	-0.7691		-2.7989***		0.7566		0.5408		-0.2925		-0.7096	
	[-1.50]		[-5.44]		[1.56]		[1.07]		[-0.41]		[-1.00]	
Observations	38423		38423		38423		34920		17776		17776	
R-squared	0.432		0.435		0.434		0.415		0.416		0.423	
Country fixed effects	yes		yes		yes		yes		yes		yes	
Good fixed effects (&)	yes		yes		yes		yes		yes		yes	
Proportion of $Y_{2007}=1$	13.16%		13.16%		13.16%		14.45%		25.65%		26.16%	
Correctly classified (+)	91.15%		91.25%		91.14%		90.30%		85.59%		85.81%	
Correctly classified when $Y_{2007}=1$ (+)	49.75%		50.43%		49.48%		49.86%		62.74%		63.22%	
Correctly classified when $Y_{2007}=0$ (+)	97.43%		97.44%		97.40%		97.13%		93.48%		93.60%	
Hosmer-Lemeshow Test [chi2(10)] (%)	8.86		3.21		8.47		13.01		16.04		17.04	
Hosmer-Lemeshow Test - P-Value	0.546		0.976		0.583		0.223		0.099		0.074	

Robust z statistics in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. (#) M<sub>1992</sub> and M<sub>2007</sub> are imports in thousand US dollars. (&) At 4-digit of the Harmonized System. (+) An observation for which  $Y_{2007} = 1$  ( $Y_{2007} = 0$ ) is considered to be correctly classified if the predicted probability is at least 0.5 (less than 0.5). (%) H<sub>0</sub>: the model is well fitted.

Table 9

	Dependent Variable: $Y_{2007}$											
	(Y <sub>1992</sub> =1 if M <sub>1992</sub> >5, Y <sub>2007</sub> =1 if M <sub>2007</sub> >5) (#)											
	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect	Coefficient	Mg. Effect
Y <sub>1992</sub>	0.9913***	0.1421***	0.9857***	0.1401***	1.1611***	0.1825***	0.9888***	0.1672***	0.7685***	0.1857***	0.9071***	0.2234***
	[34.6]	[34.6]	[34.3]	[34.3]	[20.1]	[20.1]	[34.5]	[34.5]	[22.4]	[22.4]	[12.5]	[12.5]
$\Delta\tau$	-0.0025	-0.0002	-0.0039	-0.0003	-0.0066*	-0.0005*	0.0092*	0.0009*	-0.0496***	-0.0098***	-0.0208***	-0.0041***
	[-0.73]	[-0.73]	[-0.91]	[-0.91]	[-1.73]	[-1.73]	[1.87]	[1.87]	[-10.0]	[-10.0]	[-2.90]	[-2.90]
$\Delta Pref$	-0.0017	-0.0001	-0.0037	-0.0003	0.0024	0.0002	0.0045	0.0004	-0.0316***	-0.0063***	-0.004	-0.0008
	[-0.53]	[-0.53]	[-0.84]	[-0.84]	[0.65]	[0.65]	[0.88]	[0.88]	[-6.25]	[-6.25]	[-0.51]	[-0.51]
$\Delta\tau^*Mercosur$			-0.0259***	-0.0020***							-0.0397***	-0.0078***
			[-4.01]	[-4.01]							[-4.51]	[-4.51]
$\Delta Pref^*Mercosur$			0.0062	0.0005							0.0066	0.0013
			[1.30]	[1.30]							[0.95]	[0.95]
$\Delta\tau^*Bolivia/Chile$			0.0109*	0.0008*							-0.0092	-0.0018
			[1.84]	[1.84]							[-1.12]	[-1.12]
$\Delta Pref^*Bolivia/Chile$			0.0001	0.0000							-0.0074	-0.0014
			[0.013]	[0.013]							[-0.94]	[-0.94]
Y <sub>1992</sub> * $\Delta\tau$					0.0159***	0.0012***					0.0142*	0.0028*
					[2.90]	[2.90]					[1.93]	[1.93]
Y <sub>1992</sub> * $\Delta Pref$					-0.0081*	-0.0006*					-0.0064	-0.0013
					[-1.66]	[-1.66]					[-0.97]	[-0.97]
$\Delta\tau^*\ln(PRODY)$							-0.0082***	-0.0008***			-0.0219***	-0.0043***
							[-3.56]	[-3.56]			[-6.51]	[-6.51]
$\Delta Pref^*\ln(PRODY)$							-0.0042	-0.0004			-0.0187***	-0.0036***
							[-1.53]	[-1.53]			[-4.44]	[-4.44]
$\Delta\tau^*\ln(RCA)$									-0.0151***	-0.0030***	-0.0159***	-0.0031***
									[-22.0]	[-22.0]	[-22.7]	[-22.7]
$\Delta Pref^*\ln(RCA)$									-0.0100***	-0.0020***	-0.0102***	-0.0020***
									[-10.1]	[-10.1]	[-9.90]	[-9.90]
Constant	-2.3760***		-2.4737***		-1.8846***		-0.323		-0.3028		-0.6712	
	[-5.19]		[-4.08]		[-3.92]		[-0.85]		[-0.42]		[-0.95]	
Observations	38148		38148		38148		34670		17669		17669	
R-squared	0.437		0.440		0.439		0.421		0.427		0.433	
Country fixed effects	yes		yes		yes		yes		yes		yes	
Good fixed effects (&)	yes		yes		yes		yes		yes		yes	
Proportion of Y <sub>2007</sub> =1	11.98%		11.98%		11.98%		13.16%		23.46%		23.46%	
Correctly classified (+)	91.80%		91.94%		91.82%		91.01%		86.51%		86.67%	
Correctly classified when Y <sub>2007</sub> =1 (+)	48.96%		49.73%		48.41%		49.00%		61.38%		62.04%	
Correctly classified when Y <sub>2007</sub> =0 (+)	97.63%		97.69%		97.73%		97.37%		94.22%		94.22%	
Hosmer-Lemeshow Test [chi2(10)] (%)	8.70		8.88		9.70		14.24		12.85		9.64	
Hosmer-Lemeshow Test - P-Value	0.561		0.544		0.468		0.162		0.232		0.473	

Robust z statistics in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. (#) M<sub>1992</sub> and M<sub>2007</sub> are imports in thousand US dollars. (&) At 4-digit of the Harmonized System. (+) An observation for which Y<sub>2007</sub> = 1 (Y<sub>2007</sub> = 0) is considered to be correctly classified if the predicted probability is at least 0.5 (less than 0.5). (%) H<sub>0</sub>: the model is well fitted.

While the full model predicts an expected of 4,155 imported items, when assuming  $\Delta Pref_{i,j}=0$  the number is almost identical, even slightly larger, with 4,207 items. A similar picture arises when we look at the estimated probabilities, while under the full model the average probability of good  $i$  being imported from an ALADI member is 23.5%, when  $\Delta Pref_{i,j}=0$  the probability is 23.8%, this means that on average, the discriminatory liberalisations did not affect the probability of a good being imported, on the contrary it slightly decreased it.

When we calculate the predicted probabilities under the condition that  $\Delta \tau_{i,j}=0$  we are implicitly assuming that preferences granted by Argentina took place through discriminatory changes in the *MFN* rates depending on country  $j$  imports come from<sup>20</sup>. As Table 10 shows, under this scenario imports from all ALADI countries would have been substantially lower than the predicted by the full model, 1,785 millions of US dollars over a total of 10,808 millions. Also, while the full model predicts an expected of 4,155 imported items, keeping  $\Delta \tau_{i,j}=0$  reduces this number to 3,969, just 186 items less, or a 4.3%. When looking at the changes in the average probability of good  $i$  being imported from a member of ALADI, the assumption that  $\Delta \tau_{i,j}=0$  reduces it to 22.5%, only 1 percentage point less than under the full model.

Most of Argentina's imports from ALADI countries are explained by Brazil, for instance, of 16,627 millions of US dollars of manufactures imported from all ALADI countries during the year 2007, 83.6% originated in Brazil<sup>21</sup>.

As an example of the importance of Brazil in Argentina's imports, let us say that from the predicted reduction of 1,785 millions of US dollars when assuming that  $\Delta \tau_{i,j}=0$ , 88% (1,570 millions) would be explained by a reduction of imports from Brazil. However, this bias in Argentina's imports is not taken into account in the results above, since we are

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<sup>20</sup> Under this assumption the hypothetical *MFN* rate on good  $i$  imported from country  $j$  during 2007 would need to be equal to the observed *MNF* rate in that year less the observed change in  $\tau_{ij}$ .

<sup>21</sup> The country that follows is Mexico with just 8%.

only concerned with the question if good  $i$  is or not imported from country  $j$ , and how changes in tariffs and preferences affected the probability of these two outcomes. To address the particular case of Brazil, we now estimate equation (1) considering Brazil as the only source of imports.

**Table 10**

<b>Predicted probabilities in 2007(&amp;)</b>			
	# items (a)	Mean	# Predicted items (c=a*b)
Full Model	17,669	23.5%	4,155
$\Delta\tau = 0$ and $\Delta Pref = 0$	17,669	21.7%	3,831
$\Delta\tau = 0$	17,669	22.5%	3,969
$\Delta Pref = 0$	17,669	23.8%	4,207
<b>Predicted Imports in 2007 (thousands USD)</b>			
	# items	$M_{2007}$	$M_{2007}$ if $Y_{1992}=0$
Full Model	17,669	10,808,548	378,494
$\Delta\tau = 0$ and $\Delta Pref = 0$	17,669	9,347,417	309,417
$\Delta\tau = 0$	17,669	9,023,281	313,719
$\Delta Pref = 0$	17,669	10,971,203	377,865

(&) Figures were calculated using last regression of Table 9.  $M_{2007}$  are imports in thousand US dollars.

While as explained above, given the characteristics of our sample the “incidental parameter” problem associated with fixed effects in nonlinear models was not much of an issue; this is not the case now since for most of the four-digit HS codes we have just a few observations. Because of this, we now estimate equation (1) by linear OLS.<sup>22</sup>

Table 11 reports the results when we consider only imports from Brazil. The first point worth noticing is that as before, the fact that good  $i$  was imported in 1992 had a positive effect on the probability of it being imported in 2007. Even when the comparison is not straightforward, the estimated effect appears to be more important in the case of imports from Brazil, while the marginal effects for the variable  $Y_{1992}$  was around 14%-25% when working with all ALADI countries, now the effect is larger, 32%-36%. Table 11 also

<sup>22</sup> Using linear OLS does not guaranty that the estimated probabilities are bounded in the [0,1] interval like is the case for the Probit model. In order to overcome this problem, all estimated probabilities which take a negative value are replaced by a probability equal to 0, while assigning a probability equal to 1 to all cases with estimated probabilities above this value.

shows that changes in  $\tau_i$  had a statistically significant effect, increasing the probability of good  $i$  being imported from Brazil. For the variable measuring the tariff preference granted to Brazil, the estimated coefficients show the expected positive sign, but they are in all cases not statistically different from zero. The same is true for the interactions of  $\Delta\tau_i$  and  $\Delta Pref_i$  with the variable  $Y_{1992}$ .

Finally, as in the case when all ALADI countries were included in the sample, the larger the  $PRODY_{i,j}$  and  $RCA_{i,j}$  indices are, the more important is the effect of a change in  $\tau_{i,j}$ .

When  $PRODY_{i,j}$  and  $RCA_{i,j}$  are interacted with  $\Delta Pref_{i,j}$ , the opposite result is obtained, in this cases, the larger are the  $PRODY_{i,j}$  and  $RCA_{i,j}$  the lower are the effects of an increase in the tariff preference granted to Brazil's exports.

If we run the same exercises as before, assuming that  $\Delta Pref_i=0$  and/or  $\Delta(\tau_i)=0$ , we obtain that the fact that Argentina has indeed followed a discriminatory liberalisation toward Brazil had a relatively small effect (see Table 12). While the full model predicts an expected number of 2,070 imported items in 2007, when assuming  $\Delta Pref_i=0$  the number of items is 2,065, with a value of predicted impost just above 43 millions of US dollars than under the full model. A similar picture arises when we look at the estimated probabilities, while under the full model the average probability of good  $i$  being imported from Brazil is 61.93%, the assumption that  $\Delta Pref_i=0$  gives an almost identical probability, 61.76%, this means that on average, the discriminatory liberalisations had almost no effect on the probability of a good being imported from Brazil.

**Table 11. Estimates Equation (1): Brazil**

	Dependent Variable: $Y_{2007}$					Dependent Variable: $Y_{2007}$				
	$(Y_{1992}=1 \text{ if } M_{1992}>2, Y_{2007}=1 \text{ if } M_{2007}>2) (\#)$					$(Y_{1992}=1 \text{ if } M_{1992}>5, Y_{2007}=1 \text{ if } M_{2007}>5) (\#)$				
$Y_{1992}$	0.3374***	0.3615***	0.3373***	0.2685***	0.3236***	0.3482***	0.3549***	0.3485***	0.2802***	0.3239***
	[16.7]	[8.30]	[16.7]	[11.9]	[6.88]	[17.3]	[8.29]	[17.3]	[12.4]	[7.04]
$\Delta\tau$	-0.0182***	-0.0208***	-0.0109*	-0.0239***	-0.0188**	-0.0141***	-0.0157**	-0.0072	-0.0203***	-0.0146**
	[-3.65]	[-3.31]	[-1.91]	[-4.59]	[-2.50]	[-2.82]	[-2.56]	[-1.24]	[-3.84]	[-1.98]
$\Delta Pref$	0.0021	0.0024	0.0058	-0.0019	0.0057	0.002	0.0041	0.0038	-0.003	0.006
	[1.07]	[0.81]	[1.40]	[-0.84]	[1.05]	[1.05]	[1.44]	[0.93]	[-1.33]	[1.17]
$Y_{1992}*\Delta\tau$		0.0035			0.0081		0.0017			0.0074
		[0.70]			[1.49]		[0.35]			[1.39]
$Y_{1992}*\Delta Pref$		-0.0003			0.0004		-0.0031			-0.0031
		[-0.091]			[0.099]		[-1.00]			[-0.86]
$\Delta\tau*\ln(\text{PRODY})$			-0.0060***		-0.0087***			-0.0063***		-0.0095***
			[-2.73]		[-3.62]			[-2.83]		[-3.83]
$\Delta Pref*\ln(\text{PRODY})$			-0.0026		-0.0055*			-0.001		-0.0044
			[-0.95]		[-1.73]			[-0.37]		[-1.38]
$\Delta\tau*\ln(\text{RCA})$				-0.0040***	-0.0044***				-0.0043***	-0.0046***
				[-8.78]	[-9.13]				[-8.91]	[-9.32]
$\Delta Pref*\ln(\text{RCA})$				-0.0010**	-0.0011**				-0.0014***	-0.0013**
				[-2.16]	[-2.11]				[-3.05]	[-2.52]
Constant	0.6259***	-0.1268**	-0.1184***	0.1341*	-0.0642	0.7065***	-0.1416**	-0.1076**	0.1997***	1.2468***
	[6.51]	[-2.15]	[-2.82]	[1.85]	[-0.60]	[7.33]	[-2.51]	[-2.56]	[2.81]	[8.80]
Observations	3786	3786	3783	3343	3343	3786	3786	3783	3343	3343
R-squared	0.570	0.570	0.570	0.560	0.560	0.560	0.560	0.560	0.560	0.560
Adjusted R-squared	0.412	0.412	0.413	0.387	0.392	0.403	0.404	0.405	0.384	0.391
Sector dummies (&)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
% $Y_{2007} = 1$	59.46%	59.46%	59.48%	65.48%	65.48%	56.44%	56.44%	56.46%	62.28%	62.28%
% Correctly predicted observations (#)	85.26%	85.31%	85.38%	86.33%	86.60%	84.84%	84.84%	84.77%	86.03%	85.94%
% Correctly predicted observations when $Y_{2007} = 1$ (#)	89.20%	89.07%	89.11%	92.42%	92.42%	88.30%	88.07%	87.87%	91.31%	90.97%
% Correctly predicted observations when $Y_{2007} = 0$ (#)	79.48%	79.80%	79.91%	74.78%	75.56%	80.35%	80.65%	80.75%	77.32%	77.64%

Robust t statistics in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. (&) At 4-digit of the Harmonized System. (#) An observation for which  $Y_{2007}=1$  ( $Y_{2007}=0$ ) is correctly predicted if the estimated probability is at least as large as 0.50 (less than 0.50).

When we calculate the predicted probabilities under the condition that  $\Delta\tau=0$ , Table 12 shows that under this scenario imports from Brazil would have been substantially lower. While under the full model the expected number of imported items in 2007 is 2,070, keeping  $\Delta\tau=0$  reduces this number to 1,942, moreover, differently from the case when  $\Delta Pref_i=0$ , this difference represents now approximately 1,594 millions of US dollars. When looking at the changes in the probabilities of good  $i$  being imported from Brazil, the assumption that  $\Delta\tau=0$  reduces it to 58.10%, 4 percentage points (or 6.2%) less than under the full model. From these results we have that the effects of MERCOSUR on the probability of a given good  $i$  being imported from Brazil has worked mostly through changes in the rates applied on imports from Brazil than through changes in the advantage in accessing the Argentinean market relative to other potential suppliers. This is not a completely surprising outcome if taking into account that simultaneously with the reduction of intra-MERCOSUR tariffs there was a tendency to the reduction of tariffs on imports from third countries, such that tariff preferences have not changed substantially between 1992 and 2007.<sup>23</sup>

**Table 12**  
**Predicted Probabilities and Imports: Brazil**

Predicted probabilities in 2007(&)			
	# items (a)	Mean	# Predicted items (c=a*b)
Full Model	3,343	61.93%	2,070
$\Delta\tau = 0$ and $\Delta Pref = 0$	3,343	57.83%	1,933
$\Delta\tau = 0$	3,343	58.10%	1,942
$\Delta Pref = 0$	3,343	61.76%	2,065
Predicted Imports in 2007 (thousands USD)			
	# items	$M_{2007}$	$M_{2007}$ if $Y_{1992}=0$
Full Model	3,343	9,852,904	250,651
$\Delta\tau = 0$ and $\Delta Pref = 0$	3,343	8,321,422	227,144
$\Delta\tau = 0$	3,343	8,258,574	224,416
$\Delta Pref = 0$	3,343	9,895,965	253,266

(&) Figures were calculated using last regression of Table 11.  $M_{2007}$  are imports in thousand US dollars.

<sup>23</sup> Out of 3,860 items,  $\Delta Pref$  is negative in 2,391 cases, in 109 cases  $\Delta Pref = 0$ , and for the remaining 1,360 cases we have  $\Delta Pref > 0$ .

Tables 13 and 14 show the differential effects of changes in  $\tau_{i,j}$  depending on the values of  $PRODY_{i,j}$  and  $RCA_{i,j}$ . In terms of the average probability of good  $i$  being imported from Brazil, the fact that Argentina reduced the tariff rates applied on imports from Brazil, benefited goods with productivity levels above Brazil's overall exports productivity, as well as goods Brazil enjoyed a comparative advantage in 1994.

In terms of imports values, the difference is clear between goods with low and high productivity levels, with 99.78% of the increase in imports explained by goods with productivity levels above Brazil's overall exports productivity. When distinguishing between goods Brazil had or not a comparative advantage in 1994, the figures are very similar. However, while the increase in imports of goods Brazil had in 1994 a RCA larger than one is explained by just 596 goods, in the case of goods Brazil did not enjoyed a comparative advantage ( $RCA \leq 1$ ) the increase in imports is explained by almost as much as five times the number of goods, 2,747.

**Table 13**  
**Estimated increase in the average probability of good  $i$  being imported from Brazil because of the reduction on  $\tau_{i,j}$  rates keeping  $Pref_{i,j}$  unchanged (\*)**

		$RCA_{i,j}$		Total
		$\leq 1$	$> 1$	
$PRODY_{i,j}$	$\leq EXPY_j$	-8.81%	7.09%	-4.98%
	$> EXPY_j$	3.07%	11.50%	4.53%
	Total	2.27%	11.06%	3.84%

(\*) A negative value means a reduction in the average probability. Source: own based on last column of Table 11.

**Table 14**  
**Estimated increase in imports from Brazil because of the reduction on  $\tau_{i,j}$  rates keeping  $Pref_{i,j}$  unchanged (\*)**

		$RCA_{i,j}$		Total
		$\leq 1$	$> 1$	
$PRODY_{i,j}$	$\leq EXPY_j$	-3,563	7,002	3,439
	$> EXPY_j$	828,312	762,579	1,590,891
	Total	824,749	769,581	1,594,330

(\*) Thousands US dollars. A negative value means a reduction in imports. Source: own based on last column of Table 11.

#### 4. Summary and conclusions

From the results above we have that the effects of Argentina's changes in tariffs and trade preferences toward ALADI members, on the probability of good  $i$  being imported from these countries worked mostly through changes in the rates applied on these imports than through changes in the advantage in accessing the Argentinean market. This effect was larger for goods with a higher productivity level, as well as the larger is the RCA index of the exporter country.

This outcomes are not a completely surprising if we take into account that simultaneously with the reduction of tariffs on imports from these countries, Argentina also followed a policy of reducing tariffs on imports from third countries, such that in some cases, especially MERCOSUR countries, tariff preferences did not change substantially between 1992 and 2007, when they have actually not fall.

These results put, at least preliminarily, a note of optimism against previous evidence showing that MERCOSUR may have produced a welfare loss due to a diversion of trade from the ROW.

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**Appendix 1. Table 1: Extensive Margins**

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Australia	0.1203	0.1616	0.2163	0.1917	0.2691	0.2836	0.3099	0.2802	0.3234	0.2985	0.3189	0.2688	0.2714	0.2424	0.3139	0.3189
Austria	0.2016	0.1871	0.2527	0.3737	0.3420	0.4157	0.4324	0.4102	0.4619	0.4408	0.4541	0.4235	0.4266	0.3619	0.4268	0.4541
Bahamas, The	0.0001	0.0001	0.0009	0.0020	0.0004	0.0004	0.0011	0.0004	0.0008	0.0005	0.0004	0.0003	0.0004	0.0314	0.0006	0.0004
Bangladesh	0.0583	0.0137	0.0079	0.0100	0.0064	0.0053	0.0049	0.0052	0.0063	0.0059	0.0142	0.0041	0.0133	0.0059	0.0174	0.0142
Belgium-Luxembourg	0.7041	0.6899	0.7479	0.5424	0.5531	0.5537	0.5651	0.5725	0.6060	0.6086	0.5674	0.5129	0.5531	0.7317	0.5810	0.5674
Bolivia	0.1452	0.1370	0.2620	0.0582	0.0388	0.0639	0.0532	0.0488	0.0542	0.0595	0.0749	0.0732	0.0739	0.2344	0.0724	0.0749
Brazil	0.8887	0.8955	0.9066	0.8905	0.8850	0.8758	0.8799	0.8812	0.9100	0.9040	0.8977	0.8999	0.9040	0.9290	0.8944	0.8977
Bulgaria	0.0358	0.0266	0.0447	0.0297	0.0471	0.0587	0.0540	0.0416	0.0738	0.0527	0.0983	0.0457	0.0624	0.0515	0.1032	0.0983
Canada	0.3294	0.4012	0.4745	0.5293	0.5655	0.5732	0.5862	0.5863	0.5703	0.5535	0.5206	0.4777	0.4859	0.4306	0.5083	0.5206
Chile	0.7271	0.7214	0.7576	0.5518	0.5929	0.6039	0.5685	0.5310	0.5202	0.5126	0.5278	0.4520	0.4658	0.7296	0.5340	0.5278
China	0.3105	0.3201	0.4643	0.5620	0.5719	0.6247	0.6120	0.6050	0.6128	0.6058	0.7874	0.6132	0.6486	0.7284	0.7581	0.7874
Colombia	0.1849	0.1780	0.2625	0.1414	0.1670	0.1762	0.1541	0.1443	0.2034	0.1857	0.2500	0.1608	0.2239	0.3471	0.2511	0.2500
Costa Rica	0.0140	0.0617	0.0462	0.0197	0.0135	0.0511	0.0645	0.0363	0.0463	0.0555	0.1003	0.0401	0.0863	0.1026	0.1060	0.1003
Cuba	0.0022	0.0046	0.0097	0.0214	0.0251	0.0252	0.0195	0.0166	0.0381	0.0439	0.0289	0.0134	0.0267	0.0151	0.0117	0.0289
Czechoslovakia	0.0523	0.0451	0.0428	0.1742	0.2273	0.2540	0.2638	0.2296	0.3033	0.2852	0.3892	0.3119	0.3233	0.1964	0.3331	0.3892
Denmark	0.2390	0.2570	0.2667	0.3176	0.3571	0.3667	0.3594	0.3580	0.3900	0.3800	0.3899	0.3588	0.3717	0.2995	0.3737	0.3899
Dominican Republic	0.0092	0.0496	0.0990	0.0160	0.0320	0.0371	0.0195	0.0237	0.0444	0.0515	0.0715	0.0312	0.0375	0.0143	0.0645	0.0715
Ecuador	0.0658	0.0527	0.0363	0.0554	0.0438	0.0699	0.0565	0.0677	0.0844	0.0682	0.0868	0.0698	0.0979	0.1574	0.1261	0.0868
Egypt, Arab Rep.	0.0010	0.0222	0.0685	0.0052	0.0126	0.0217	0.0180	0.0181	0.0249	0.0358	0.0418	0.0171	0.0349	0.0502	0.0476	0.0418
El Salvador	0.0019	0.0016	0.0003	0.0049	0.0103	0.0003	0.0060	0.0071	0.0241	0.0091	0.0364	0.0288	0.0276	0.0330	0.0265	0.0364
Finland	0.1918	0.1256	0.1998	0.2886	0.2577	0.3391	0.2835	0.2724	0.3074	0.3422	0.3542	0.2844	0.2863	0.2564	0.3202	0.3542
France	0.6657	0.6983	0.7602	0.7470	0.7512	0.7695	0.8044	0.8173	0.7880	0.7728	0.7428	0.6932	0.7217	0.7157	0.7335	0.7428
Germany	0.8163	0.8134	0.8552	0.8370	0.8140	0.8423	0.8505	0.8263	0.8458	0.8344	0.7938	0.7796	0.7687	0.8013	0.7803	0.7938
Greece	0.0764	0.0401	0.0437	0.0247	0.0471	0.1150	0.0564	0.0625	0.0963	0.1064	0.0930	0.0630	0.0772	0.0372	0.1079	0.0930
Guatemala	0.0196	0.0167	0.0196	0.0262	0.0624	0.0169	0.0102	0.0085	0.0796	0.0391	0.0254	0.0066	0.0174	0.0270	0.0309	0.0254
Honduras	0.0042	0.0026	0.0018	0.0016	0.0025	0.0024	0.0046	0.0051	0.0072	0.0023	0.0078	0.0267	0.0030	0.0051	0.0149	0.0078
Hong Kong, China	0.3369	0.3186	0.3884	0.3485	0.2795	0.2678	0.2267	0.2485	0.3311	0.2484	0.2750	0.1797	0.1935	0.4103	0.2465	0.2750
Hungary	0.0208	0.0192	0.0612	0.0756	0.1013	0.1771	0.2108	0.2411	0.2749	0.2748	0.3484	0.2749	0.3109	0.1077	0.2835	0.3484
India	0.1206	0.1658	0.2623	0.3030	0.2869	0.3193	0.3704	0.3755	0.4431	0.4281	0.4911	0.3784	0.4314	0.3981	0.4746	0.4911

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Indonesia	0.0391	0.0603	0.0755	0.1037	0.1177	0.2287	0.1945	0.2093	0.2866	0.2255	0.2817	0.1596	0.2613	0.1867	0.2688	0.2817
Iran, Islamic Rep.	0.0012	0.0006	0.0049	0.0005	0.0009	0.0080	0.0021	0.0021	0.0000	0.0111	0.0326	0.0059	0.0147	0.0046	0.0294	0.0326
Ireland	0.0665	0.0744	0.1316	0.1703	0.1811	0.2163	0.2045	0.2290	0.2818	0.2632	0.3017	0.2194	0.2301	0.1921	0.3043	0.3017
Israel	0.1697	0.2641	0.3045	0.2558	0.2369	0.2927	0.3171	0.2930	0.3363	0.3085	0.3229	0.2455	0.2711	0.2666	0.2958	0.3229
Italy	0.7676	0.7893	0.8095	0.8139	0.8219	0.8283	0.8348	0.8191	0.8354	0.8270	0.8074	0.7444	0.7610	0.7743	0.8108	0.8074
Jamaica	0.0014	0.0058	0.0148	0.0181	0.0039	0.0033	0.0008	0.0011	0.0101	0.0039	0.0240	0.0035	0.0010	0.0093	0.0020	0.0240
Japan	0.6409	0.6579	0.6543	0.7001	0.6888	0.7123	0.7136	0.6997	0.7001	0.6695	0.6816	0.6478	0.6467	0.5927	0.6758	0.6816
Korea, Rep.	0.4482	0.5170	0.5563	0.5718	0.5927	0.5978	0.6138	0.6335	0.6563	0.6240	0.6231	0.5719	0.6058	0.6449	0.6448	0.6231
Lebanon	0.0015	0.0033	0.0052	0.0041	0.0035	0.0046	0.0040	0.0092	0.0072	0.0191	0.0115	0.0064	0.0176	0.0148	0.0327	0.0115
Malaysia	0.0535	0.0696	0.1253	0.1712	0.2010	0.2762	0.3314	0.2913	0.3745	0.2897	0.3263	0.2334	0.2643	0.2356	0.3028	0.3263
Malta	0.0005	0.0270	0.0282	0.0202	0.0184	0.0145	0.0131	0.0456	0.0896	0.0830	0.0326	0.0239	0.0281	0.0077	0.0275	0.0326
Mauritius	0.0003	0.0005	0.0007	0.0018	0.0019	0.0028	0.0021	0.0031	0.0049	0.0090	0.0079	0.0036	0.0056	0.0031	0.0052	0.0079
Mexico	0.4024	0.4321	0.4836	0.5077	0.5768	0.6300	0.6241	0.6014	0.6031	0.5699	0.6119	0.5308	0.5677	0.6025	0.6155	0.6119
Morocco	0.0101	0.0155	0.0116	0.0111	0.0130	0.0218	0.0200	0.0191	0.0580	0.0790	0.0421	0.0654	0.0542	0.0154	0.0459	0.0421
Netherlands	0.5429	0.6371	0.6732	0.4513	0.4581	0.5247	0.5873	0.5585	0.5899	0.5312	0.4966	0.4783	0.4886	0.5832	0.4738	0.4966
New Zealand	0.1064	0.0874	0.1042	0.1228	0.1484	0.1499	0.1813	0.1623	0.1891	0.2081	0.2026	0.1767	0.1740	0.1628	0.2003	0.2026
Norway	0.0813	0.1142	0.0981	0.2639	0.2141	0.2086	0.2295	0.2209	0.2367	0.2277	0.2611	0.2326	0.2626	0.1730	0.2763	0.2611
Pakistan	0.0115	0.0164	0.0189	0.0225	0.0603	0.0368	0.0326	0.0318	0.0559	0.0568	0.0884	0.0744	0.0683	0.0776	0.0891	0.0884
Panama	0.3753	0.4230	0.4188	0.0617	0.0508	0.1516	0.0904	0.0065	0.0422	0.0383	0.0516	0.0239	0.0386	0.3222	0.0638	0.0516
Paraguay	0.1802	0.2963	0.3074	0.0816	0.0725	0.0783	0.0904	0.0724	0.1105	0.1368	0.1171	0.0967	0.1201	0.2009	0.1767	0.1171
Peru	0.1340	0.0799	0.1291	0.0963	0.0694	0.0800	0.0952	0.0878	0.1265	0.1001	0.2112	0.1155	0.1406	0.3487	0.2035	0.2112
Philippines	0.0302	0.0424	0.0859	0.0936	0.1082	0.1215	0.0870	0.1099	0.1388	0.1693	0.1972	0.1424	0.1700	0.1010	0.1586	0.1972
Poland	0.0705	0.0474	0.1600	0.1856	0.1195	0.1193	0.1868	0.1865	0.2147	0.2502	0.3246	0.2105	0.2417	0.1509	0.2957	0.3246
Portugal	0.0392	0.0468	0.1118	0.1323	0.2140	0.2371	0.2580	0.2854	0.2929	0.3348	0.3285	0.3015	0.2995	0.1957	0.3126	0.3285
Romania	0.0916	0.1869	0.2135	0.1931	0.2118	0.1953	0.1610	0.1339	0.1893	0.1594	0.2454	0.1366	0.1500	0.0988	0.2330	0.2454
Saudi Arabia	0.0012	0.0041	0.0033	0.0087	0.0099	0.0130	0.0208	0.0031	0.0075	0.0148	0.0649	0.0079	0.0260	0.0097	0.0279	0.0649
Singapore	0.1704	0.2216	0.2680	0.1443	0.1679	0.2058	0.2403	0.2071	0.2233	0.3003	0.3120	0.1939	0.2333	0.4546	0.3085	0.3120
Soviet Union	0.0618	0.2251	0.3092	0.2839	0.3011	0.3193	0.2831	0.2277	0.2609	0.2510	0.2654	0.1605	0.2088	0.2157	0.2601	0.2654
Spain	0.6913	0.7459	0.8015	0.7679	0.7737	0.7780	0.8100	0.8109	0.7816	0.7970	0.7534	0.7019	0.7165	0.7604	0.7372	0.7534

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Sri Lanka	0.0007	0.0007	0.0031	0.0060	0.0097	0.0123	0.0162	0.0116	0.0227	0.0164	0.0286	0.0288	0.0538	0.0173	0.0421	0.0286
Sweden	0.4898	0.4639	0.4878	0.5051	0.5027	0.5140	0.5234	0.5166	0.5355	0.5061	0.5362	0.4698	0.4805	0.4954	0.5025	0.5362
Switzerland	0.4009	0.4583	0.4750	0.4309	0.5111	0.5229	0.4780	0.4479	0.5076	0.4722	0.5082	0.4845	0.4774	0.4490	0.4943	0.5082
Syrian Arab Republic	0.0098	0.0038	0.0086	0.0024	0.0029	0.0099	0.0011	0.0036	0.0014	0.0036	0.0106	0.0056	0.0042	0.0007	0.0159	0.0106
Taiwan, China	0.4469	0.4339	0.4495	0.4711	0.4862	0.5100	0.5054	0.5027	0.4735	0.4783	0.5094	0.4325	0.4697	0.4826	0.5033	0.5094
Thailand	0.0602	0.0886	0.0900	0.1619	0.2090	0.2559	0.2995	0.3091	0.3640	0.3797	0.4017	0.3136	0.3635	0.3774	0.3743	0.4017
Trinidad and Tobago	0.0082	0.0150	0.0105	0.0139	0.0107	0.0068	0.0068	0.0067	0.0077	0.0036	0.0032	0.0084	0.0203	0.0137	0.0015	0.0032
Turkey	0.0201	0.0236	0.1438	0.1180	0.1418	0.1522	0.1762	0.2478	0.2583	0.2888	0.3326	0.2320	0.2819	0.3009	0.3326	0.3326
United Arab Emirates	0.0047	0.0060	0.0109	0.0071	0.0062	0.0246	0.0089	0.0159	0.0263	0.0112	0.0591	0.0186	0.0110	0.1215	0.0296	0.0591
United Kingdom	0.6230	0.6560	0.7288	0.6938	0.7019	0.7098	0.7139	0.6959	0.7082	0.7043	0.6753	0.6408	0.6516	0.6381	0.6715	0.6753
United States	0.9387	0.9419	0.9406	0.9470	0.9454	0.9516	0.9425	0.9151	0.9199	0.9326	0.8994	0.8743	0.9162	0.9406	0.9185	0.8994
Uruguay	0.6191	0.6358	0.6853	0.3899	0.3883	0.4291	0.3854	0.3928	0.4170	0.3790	0.3993	0.3164	0.3624	0.7156	0.3569	0.3993
Venezuela	0.2084	0.2175	0.2212	0.1430	0.1553	0.1294	0.1550	0.1128	0.1654	0.2174	0.1226	0.1380	0.1332	0.1720	0.1240	0.1226
Vietnam	0.0001	0.0017	0.0063	0.0221	0.0307	0.0372	0.0422	0.0455	0.0625	0.0554	0.1489	0.0692	0.1273	0.0790	0.1217	0.1489
Yugoslavia	0.0609	0.0535	0.0541	0.0504	0.0791	0.0851	0.1193	0.1107	0.1771	0.1851	0.2172	0.1467	0.1323	0.0577	0.2014	0.2172

Source: own based on COMTRADE.

**Appendix 1. Table 2: Extensive Margins Ranking**

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
United States	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Brazil	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
Germany	3	3	3	3	4	3	3	3	3	3	4	3	3	3	4	4
Italy	4	4	4	4	3	4	4	4	4	4	3	4	4	4	3	3
Chile	5	6	7	11	9	11	14	15	16	15	14	17	18	7	13	14
Belgium-Luxembourg	6	8	8	12	14	14	15	13	11	10	12	12	12	6	12	12
Spain	7	5	5	5	5	5	5	6	6	5	6	5	6	5	6	6
France	8	7	6	6	6	6	6	5	5	6	7	6	5	9	7	7
Japan	9	9	12	7	8	7	8	7	8	8	8	7	9	14	8	8
United Kingdom	10	10	9	8	7	8	7	8	7	7	9	8	7	12	9	9
Uruguay	11	12	10	19	19	19	20	20	21	23	22	22	23	10	23	22
Netherlands	12	11	11	17	18	15	12	14	13	14	18	14	13	15	19	18
Sweden	13	14	14	15	16	17	16	16	15	16	13	16	15	16	16	13
Korea, Rep.	14	13	13	9	10	12	10	9	9	9	10	10	10	11	10	10
Taiwan, China	15	16	19	16	17	18	17	17	18	17	16	18	17	17	15	16
Mexico	16	17	15	14	11	9	9	11	12	12	11	11	11	13	11	11
Switzerland	17	15	16	18	15	16	18	18	17	18	17	13	16	19	17	17
Panama	18	18	20	46	49	40	46	65	58	59	57	59	56	27	55	57
Hong Kong, China	19	21	21	21	24	28	33	29	26	36	36	36	39	21	39	36
Canada	20	19	17	13	13	13	13	12	14	13	15	15	14	20	14	15
China	21	20	18	10	12	10	11	10	10	11	5	9	8	8	5	5
Denmark	22	24	26	22	20	21	22	22	22	21	23	21	21	29	22	23
Venezuela	23	27	31	36	37	42	41	42	43	39	46	43	44	42	47	46
Austria	24	28	30	20	21	20	19	19	19	19	20	19	20	24	20	20
Finland	25	34	34	24	26	22	27	28	28	24	25	26	27	31	26	25
Colombia	26	30	27	37	36	38	42	40	39	41	39	38	37	26	38	39
Paraguay	27	22	23	44	45	48	45	46	46	45	47	46	47	36	44	47
Singapore	28	26	25	35	35	35	31	37	37	27	33	35	35	18	29	33
Israel	29	23	24	27	27	25	24	24	25	26	31	29	30	30	32	31

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bolivia	30	33	29	47	53	50	52	49	55	51	53	48	51	34	53	53
Peru	31	38	38	42	46	47	44	45	45	47	42	45	43	25	41	42
India	32	31	28	23	23	23	21	21	20	20	19	20	19	22	18	19
Australia	33	32	32	29	25	26	25	27	27	28	32	28	29	32	27	32
New Zealand	34	37	41	39	38	41	38	39	41	40	43	37	40	43	43	43
Romania	35	29	33	28	31	36	40	41	40	44	40	44	42	50	40	40
Norway	36	35	43	26	29	34	32	35	36	37	38	31	32	41	35	38
Greece	37	50	52	52	51	45	50	48	47	46	50	52	50	56	49	50
Poland	38	46	35	30	40	44	37	38	38	35	30	34	34	45	33	30
Ireland	39	39	37	33	34	33	35	33	32	33	34	33	36	39	30	34
Ecuador	40	44	54	48	52	49	49	47	49	50	52	49	48	44	46	52
Soviet Union	41	25	22	25	22	24	28	34	34	34	37	39	38	35	37	37
Yugoslavia	42	43	49	49	44	46	43	43	42	42	41	41	45	53	42	41
Thailand	43	36	44	34	32	29	26	23	24	22	21	23	22	23	21	21
Bangladesh	44	60	64	62	65	67	66	66	69	68	67	70	67	69	66	67
Malaysia	45	40	39	32	33	27	23	25	23	29	29	30	31	33	31	29
Czechoslovakia	46	48	53	31	28	30	29	32	29	31	24	24	24	37	24	24
Portugal	47	47	40	38	30	31	30	26	30	25	28	25	26	38	28	28
Indonesia	48	42	46	41	41	32	36	36	31	38	35	40	33	40	36	35
Bulgaria	49	52	51	50	50	51	51	52	51	55	49	53	53	54	51	49
Philippines	50	49	45	43	42	43	47	44	44	43	44	42	41	49	45	44
Hungary	51	55	48	45	43	37	34	31	33	32	26	27	25	47	34	26
Turkey	52	53	36	40	39	39	39	30	35	30	27	32	28	28	25	27
Guatemala	53	56	56	51	47	60	62	62	50	58	65	66	65	59	60	65
Costa Rica	54	41	50	57	58	52	48	53	56	53	48	54	49	48	50	48
Pakistan	55	57	57	53	48	55	54	54	54	52	51	47	52	52	52	51
Morocco	56	58	59	61	59	58	56	56	53	49	58	51	54	61	57	58
Syrian Arab Republic	57	65	63	69	69	64	71	68	71	71	69	69	70	73	67	69
Dominican Republic	58	45	42	59	54	54	58	55	57	56	54	55	57	64	54	54

Partner	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Trinidad and Tobago	59	59	61	60	61	66	64	64	65	70	72	64	63	65	72	72
United Arab Emirates	60	61	60	64	66	57	63	59	60	64	56	61	68	46	61	56
Honduras	61	67	70	72	70	71	67	67	68	72	71	58	71	70	68	71
Cuba	62	63	62	55	56	56	57	58	59	57	63	63	61	62	69	63
El Salvador	63	69	73	67	62	73	65	63	62	66	60	57	60	57	65	60
Lebanon	64	66	66	68	68	68	68	61	67	61	68	67	64	63	59	68
Jamaica	65	62	58	58	67	69	73	72	64	69	66	72	72	67	71	66
Saudi Arabia	66	64	68	63	63	62	55	69	66	63	55	65	62	66	63	55
Iran, Islamic Rep.	67	71	67	73	72	65	70	71	73	65	61	68	66	71	62	61
Egypt, Arab Rep.	68	54	47	66	60	59	59	57	61	60	59	62	58	55	56	59
Sri Lanka	69	70	69	65	64	63	60	60	63	62	64	56	55	60	58	64
Malta	70	51	55	56	57	61	61	50	48	48	62	60	59	68	64	62
Mauritius	71	72	72	71	71	70	69	70	70	67	70	71	69	72	70	70
Vietnam	72	68	65	54	55	53	53	51	52	54	45	50	46	51	48	45
Bahamas, The	73	73	71	70	73	72	72	73	72	73	73	73	73	58	73	73

Source: own based on COMTRADE.