

Measuring the role of MERCOSUR on the Regional Pattern of Import of its Country Members ^{§,+}

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Abstract

With the signature of the Asuncion Treaty by Argentina, Brazil, Paraguay and Uruguay in July 1991, the four countries implemented an ambitious program to reduce tariffs and non-tariff barriers on their reciprocal trade; a common policy toward third countries was implemented in 1995. As MERCOSUR deepened further, intra-zone trade increased its share in total trade. In most cases, increasing intra-zone trade meant an increasing participation of goods where MERCOSUR members did not have a RCA at the beginning of the integration process. Starting from Krugman (1980) monopolistic competitive model for international trade we derive an equation to explain the ratio of imports of good i from any two countries j and h . Making use of a recently detailed database on intra-MERCOSUR tariffs we analyse the role of tariff preferences on the regional import patterns of MERCOSUR members between 1991 and 2004. The results show tariff preferences affected imports patterns in the cases of Argentina and Uruguay, and to a less extent also those of Brazil and Paraguay. For the first two countries the results appear to sustain the hypothesis MERCOSUR may have induced a trade diversion effect.

Keywords: regional integration, tariff preferences, trade patterns, monopolistic competition.

JEL: F12, F13, F15

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1. Introduction

There exist an extensive empirical literature about the effects of regional integration on the patterns of trade and specialisation of countries engaged in such processes. A widely used approach involves estimating a “gravity equation” with trade between members of a regional agreement being identified by a dummy variable. Then, the magnitude and statistical significance of the dummy variable is a measure of the importance of the agreement under analysis. Previous empirical applications for the case of MERCOSUR have found a statistically significant effect (i.e. Frankel, 1997, and more recently Mayer and Zignago, 2004).

Under this approach, the inference that the increase in the intensity of intra-regional trade is associated with the regional agreement is derived from the finding of increasing trade flows among the members of the agreements and, eventually, with the temporal coincidence between increasing trade flows and the moment the agreements are signed and further extended.

The possibility of distinguishing among different forces explaining the increase in the intensity of intra-regional trade, such as geographical factors, trade complementary, etc., versus those related to the evolution of tariff preferences is highly restricted by the availability of suitable data. The aim of the present paper, using a theoretical framework based on Dixit and Stiglitz (1977) and Krugman (1980) is to analyse the role of tariff preferences under the MERCOSUR on the pattern of imports of its country members, Argentina, Brazil, Paraguay and Uruguay, between 1991 and 2004. In our case we make use of a recently developed database of intra-MERCOSUR tariff rates which is available at a great level of detail (MERCOSUR, 2005).

The paper is composed of this introduction and four more sections. The second section presents a brief summary of the evolution of MERCOSUR's trade policy, tariff preferences and trade patterns. In the first case, we distinguish between the two phases

of MERCOSUR, 1991-1994 when the agreement responded to the characteristics of a free-trade zone, and 1995-2004 when the four members adopted also a common trade policy toward third countries. Preferences are measured as the difference between tariffs applied on imports originated outside MERCOSUR and those on intra-zone imports. The third section deals with theoretical and methodological issues. Based on Krugman (1980) model, later adapted by Mayer y Zignago (2004), we derive an estimable equation to explain the changes in the regional origin of imports. Section four presents and analyses the econometric results from the estimated equation. The last section summarises the main findings.

2. Trade Policy and Patterns of Trade

2.1. Trade Policy under the MERCOSUR: a brief summary¹

Since its conception, with the signature of the Treaty of Asunción (TA²), the aim of the MERCOSUR was to set up a custom union. In the case of MERCOSUR, we can identify two phases. In a first phase, 1991-1994, the agreement responded to the characteristics of a free-trade zone, when each country retained the power to set its own trade policy with respect to non-members. The second phase started in 1995, when the four members adopted also a common trade policy toward third countries.

2.1.1. Period 1991-1994

The signature of the TA in 1991 constitutes the cornerstone which gave birth to the MERCOSUR. As just said, the main aim of the TA was to establish a common market

¹ Others aspects of the integration process, such as Rules of Origin and Safeguard clauses are not included into this brief summary.

² Latin American Integration Association's (LAIA) Partial Economic Complementation Agreement (ACE) N° 18.

including Argentina, Brazil, Paraguay and Uruguay. The TA established the timetable for the increase of tariff preferences among MERCOSUR's members. For all goods already covered by previous preferential agreements, specific timetables were agreed. In any case, at the moment of the MERCOSUR being launched in July 1991, the minimum tariff preference was 47%, with December 1994 as the deadline to achieve a 100% tariff preference. In order to attend the particular situation of some sectors, an exemption regime was agreed. This regime allowed each member to choose some goods to be excluded from both, the general and specific timetables. In the cases of Argentina and Brazil, the countries had until the 31st of December 1994 to remove all goods included into their lists. Paraguay and Uruguay were granted one more year. Finally, a sector left aside from the MERCOSUR agreements was the automotive industry, sector that was regulated by bilateral agreements³.

2.1.2. Period 1995-2004

Intra-MERCOSUR trade

According to the original timetable agreed in 1991, from January 1995 all trade among MERCOSUR's members was supposed to be free of any trade barriers; however this was not the case. In 1994, a new timetable was agreed for a limited number of goods, this regime was known as RAM⁴. The RAM constituted a reissue of the exemption lists that were in force between 1991 and 1994. The RAM allowed each member to select a number of goods to be exempted from the requisite of 0% intra-zone tariff. A timetable for the convergence to a 0% tariff was agreed, Argentina and Brazil had until the 1st of January of 1999, while for Paraguay and Uruguay the deadline was the 1st of January of

³ The corresponding agreements are ACE-14 for Argentina-Brazil, ACE-1 and ACE-57 for Argentina-Uruguay, and ACE-2 for Brazil-Uruguay.

⁴ See Decision 5/94, Common Market Council (CMC), Régimen de Adecuación al MERCOSUR (Adaptation Regime to the MERCOSUR).

2000. The timetable was observed by the four countries, such that by the beginning of the current decade all imports reached by MERCOSUR agreements were subject to a 0% tariff.⁵

Like during the period 1991-1994, the automotive industry was left aside, being still subject to bilateral agreements. In general, the main guidelines ruling the sector are: (i) free trade but subject to a requisite of minimum content of local/regional production; (ii) limits to the possibility of unbalanced trade flows (this requirement has become more flexible across time, and it should not be in force after 2006)⁶; (iii) in some cases, when the requirement of local/regional production is not met or the minimum requirement is reduced, quota restrictions become applicable. Finally, another sector not reached by the MERCOSUR is the sugar industry⁷. Originally, the sector was supposed to be included into the MERCOSUR framework by December the 31st of 2000⁸, this deadline was later postponed to the end of 2005, it has yet not been incorporated within the MERCOSUR framework.

Extra-MERCOSUR trade

In line with the objective of establishing a Common Market, in 1995 MERCOSUR members agreed on a common external policy through the implementation of a Common External Tariff (CET) to be applied on imports originated outside the MERCOSUR.

The CET has a structure with 11 levels, with tariffs in the range 0%-20%. The general principle is that tariffs increases with the share of value added of the goods subject to the tariff. Others criteria have been also considered, such as the existence of

⁵ See decision by the MERCOSUR's ad hoc tribunal (TAHM) of 28/04/1999, communiqués 37/1997 and 7/1998 of the Trade Operations Department (DECEX) of the Trade Secretariat (SECEX): application of restrictive measures on reciprocal trade, issue 1/99, MERCOSUR's Official Bulletin 9/1999 (page 227).

⁶ Recently Argentina and Brazil agreed on a temporary new regime which still includes limits to trade unbalance.

⁷ According to the MERCOSUR customs nomenclature, the sugar sector includes the items 1701.11.00, 1701.12.00, 1701.91.00, y 1701.99.00.

⁸ See Decisions 07/94, 19/94 y 16/96 by the CMC.

local/regional production. In general, for those goods not included into the exemptions to the CET, the highest rates are applied to final consumption goods; in the other extreme we have intermediate goods, while semi-finished goods are subject to intermediate rates.

At the end of 1997 there was a general increase of the CET by three percentage points⁹. Some goods were exempted from the increase. Additionally, each country kept the right to choose the goods subject to the increase. Subsequently, in 2000, 2001 and 2002 the increase in the CET was partially reversed¹⁰. In 2004 the CET returned to its 1998 level. The general policy with respect to the CET is directed to its gradual reduction. Like in the case of intra-MERCOSUR trade, there are some exemptions to the CET, five groups of goods can be identified:

- Capital goods: it was agreed a process of lineal and automatic convergence to a 14% rate, which was supposed to be in force by January the 1st of 2001, with some goods subject to lower tariffs. In the case Paraguay and Uruguay the deadline to archive full convergence was set by the beginning of 2006. In the meantime, and until the 31/12/2005, each of the four countries was allowed to keep its own regime on imports of capital goods. Also, Argentina, Paraguay and Uruguay were allowed some exceptions in the case of imports originated outside MERCOSUR which are substitute of local/regional production.
- Telecommunication and Informatics sectors: a process of lineal and automatic convergence to a 16% rate was set. The deadline to achieve full convergence was January the 1st of 2006. For some goods the rate to be applied is lower than 16%. Also, and in a similar way to the case of capital goods, Paraguay (until 31/21/2010) and Uruguay (between 01/01/2004 and 31/12/2010) were allowed to apply a 2% tariff rate on imports originated outside the MERCOSUR which are substitute of local/regional production. By the end of 2004, the number of items included was 247.

⁹ CMC's Decision 15/97

¹⁰ CMC's Decisions 67/00, 06/01 y 21/02.

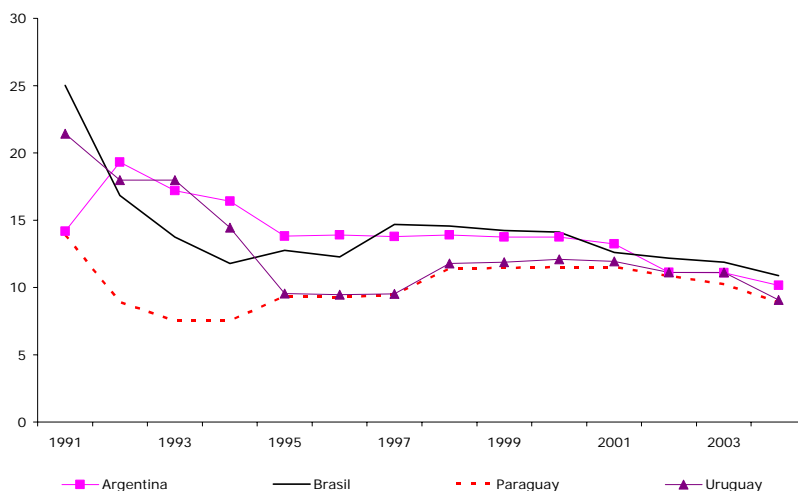
- Countries' lists: these lists are defined by each member, while the MERCOSUR regulates the number of items to be included. By the end of 2004, the number of items each country was allowed to set a tariff different from the CET was: Argentina and Brazil 100, Paraguay 649, and Uruguay 225.
- Sugar sector: the sector is temporarily outside of the MERCOSUR framework, with each country applying its own unilateral policies.
- Automotive sector: since the beginning of the MERCOSUR, the policy regarding the automotive sector was negotiated in a bilateral framework. This was supposed to be in force until the end of 2000, this date was later moved forward to the end of 2006. The main aspect of the automotive policy after 2000 is that the agreement between Argentina and Brazil includes also the conditions to be applied on imports originated in countries outside the MERCOSUR.

2.2. Evolution of average trade preferences

During the first phase of the MERCOSUR, 1991-1994, simultaneously with the increase of tariff preferences on intra-zone trade, there was a reduction of tariffs on imports from third countries. This behaviour was more important in the cases of Brazil and Uruguay. From 1995, with the implementation of the CET, the average level of protection, measured by the average of the Most Favoured Nation (MFN) rates, is quite stable, in the cases of Paraguay and Uruguay is possible to observe an increase between 1997 and 1998, while in the case of Brazil the increase took place between 1996 and 1997. The increase in the average MFN rates is explained by the decision of the CMC to increase the CET by 3 percentage points. In the case of Argentina, the increase in the CET was compensated by

a reduction, from 3% to 0.5% of the Statistical Tax¹¹. From 2000 a declining tendency is observed (see Graph 1).

Graph 1
Average MFN rates ^{(1) (2)}
(%)



(1) At the end of each year.

(2) Argentina: includes Statistical Tax.

Source: SM/SAT/CE, based on ALADI.

Despite the reduction in tariffs rates on imports originated outside MERCOSUR, the increase of tariff preferences on intra-MERCOSUR trade meant a substantial and continuous reduction of intra-zone tariffs. Considering average intra-zone rates at the beginning of the MERCOSUR, the lowest rate was that applied by Paraguay, while Uruguay was in the opposite extreme. As tariff preferences were increased cross-country differences became narrower. Between 1995 and 1999, time during which the RAM was in force, the lowest intra-zone tariffs were those applied by Brazil followed by those of Argentina. In the cases of Paraguay and Uruguay, and because of the larger number of items included into the RAM, average intra-zone rates were higher than those of the other two country members, despite this difference, for the four countries average rates were

¹¹ The Statistical Tax (ST) is a duty applied on all imports in order to finance the system of trade statistics. In 1992 Argentina increased the ST from 3% to 10%, this decision meant that a complaint against Argentina was raised at the WTO. The WTO ruled that the ST should be eliminated, decision that was appealed by Argentina. In 1999, Argentina decided that independently of the ST rate, the total amount to be paid by the importer could not exceed 500 US dollars.

still lower than the ones prevailing at the end of 1994, before the start of the second phase of the integration process.

Besides the different MFN rates applied by each MERCOSUR member during 1991-1994, another reason helps to explain the different tariff preferences each country granted to the other three members. During this period, and as mentioned above, there existed specific timetables for the increase of tariff preferences for those goods already reached by previous preferential agreements, agreements that not necessarily included the four members. During 1991-1994 is possible to observe that in the cases of Argentina and Brazil, the lowest intra-zone tariffs were those applied on their reciprocal trade, however these values were quite similar to the rates on imports from Uruguay. In the case of Paraguay, intra-zone rates were quite similar, independently of the origin of imports. In the case of Uruguay, average tariffs on imports originated in Argentina and Brazil were almost the same, while imports from Paraguay were subject to higher rates. All these differences disappeared as tariff preferences were increased, moreover, from 1995, and with the exemption of the automotive sector, there is no place for the application of different tariff depending on the origin of imports. Finally, in the case of Paraguay there was an increase in the average intra-zone rate during 2001-2003 which is explained by the application during this period of the Special and Temporary Measure on Imports (METI¹²). The METI meant the application of a 10% tariff rate on a limited number of goods.

Finally, in order to have a clear picture of the advantage the MERCOSUR meant to each member in terms of access to the domestic markets of the other members we need to look at the differences between extra- and intra-zone tariffs. Because the possibility MERCOSUR members having preferential agreements with other countries, we proceed to look at the difference between each country MFN rates and those applied on imports originated inside the MERCOSUR. In the case of Argentina we have that until the year

¹² METI: Medida Especial Temporal a la Importación.

2000 there was a small increase in the average preference granted to other MERCOSUR members, this behaviour is reversed in the year 2001, with the preference in 2004 being 16%-23% lower than the ones prevailing in 1992. With most of the intra-zone trade being subject to a 0% tariff, this declining tendency is explained by the reductions in the CET. In the case of Brazil, the behaviour is more unstable. Firstly, the much higher MFN rates at the beginning of the MERCOSUR meant that during the period 1992-2004 the level of preferences granted by Brazil are lower than those in 1991. However is possible to distinguish three sub-periods: (i) during 1991-1994 the important reduction of Brazil's MFN rates meant an appreciable reduction of the average tariff preference, 15%-34% depending on which of the other three other countries we look at; (ii) between 1995-1997 the tendency is reversed, compensating almost completely what happened during the previous years; (iii) in 1998 the declining tendency starts again, deepening from the year 2001. After this irregular behaviour, preferences in 2004 were 12%-34% lower than in the year 1991. Paraguay, on the other hand shows the opposite behaviour to that of Argentina and Brazil. The fact that this country had the lowest MFN rates at the beginning of the MERCOSUR, which were also lower than the ones under the CET, means that there was an increase in the level of preferences granted to the other three members, in this case there was a continuous increase between 1993-2000 such that at the end of this period the level of preferences were 160% higher than those of 1992. Like in the cases of Argentina and Brazil, the reduction of the CET during the most recent years meant also a reduction in the level of tariff preferences, despite this reduction, in 2004 the average preferences granted by Paraguay were 68%-69% higher than those of 1991. The evidence for Uruguay shows, like in the case of Brazil, a more irregular behaviour, with an increase in the level of preferences until 1993/1994, an important reduction in 1995 (28%-30% comparing with 1994), an increase again until the year 2000 (specially in 1998 when the CET was increased by 3 points), finally, and like it was the case with the other three members, a reduction took place between 2001 and 2004. After all these changes, in

2004 the average preference granted by Uruguay to Argentina and Brazil was almost identical to those of 1991, with Paraguay benefiting from a 28% increase.

2.3. Patterns of Trade

In this section we present an analysis of the patterns of trade for the period 1993-2004 using CEPII's Index of Revealed Comparative Advantage¹³ (RCA). The RCA indices are calculated at 4 digits of the Harmonised System using data for the year 1993^{14,15}. According to the pattern of the RCA index for each member of MERCOSUR, 16 groups of sectors were identified:

- i) 4 groups where only one member of MERCOSUR has RCA (A, B, P, U);
- ii) 6 groups where two members of MERCOSUR have a RCA (AB, AP, AU, BP, BU, PU);
- iii) 4 groups where three members of MERCOSUR have a RCA (ABP, ABU, APU, BPU);
- iv) 1 group where the four members of MERCOSUR have a RCA (ABPU);
- v) 1 group where none of the members of MERCOSUR have a RCA.

The main picture emerging from the data is that the patterns of trade specialisation are coherently related with the patterns of the RCA index (see Table A.4 in Appendix A). It is in the last group, the one where none of the MERCOSUR members have a RCA, where we can observe an import specialization, while the group where the four countries have a RCA shows an export specialization, mainly to extra-MERCOSUR countries.

$$^{13} \text{ The RCA index for sector } i \text{ is defined as } RCA_i = \frac{(X_i - M_i) - (X_i + M_i) \left(\frac{\sum_i X_i - \sum_i M_i}{\sum_i X_i + \sum_i M_i} \right)}{\left(\sum_i X_i + \sum_i M_i \right)}$$

¹⁴ 1993 is the earliest year for which we have homogeneous data for the four countries. However, in order to have a better perspective about how trade patterns changed since the beginning of MERCOSUR, it would have been more appropriate to use data before MERCOSUR, without this implying trade patterns previous to MERCOSUR were an accurate reflection of the comparative advantages of each of its members, especially if we take into account the high level of protections prevailing at that time.

¹⁵ The reason to use CEPII's RCA index instead of other indices that are more widely used in the literature, such as Balassa's index, is because these other indices requires data on world trade, which are only available for more recent years, at least with the detail here required.

Table 1 presents the structure of trade with the ROW¹⁶ for the period 1993-2004 according to the 16 groups above identified. For the four countries we have that those sectors where no country had in 1993 a RCA explain most of imports, Argentina 61.1%, Brazil 62.4%, Paraguay 59.8%, and Uruguay 53.4%. In the case of Argentina, the second group explaining most of its imports (20.7%) is that that where only Brazil had a RCA. In Brazil, the second importer group, with a 14.9% share, is that where only Argentina had a RCA. Paraguay has as a second importer group (22.1%) that where Brazil had a RCA. Finally, in the case of Uruguay, the second most important importer group (14.3%) is also that where only Brazil had a RCA. As we can see from these figures, the four countries have still possibilities of taking advantage of trade complementary among them.

Looking at the structure of exports to the ROW (Table 1), we have that in the case of Argentina the group explaining most of its exports (37%) is that where Argentina, Brazil and Paraguay had a RCA, while in second place, with a 20% of Argentina's exports, was the group where Argentina is the only country with RCA. In the case of Brazil, the group where the country was the only one with a RCA explains 26.4% of exports, while in second place, explaining 18.9% of exports, is the group where Argentina, Brazil and Paraguay had a RCA. In the case of Paraguay, the first exporter group, with a 61% of total exports, is that where Argentina, Brazil and Paraguay had a RCA, while in second place, explaining 15.7% of the country's exports, were those sectors where the four countries had a RCA. Finally, in the case of Uruguay, in first place, with a 40.3% of total exports, is the group where the all MERCOSUR members had a RCA, while with a 26.7% of the country exports is the group where Argentina, Brazil and Uruguay had a RCA.

¹⁶ The ROW excludes MERCOSUR countries as well as members of the Latin American Integration Association (LAIA).

Table 1
Typology of goods (HS 4 digit) by group of MERCOSUR countries with RCA, structure of trade with ROW 1993-2004

Group	Argentina		Brazil		Paraguay		Uruguay	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
a) Products with RCA in only country								
A (Argentina)	20.0%	5.0%	4.9%	14.9%	1.6%	6.6%	1.3%	14.3%
B (Brazil)	4.2%	20.7%	26.4%	10.5%	0.8%	22.1%	1.4%	19.1%
P (Paraguay)	0.1%	0.3%	0.1%	0.3%	2.2%	0.1%	0.1%	0.3%
U (Uruguay)	1.2%	5.7%	1.9%	4.5%	0.0%	1.8%	1.7%	4.2%
b) Products with RCA in two countries								
AB	6.4%	1.9%	7.8%	2.4%	0.1%	1.4%	0.1%	1.6%
AP	1.2%	0.1%	0.6%	0.7%	5.7%	0.0%	3.4%	0.2%
AU	6.3%	0.5%	0.2%	1.1%	0.0%	0.1%	12.6%	0.8%
BP	0.8%	0.8%	12.1%	0.5%	9.9%	0.3%	0.7%	0.7%
BU	0.6%	2.0%	7.5%	1.2%	1.3%	5.3%	4.3%	2.6%
PU	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
c) Products with RCA in three countries								
ABP	37.0%	0.3%	18.9%	0.3%	61.0%	0.6%	1.2%	0.7%
ABU	6.9%	0.5%	5.4%	0.3%	0.4%	0.3%	26.7%	0.9%
APU	1.6%	0.5%	0.1%	0.4%	0.0%	0.3%	4.2%	0.4%
BPU	0.1%	0.4%	0.1%	0.2%	0.4%	0.7%	0.1%	0.6%
d) RCA in all countries								
ABPU	9.6%	0.2%	3.9%	0.2%	15.7%	0.2%	40.3%	0.2%
e) RCA in no countries								
NONE	3.9%	61.1%	10.0%	62.4%	0.7%	59.8%	1.8%	53.4%
The country does not have a RCA	11.0%		17.8%		4.9%		10.0%	
None of the other 3 countries have a RCA	66.1%		72.9%		60.0%		57.5%	

Source: Table A.2.

An important effect of any preferential agreement is that it favours trade between members of the agreement relative to trade with non-members countries. Table 2 presents the structure of intra-MERCOSUR trade according to the typology emerging for the countries' RCA indices. A notable results is that the group where none of the members had a RCA explains an important share of intra-zone imports, Argentina 34.9%, Uruguay 26.7%, Paraguay 22.1% and Brazil 22.1%. In all cases this group is the second most important. With respect to intra-zone exports, the four countries exports goods included into the group for which none of the members had a RCA; this is more notorious in the case of Brazil, where this group explains 32.1% of intra-MERCOSUR exports. If we consider altogether all sectors where Brazil had not a RCA, these explain 43.1% of exports to other MERCOSUR countries. In first place, with a 37.7%, are exports corresponding to the group where only Brazil had a RCA. In the case of Argentina, intra-MERCOSUR exports are mostly explained by those sectors where the country is the only one with RCA (36%) and those where none of the four members had a RCA (21.9%). All sectors where Argentina had not a RCA explain 45.7% of its intra-MERCOSUR exports. In the cases of Paraguay and Uruguay there is less evidence of the MERCOSUR stimulating what we may refer as an "artificial" competitiveness, with the share of exports by sectors where the two countries did not have a RCA being much lower than for the other two countries, 13.6% and 29.7% respectively. In the case of Paraguay, we have the surprising result that almost 70% of its intra-zone exports are explained by sectors where the other members also had a RCA, 52.1% of exports correspond to sectors where Argentina, Brazil and Paraguay had a RCA, while a 15.3% comes from sectors where Argentina and Paraguay enjoyed a RCA. This phenomenon could be explained by the mediterranean geography of Paraguay, such that extra-MERCOSUR exports need in a first step to be exported to some of the other three members. Finally, in the case of Uruguay, the distribution of intra-zone exports is less concentrated, with five groups of sectors explaining at least a 10% of the country exports.

When we observe intra-regional trade where one country exports goods it has a RCA while the importer does not (there exist trade complementary between the two countries) it is logical to conjecture that a discriminatory trade liberalisation could induce trade creation, in the sense that an inefficient local producer is substituted with a more efficient one within the zone. On the other hand, when the goods imported are those other members of the agreement do not have a RCA the emergence of trade diversion is more likely to be taking place, since in this case efficient producers from the ROW are substituted with others more inefficient within the zone. In the case of the MERCOSUR, and according to the evidence for the year 1993-2004, we could argue that in the cases of Paraguay, and to a lesser extend also Uruguay, intra-MERCOSUR trade goes more in line with the country members' RCA, exporting goods they have a RCA and importing those other members also have a RCA. On the other hand, in the cases of Argentina and Brazil the results are more mixed, with an important share of intra-MERCOSUR exports explained by sectors the country does not have a RCA, but at the same a large proportion of their intra-MERCOSUR imports comes from sectors where the other three country members do not have a RCA. However, once we control for the for the importance of intra-MERCOSUR imports in total imports, the share of intra-zone imports where the other three countries do not have a RCA represented just 4.3% of total imports in the case of Brazil, while in the cases of Argentina, Paraguay and Uruguay the figures increases to 10.3%, 11.5% and 13.4% respectively. Something similar happens with exports, in this case intra-MERCOSUR exports of goods the exporter country did not have a RCA in 1993 were 5.3% of total exports in the case of Brazil, while for Argentina, Paraguay and Uruguay the figures are 13%, 7.3% and 12.6% respectively.

Table 2
Typology of goods (HS 4 digit) by group of MERCOSUR countries with RCA
Structure of intra-MERCOSUR trade 1993-2004

Group	Argentina		Brazil		Paraguay		Uruguay	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
a) Products with RCA in only country								
A (Argentina)	36.0%	2.8%	3.4%	31.3%	6.6%	21.4%	2.8%	13.7%
B (Brazil)	15.6%	35.8%	37.7%	13.2%	2.6%	27.1%	8.1%	28.3%
P (Paraguay)	0.2%	0.2%	0.2%	0.2%	1.6%	0.5%	0.2%	0.6%
U (Uruguay)	5.0%	7.9%	6.6%	5.9%	0.1%	1.4%	14.1%	3.1%
b) Products with RCA in two countries								
AB	3.4%	3.1%	3.5%	2.2%	0.2%	3.5%	0.4%	5.7%
AP	1.2%	0.5%	0.3%	2.6%	15.3%	0.2%	1.0%	0.6%
AU	5.2%	0.6%	0.4%	9.3%	0.3%	1.9%	16.2%	1.3%
BP	0.6%	4.5%	3.8%	0.8%	7.6%	1.0%	0.1%	2.4%
BU	2.1%	5.2%	7.2%	1.9%	1.7%	14.5%	11.2%	3.8%
PU	0.1%	0.0%	0.0%	0.2%	0.2%	0.0%	0.1%	0.0%
c) Products with RCA in three countries								
ABP	2.2%	1.6%	1.9%	4.3%	52.1%	2.1%	0.3%	6.4%
ABU	1.0%	1.6%	2.0%	0.8%	1.0%	2.5%	3.7%	3.4%
APU	2.9%	0.3%	0.1%	5.0%	2.2%	1.0%	16.7%	0.2%
BPU	0.2%	0.5%	0.5%	0.2%	0.5%	0.6%	2.0%	0.9%
d) RCA in all countries								
ABPU	2.4%	0.6%	0.4%	3.2%	6.9%	0.2%	6.3%	2.9%
e) RCA in no countries								
NONE	21.9%	34.9%	32.1%	18.9%	1.1%	22.1%	16.7%	26.7%
The country does not have a RCA	45.7%		43.1%		13.6%		29.7%	
None of the other 3 countries have a RCA		37.7%		32.1%		22.7%		29.8%

Source: Table A.3

The data presented in Tables 1 and 2 refer to the period 1993-2004 as a whole, however, an important aspect to look at is if as integration under the MERCOSUR deepened, the patterns of trade of its members changed with respect to those prevailing at the beginning of the integration process, especially in the case of sectors countries did not have a RCA¹⁷. As shown in Tables 3, the relative importance of exports of goods MERCOSUR countries did not have a RCA in 1993 is all cases higher in the case of intra-MERCOSUR trade than when looking at trade with the ROW. Not surprisingly, the opposite scenario arises in the case of imports (Table 4). With the exception of Uruguay in the case of imports, the importance of these sectors has increased over time, intra- and extra-zone trade. In the case of exports, the average growth rate during the period 1993-2004 have been larger in the cases of Paraguay and Uruguay, than in the cases of Argentina and Brazil. For the four countries, the increase has been faster in the case of exports to the ROW. This last result might be reflecting a “learning by doing” effect, as MERCOSUR countries increased their intra-zone exports of goods they did not have a RCA allowed also increasing exports of this kind of goods to the ROW. A more careful analysis is required here before drawing more precise conclusions. On the other hand, imports show the opposite scenario. In this case, intra-zone imports of goods the other MERCOSUR countries did not have a RCA in 1993 increased faster than imports of similar goods from the ROW, the exception is Uruguay, where in both cases we observe a negative growth rate. Also, differently from the case of exports, growth rates were higher in the cases of Argentina and Brazil than for the other two countries. When looking at the importance of these sectors across the four countries, we do not observe much difference in the case of imports from the ROW, while in the case of intra-MERCOSUR imports the importance of these sectors is larger in the cases Argentina and Brazil. However, as noticed before, once we control for the share of intra-MERCOSUR imports in total imports, the order is reversed, with these sectors being more important in the cases of Paraguay, Uruguay and

¹⁷ Without this implying trade patterns previous to MERCOSUR were an accurate reflection of the comparative advantages of each of its members.

Argentina than Brazil. Finally, in the case of exports MERCOSUR countries did not have a RCA in 1993, we have these represent a larger proportion in the cases of Argentina (intra-zone exports) and Brazil (extra-zone exports) than in the other two countries. However, like in the case of imports, once we control for the importance of intra-MERCOSUR exports in the total exported by each country, the relevance of these sectors in the case of Brazil's exports to other MERCOSUR members are less important than they are for the other three countries.

3. Theoretical and Methodological aspects

As barriers on international trade between members of a regional agreement are dismantled, we might expect changes in the structure of trade with other members of the agreement *vis a vis* the ROW. In this case, we can expect intra-regional trade having an increasing weight at the expense of trade with countries that are not benefited by a preferential treatment.

Considering that a country's trade performance depends on a wide set of influences, many of which are interdependent, it is not an easy task to try to model the effects of trade integration on the patterns of trade of countries involved in such processes. In what follows, and based on Krugman (1980) monopolistic competition model of international trade, we derive an equation explaining, for a given country z , the ratio of imports of good i from any two countries j and h .

Table 3
Exports by destiny: share of exports where the exporter country did not have a RCA in 1993

	ARGENTINA		BRASIL		PARAGUAY		URUGUAY	
	Mercosur	ROW	Mercosur	ROW	Mercosur	ROW	Mercosur	ROW
1993	33.1%	8.3%	40.1%	12.5%	3.2%	0.4%	25.6%	2.6%
1994	35.6%	9.8%	39.9%	13.4%	14.5%	1.7%	30.7%	3.1%
1995	41.2%	10.9%	40.6%	12.8%	13.8%	1.2%	24.4%	3.4%
1996	40.7%	7.6%	41.4%	12.9%	12.1%	2.1%	21.3%	4.0%
1997	48.8%	7.5%	41.3%	13.2%	15.0%	3.7%	24.9%	4.8%
1998	53.3%	9.1%	39.5%	14.1%	14.8%	2.5%	26.5%	4.7%
1999	47.1%	11.4%	42.1%	14.8%	15.8%	5.0%	32.1%	4.2%
2000	46.0%	13.3%	46.1%	16.9%	14.9%	6.1%	36.9%	4.9%
2001	50.6%	13.0%	44.3%	21.3%	15.3%	9.5%	37.2%	6.5%
2002	45.9%	13.0%	49.1%	23.0%	12.8%	6.6%	32.8%	19.8%
2003	43.6%	13.4%	46.5%	22.9%	15.3%	9.9%	32.4%	21.5%
2004	49.8%	11.7%	48.1%	23.0%	12.4%	7.9%	40.4%	24.2%
Growth rate (*)	2.8%	4.3%	1.9%	6.6%	5.6%	24.8%	4.1%	19.8%

(*) Based on the regression: $\ln(Y_t) = a + b.t$

Table 4
Imports by origin: share of imports where the other three MERCOSUR countries did not have a RCA in 1993

	ARGENTINA		BRASIL		PARAGUAY		URUGUAY	
	Mercosur	ROW	Mercosur	ROW	Mercosur	ROW	Mercosur	ROW
1993	33.5%	66.1%	15.5%	64.1%	25.0%	59.9%	33.5%	61.2%
1994	29.7%	67.1%	18.2%	70.4%	25.6%	58.5%	32.6%	63.7%
1995	33.7%	67.7%	25.2%	73.9%	19.7%	59.0%	28.2%	59.2%
1996	34.0%	67.1%	27.2%	71.3%	19.0%	60.7%	26.9%	57.5%
1997	36.3%	64.1%	35.9%	74.5%	19.6%	58.3%	30.0%	59.2%
1998	33.9%	63.7%	41.4%	76.3%	21.1%	63.3%	31.7%	59.3%
1999	36.9%	63.6%	34.8%	76.3%	22.9%	63.6%	31.6%	62.0%
2000	43.1%	66.1%	33.2%	74.7%	20.6%	63.1%	30.4%	57.5%
2001	40.2%	67.4%	39.5%	74.5%	24.0%	59.8%	28.4%	60.3%
2002	46.3%	66.8%	32.9%	72.8%	26.2%	59.7%	26.1%	57.8%
2003	41.5%	70.3%	30.3%	72.0%	27.5%	55.4%	24.7%	47.6%
2004	43.1%	68.3%	34.2%	69.6%	25.5%	60.5%	31.5%	43.9%
Growth rate (*)	3.3%	0.3%	5.8%	0.4%	1.5%	0.0%	-1.2%	-2.2%

(*) Based on the regression: $\ln(Y_t) = a + b.t$

3.1. The theory of the preferential liberalization

The classical theory of preferential trade liberalisation is based on the concepts of trade creation and trade diversion. The aim is trying to identify if the reallocation of resources, both in consumption and production, produced by the substitution of suppliers that a discriminatory trade liberalisation produces, increases or reduces the aggregate level of welfare. To be able to determine which of the two effects, trade diversion or trade creation, will prevail it becomes necessary to establish a typology of the protection regimes that will follow after a discriminatory trade liberalisation. With this aim in mind, two aspects need to be taken into account, the relative sizes of the importer and exporter countries, and the efficiency of production of the exporter country relative to that of the rest of the world. Table 5 summarises the different alternatives. The first regime is when the exporter country within the regional agreement (country B) is not large enough to satisfy the demand of the importer country (country A). In this case the exporter country (B) wins since it captures the tariff revenues lost by the importer country (A), while the zone as a whole receives a lower welfare. Country B benefits from the protection granted by country A, increasing its production. Country A benefits when it liberalises its trade with a country B whose producers are efficient enough, and the country is large enough to maintain its own low prices after the agreement takes place, in this case the demand from A is not large enough given the supply by country B. Under these conditions, country B is indifferent, while the zone as a whole receives a larger welfare. In all other cases country B always wins as well as the two countries together, the situation of country A is ambiguous, depending on the magnitudes of the trade creation and trade diversion effects.

The most frequent case is when the exporter country sells its production in A at the high domestic price prevailing in this country (because of the tariffs on imports from the ROW), while it supplies its own market with cheap imports from the ROW.

Table 5
Welfare effect of a preferential trade policy

Country	Enhanced protection		Intermediate case		Reduced protection	
	B efficient	B non efficient	B efficient	B non efficient	B efficient	B non efficient
A	-	-	+ / -	+ / -	+	+ / -
B	+	+	+	+	0	+
Zone	-	-	+	+	+	+

In order to evaluate the welfare effects of any given agreement it is necessary to look at the markets where the members of the agreement show an import or export regional specialisation. The model developed below assumes product differentiation *à la* Dixit-Stiglitz. Under this framework it is necessary to adapt the concepts of trade diversion and trade creation as originally proposed by Viner (1950) for the case of homogeneous goods in a model with 3 countries and 2 goods. There are many potential cases to look at when trying to analyse the welfare effects of a discriminatory trade liberalisation. An important case is the 3x3 model by Meade (1955) and later extended by Vanek (1965) and Lipsey (1970), which allows looking at the effects of trade modification¹⁸. The welfare effects will depend on the quality of the substitutes and complementary goods that are traded inside and outside the union. If the goods traded within the union are close substitutes with those traded with the ROW, we might expect a contraction of trade flows with countries that are not members of the trade agreement. On the other hand, if the two groups of goods are complementary we can expect an increase in trade with the ROW. The net welfare effect will then depend on the balance of three effects: trade creation, trade diversion and trade modification.

Let us assume a model with 3 countries (A, B and C), 3 goods (1, 2, and 3), where each country produces only one good: A produces good 1, B produces good 2, and C produces good 3. Countries A and B are the two members of the union, C plays the role of the ROW. The integration between countries A and B implies the elimination of tariffs on their reciprocal trade, this means that in the case of country A the domestic price of good

¹⁸ Trade modification is defined as the change in trade with outside countries due to the elimination of tariffs on goods traded only within the union (see Ethier and Horn, 1984).

2 falls. The assumption that each good is produced only by one country ensures that there is no trade diversion. Then, in the case of good 2 country A has a net welfare gain (the increases in the consumer surplus exceeds the loss of tariff revenues). The effect on the market of good 3 (which is only produced by the ROW) depends on if this good is substitute or complement of good 2. If goods produced inside and outside the union are substitutes, there is a reduction in the demand of good 3 in country A, this means a loss of tariff revenues as well as a reduction of the consumer surplus. On the other hand, if the two goods are complement, there is an increase in the demand of good 3 by country A, which raises the tariff collection and also increases the consumer surplus. In summary, the aggregate effect on country A's welfare depends on what happens in the markets of goods 2 and 3.

Vousden (1990) analyses the effect of marginal tariff reductions, he derives the complementary and substitutability conditions among goods traded inside and outside the union such that a net welfare gain is secured after the union. The members of the union would more likely to benefit from it when: the closer substitutes are the goods traded within the union and the less is the substitutability between goods traded within the union and those imported from the ROW. From these conditions we have that a successful integration agreement requires the countries involved in it to be as similar as possible (they produce close substitutes) and as dissimilar as possible to the ROW (a low substitutability among the goods produced by the members of the union and those produced by the ROW).

Panagariya (2000) points out that in the model with product differentiation *à la* Krugman (1980), the effects of a preferential trade agreements can be considered as an special case of the Meade-Vanek-Lipsey model, where the terms of trade with the ROW are not fixed (as a consequence of the product differentiation). In this sense, the introduction of product differentiation recovers a traditional result from Mundell (1964), which showed that when import demands for all goods show gross substitutability and

initial tariffs are low, a discriminatory tariff reduction by one country increases the terms of trade of the country benefiting from the reduction with respect to both the country reducing the tariffs and the ROW, on the other hand, the terms of trade of the country reducing the tariffs might rise or fall with respect to countries outside the union.

3.2. Preferences and trade flows

Zignago y Mayer (2004) defines a border effect measure estimating a model that explains the import ratio between the foreign and domestic markets. The micro-foundations of the estimable form employs the well know model of monopolistic competition applied to the international market (Krugman, 1980). They used domestic sales to normalize import from foreign markets, this requires the same level of product aggregation for production and trade statistics, however, the latter are usually available to a much greater detail, with production statistics being usually available with a too high level of aggregation. In the present paper we apply this model to derive an estimable equation of regional imports relative to imports from the rest of the world. The objective is to estimate the effect of regional tariff preferences over the structure of foreign expenditure from different origins.

Let us assume a world economy with J countries. In each country j ($j \in J$) there are I industries or sectors, with each industry i ($i \in I$) producing N different varieties. Let us also assume in each country there is a representative consumer with the following utility function:

$$U^z = \prod_{i \in I} (u_i^z)^{\theta_i^z} \quad 0 < \theta_i^z < 1, \quad \sum_{i \in I} \theta_i^z = 1 \quad (3.1)$$

where u_i^z is a composite of all sector i 's varieties equal to:

$$u_i^z = \left(\sum_{j \in J} \sum_{n \in N} \left(c(n)_i^{z,j} \right)^{\frac{(\sigma-1)}{\sigma}} \right)^{\frac{\sigma}{(\sigma-1)}} \quad (3.2)$$

where $c(n)_i^{z,j}$ is the quantity consumed in country z of variety n produced by a firm in industry i located in country j ; $\sigma > 1$ is the elasticity of substitution. Utility maximisation subject to the consumer's budget constraint means:

$$c(n)_i^{z,j} = \frac{(p_i^{z,j})^{-\sigma}}{(P_i^z)^{1-\sigma}} \theta_i^z Y^z = \frac{(\tau_i^{z,j} p_i^j)^{-\sigma}}{(P_i^z)^{1-\sigma}} \theta_i^z Y^z \quad (3.3)$$

where: $p_i^{z,j}(p_i^j)$ is the consumer (producer) price in country z (j) of every variety produced by sector i ; $\tau_i^{z,j} > 1$ are Samuelson's iceberg transport costs to go from j to z ; θ_i^z is the share of country z income (Y^z) expended in the consumption of varieties of sector i ; P_i^z is the price index in country z of all varieties (imported and locally produced) of sector i .

From equations (3.1), (3.2) and (3.3) we have that total imports, including the proportion that melts in transit, by country z of varieties produced by sector i in country j are equal to:

$$M_i^{z,j} = N_i^j (p_i^j)^{1-\sigma} (\tau_i^{z,j})^{1-\sigma} \theta_i^z Y^z (P_i^z)^{\sigma-1} \quad (3.4)$$

where N_i^j is the number of varieties produced by sector i in country j ;

Using (3.4) we have that for any country z and sector i , the ratio between imports from any two countries j and h is given by:

$$\frac{M_i^{z,j}}{M_i^{z,h}} = \frac{N_i^j}{N_i^h} \left(\frac{p_i^j}{p_i^h} \right)^{1-\sigma} \left(\frac{\tau_i^{z,j}}{\tau_i^{z,h}} \right)^{1-\sigma} \quad j, h \in J \text{ and } j \neq h \quad (3.5)$$

For any country j the value of production by sector i is equal to:

$$V_i^j = p_i^j q_i^j N_i^j \quad (3.6)$$

Under the usual assumptions of the Dixit-Stiglitz monopolistic competitive model, and assuming all countries have access to the same technology, is possible to show that the scale of production for each firm is identical across countries ($q_i^j = q_i^h = q_i$, $j, h \in J$ and $j \neq h$). Using this result and (3.6) we have:

$$\frac{N_i^j}{N_i^h} = \frac{p_i^h V_i^j}{p_i^j V_i^h} \quad j, h \in J \text{ and } j \neq h \quad (3.7)$$

With respect to transactions costs ($\tau_i^{z,j}$), they depends on the distance between markets through a general function $d^{z,j}$, tariffs ($T_i^{z,j}$), and others non-tariff barriers (ntb_i^z) which are assumed to be applied in a non discriminatory way. More specifically, transports costs are assumed to take the following form:

$$\tau_i^{z,j} = d^{z,j} (1 + T_i^{z,j}) (1 + ntb_i^z) \quad (3.8)$$

where $T_i^{z,j}$ is the import tariff imposed by country z on imports of goods produced by sector i in country j . Using (3.8) we have:

$$\frac{\tau_i^{z,j}}{\tau_i^{z,h}} = \frac{d^{z,j}}{d^{z,h}} \left(\frac{1 + T_i^{z,j}}{1 + T_i^{z,h}} \right) \quad j, h \in J \text{ and } j \neq h \quad (3.9)$$

Substituting equations (3.7) and (3.9) into equation (3.5), the ratio of imports by country z of goods produced by sector i in countries j and h is equal to:

$$\frac{M_i^{z,j}}{M_i^{z,h}} = \frac{V_i^j}{V_i^h} \left(\frac{p_i^{z,j}}{p_i^{z,h}} \right)^{-\sigma} \left(\frac{d^{z,j}}{d^{z,h}} \frac{1 + T_i^{z,j}}{1 + T_i^{z,h}} \right)^{1-\sigma} \quad (3.10)$$

4. Results of the empirical model

As pointed out in the Introduction, the aim of our research is to evaluate the role of tariff preferences under the MERCOSUR on the regional patterns of imports of its country members.

Based on the model of the former section, the ratio between imports by country z of goods produced by sector i from any two countries j and h is expressed as follows:

$$\ln(m_{i,t}^z) = \alpha_0 + \sum_{l=1}^L \beta_l \ln(m_{i,t-l}^z) + \phi_1 (rer_{i,t}^z) + \phi_2 \ln(T_Pref_{i,t}^z) + \varepsilon_{i,t}^z \quad (4.1)$$

where:

- z : importer country member of the regional agreement.
- i : 4-digit code sector according to the Harmonised System Classification.
- t : time.
- $m_{i,t}^z$: country z 's imports in year t of goods produced by sector i originated in MCS(-1) divided by country z 's imports in year t of goods produced by sector i originated in ROW.¹⁹
- rer : real exchange rates between country z and the other members of the regional agreement divided by the real exchange rate between country z and the ROW. The real exchange rate between z and the other members of the regional agreement is a weighted average of the real exchange rates between z and each member of the regional agreement. The real exchange rate between country z and the ROW is measured by the real exchange rate between country z and the US dollar. Imports are used as weights.
- T_Pref : tariff preference granted to other MERCOSUR countries measured as: $1 + \text{MFN Rate} - \text{Intra-MERCOSUR rate}$
- $\varepsilon_{i,t}^z$: error term which is assumed to have the following structure $\varepsilon_{i,t}^z = \eta_i^z + \nu_{i,t}^z$, where η_i^z is a sector specific effect.

One way to test if the MERCOSUR affected the import patterns of its members, would be through the estimation of equation 4.1 for before and after MERCOSUR was signed, and test if the coefficient ϕ_2 is the same for both periods. To follow this approach would require data on both imports and tariff preferences before the MERCOSUR was launched. However, data availability prevents us following this strategy. Firstly, statistics on tariff preferences are not easily available for before the MERCOSUR. Considering the limited scope of the integration process during pre-MERCOSUR times, one alternative would be to assume that pre-MERCOSUR preferences were constant at their values immediately before the MERCOSUR started. A second, and more difficult, problem to overcome is that countries good classifications used before the implementation of the Harmonised System Classification (HS) at the beginning of the nineties do not allow us to homogenize statistics for before and after MERCOSUR, at least at the level of detail used here. Because of these restrictions, the results reported below must not be understood as

¹⁹ MCS(-1): other countries but country z that are members of the regional agreement. ROW: rest of the world (includes all countries which do not benefit from a preferential treatment by country z).

measuring the change in the role of tariff preferences due to the MERCOSUR, but just the effect of tariff preferences since the launching of MERCOSUR.

An important element when evaluating any preferential trade agreement is the presence of trade diversion. Within the stylized theoretical framework of section three, where goods are differenced across sectors and countries, such that each variety is produced just by a single producer, there is no place for the presence of trade diversion, at least in the usual sense of the concept, that is the shift in domestic consumption from a low-cost source (the ROW) to a higher-cost source (a partner of the regional agreement). However, in addition to the fact that the model of section three is a very stylized description of the real world, where each goods is usually produced by different producers in different countries, another reason for the emergence of trade diversion is the fact that the empirical analysis carried out below uses aggregate data, with goods sharing some common characteristics, which we may assume are closer substitutes, being grouped together.

In order to account for the presence of trade diversion, the variable T_Pref is interacted with a set of group dummies, with the dummies being constructed taking into account the existence of trade complementarities between MERCOSUR members and the ROW. Using the Revealed Comparative Index (RCA) as defined by CEPII (1993), a country j is said to have a comparative advantage in the production of sector i if its RCA index for that sector is positive, on the other hand, if the RCA index for sector i is negative the country is said to have a comparative disadvantage. As Table 6 shows, there are potentially eight groups or combinations according to the signs of the RCA indices of importer country z and the two exporter regions.

Table 6: D_g dummies

Dummy	RCA index sector i in 1993		
	Importer: z	Exporter j : MCS(-1) ⁽¹⁾	Exporter h : ROW ^{(1) (2)}
$g=1$	+	+	+
$g=2$	+	+	-
$g=3$	+	-	+
$g=4$	+	-	-
$g=5$	-	+	+
$g=6$	-	+	-
$g=7$	-	-	+
$g=8$	-	-	-

(1) RCA_i^{mcs} and $RCA_i^{mcs(-1)}$ are calculated without considering intra-zone trade.

(2) To obtain the sign of RCA for the ROW we make use of the fact that $sign(RCA_i^{row}) = sign(-RCA_i^{mcs})$.

However, since it is not possible for all countries having simultaneously a comparative advantage (positive RCA) or a comparative disadvantage (negative RCA) in the same sector, groups 1 and 8 are empty. Additionally, with the aim of reducing the number of interactions, all sectors i for which the RCA index of the importer country z is positive ($g=2, \dots, 4$) are included into a single group ($g=0$). In summary, four group dummies are used (Table 7).

Table 7: D_g dummies

Dummy	RCA index sector i in 1993		
	Importer: z	Exporter j : MCS(-1)	Exporter h : ROW
$g=0$	Positive RCA for country z		
$g=5$	-	+	+
$g=6$	-	+	-
$g=7$	-	-	+

4.2. Econometric issues

A problem with the estimation of equation 4.1 is produced by the presence on the RHS of the dependent variable lagged one or more periods, which by definition are correlated with the error term. This correlation between some of the explanatory variables and the error term means that the results obtained from applying the Least Square Dummy Variable (LSDV) estimator are inconsistent.²⁰ Anderson and Hsiao (1981) suggested, for the case of an AR(1) model (i.e. $y_{i,t} = \alpha y_{i,t-1} + \eta_i + v_{i,t}$), a two-step procedure for the equation in first-difference such that it eliminates the specific effect η_i , and with the lagged first difference of the dependent variable ($\Delta y_{i,t-1}$) on the RHS being instrumented with $y_{i,t-2}$. If $y_{i,1}$ is uncorrelated with the subsequent disturbances $v_{i,t}$ for $t=2,3,\dots,T$, and the error term $v_{i,t}$ is not serially correlated, the Anderson-Hsiao estimator produces consistent estimations when N (the number of cross section units) is large and T (the number of time periods) is fixed. Anderson and Hsiao (1982) extend the analysis to the case with exogenous variables on the RHS. Arellano and Bond (1991) proposed a GMM procedure to obtain additional instruments using all available lagged values of the dependent variable. Additionally, if like in the case of equation 4.1, other explanatory variables appear in the RHS (i.e. $y_{i,t} = \alpha y_{i,t-1} + \beta x_{i,t} + \eta_i + v_{i,t}$), three cases need to be considered (Bond, 2002): Firstly, if $x_{i,t}$ is assumed to be endogenous, it is correlated with contemporaneous ($v_{i,t}$) and past ($v_{i,t-1}, v_{i,t-2}, \dots, v_{i,t-n}$) shocks, but uncorrelated with subsequent shocks ($v_{i,t+1}, v_{i,t+2}, \dots, v_{i,t+n}$), they are treated in the same way as the dependent variable, with $x_{i,t-2}$, $x_{i,t-3}$ and longer lags being valid instruments for the equation in first difference. Secondly, if $x_{i,t}$ is assumed to be predetermined in the sense

²⁰ As reported by Judson and Owen (1999) through the use of Monte Carlo simulations, the estimation bias is more severe in the case of the coefficients for the lagged dependent variable than for the other variables included in the RHS of the equation. Bun and Kiviet (2003) obtain similar results.

that it is uncorrelated with the contemporaneous error $v_{i,t}$, $x_{i,t-1}$ can be also used as instrument. Finally, under the strongest assumption that $x_{i,t}$ is exogenous, it is also uncorrelated with past shocks, the whole series $x_{i,1}, x_{i,2}, \dots, x_{i,T}$ can be used as instruments.

A potential problem with Arellano and Bond (1991) estimator is that lagged levels might be poor instruments for first differences, causing large sample bias when time series are persistent and T is small (Blundell and Bond, 1998). Under these circumstances, Blundell and Bond (1998) proposed a GMM estimator for the levels equations, with lagged first-differences and lagged levels of the dependent variable used as instruments. If other regressors $x_{i,t}$ are included, and we assume they are uncorrelated with the cross-section specific effects η_i , lagged values of $x_{i,t}$ can be used as instruments in the levels equations. If $x_{i,t}$ is correlated with the specific effects η_i , but its first-difference is not, $\Delta x_{i,t}$ and $\Delta y_{i,t}$ can be used as instruments in the levels equations (Bond, 2002).

As said before, the problem with the LSDV estimator is that it produces inconsistent results because of the correlation between the cross-section specific effects η_i and the lags of the dependent variable, the bias approaches zero as T approaches infinity. Nickell (1981) analyses the case of a balanced AR(1) model when N approaches infinity, while Kiviet (1995) and Kiviet (1999) concentrate on the case when N is small. Bruno (2005a) obtains an expression for the bias in the case of unbalanced panels. Applications of the corrected LSDV estimator (LSDVC) are, among others, Judson and Owen (1999), Léger (2006) and Bruno (2005b). Using Monte Carlo simulations, Judson and Owen (1999) find out that when the time dimension of the panel is small, the LSDVC estimator is preferred. Bruno (2005b) also finds out that LSDVC performs better than the Anderson-Hsiao estimator, as well as than Arellano-Bond and Blundell-Bond GMM estimators, in the case of unbalanced panels where the cross-section dimension is small.

A problem with the LSDVC estimator is that it assumes all other regressors are exogenous. In the results reported below we proceed to estimate equation 4.1 by alternative methods.

Finally, in order to check for the robustness of the results, equation 4.1 is estimated using alternative samples according to two criteria: sectors and coverage in time and import shares (Table 8).

Table 8: Alternatives Samples for estimation

Sectors	Other Criteria	
	None	Sector <i>i</i> represent at least 0.05% of total imports at least in 10 years
All	Sample A.1	Sample A.2
Manufactures (*)	Sample M.1	Sample M.2

(*) HS codes 2800 to 9618.

One of the reasons for using a more restrictive sample, which includes only sectors representing a minimum share of imports during a certain number of years, is to avoid the influence of sectors which behaviour is highly volatile over time, which in most cases involves transactions of very small magnitudes.²¹ In the case of the samples including only manufacturing sectors, the reason is that the monopolistic competitive model presented in section three is more suitable for manufactures than for primary sectors, where the endowment of natural resources play a much more important role in determining the origin of imports.

²¹ Depending on the country we look at, sectors included into samples A.2 and M2 represent between 61% and 85% of total imports by sectors included into samples A.1 and M.1.

4.3. Results

In this section we present the results for alternative specifications of equation 4.1 for each of the four members of MEROSUR (Tables 9 to 12). In the first four columns we report the results from alternative specifications of the Blundell and Bond (1998) estimator.²² In columns 1 and 2, the real exchange rate and tariff preference variables were considered as predetermined, in columns 3 and 4 they were considered to be endogenous. In columns 1 and 3 all available lags were used as instruments, while in the cases of columns 2 and 4 the first available lag was not included into the set of instruments. Column 5 reports the results from the application of the LSDVC estimator.²³ In the cases of Argentina, Paraguay and Uruguay, two lags of the dependent variables were included on the RHS of equation 4.1, except in the case of the LSDVC estimator where only one lag was included.²⁴ In the case of Brazil, only one lag was used in all cases. In all cases we controlled for time and sectors specific effects.

Table 9 reports the results for Argentina. When the tariff preference variable is not interacted with the group dummies, we have that in all cases the estimated effect is positive and statistically significant at less than 1%. This result means that an increase in the tariff preference enjoyed by sector i induces to an increase in the value of imports from other MERCOSUR countries relative to imports from countries which do not benefit from a preferential treatment. As reported in the Appendix, the estimated coefficients are larger in the case that all sectors are included into the sample than when this is restricted to manufacturing sectors. The estimated coefficients are, in general, lower when the sample is restricted such that it only includes sectors which represent a minimum of total imports and were traded most systematically during the years included in the sample (samples A.2 and M.2, Table 8). This result would imply that the effect of tariff preferences is more

²² All estimations were carried out using Stata's routine `xtabond2` (Roodman, 2005).

²³ The LSDVC estimations were calculated using Stata's routine `xtlsdvc` (Bruno, 2005c).

²⁴ This is due to technical restrictions of the `xtlsdvc` command.

important in the case of goods that are less often traded, where the role of a pre-existent relationship between buyers and seller may be less important. When tariff preferences are interacted with the group dummies, we have again that in most of the cases the estimated coefficients are positive and statistically significant. Something that is important to point out in this case is that this result arises also in the case of imports of goods included into group 7. Goods included into group 7 are those for which the RCA indices of the importer country and of the other three members of the MERCOSUR are negative, while the coefficient is positive for the ROW. This means that for these goods the importer country and the other three members of the MERCOSUR have a comparative disadvantage, while the ROW has a comparative advantage, in this case we may expect the estimated coefficient to be not statistically significant. However, as reported in the Appendix, the estimated coefficients measuring the effect of tariff preferences in the case of goods included into group 7 are always lower than those for the other three groups. Moreover, as could have been expected, the highest coefficients correspond to group 6, which includes goods for which the importer country and the ROW have a comparative disadvantage (their RCA indices are negative) while the other members of the MERCOSUR have a comparative advantage (a positive RCA index).

Table 10 presents the results for Brazil. When the variable measuring intra-MERCOSUR tariff preferences is not interacted with the group dummies, we obtain not very conclusive results. In a few cases, the estimated coefficient is positive and statistically significant, this is the case when the sample is restricted to include those sectors that are more systematically traded over time and representing at least 0.5% of total imports. When the tariff preference variable is interacted with the group dummies, we have that the coefficients are positive and statistically significant in the cases of group 5 and 6, and to a less extent also in the case of group 0. On the other hand, in opposition to the results for Argentina, there is no evidence suggesting the presence of trade diversion, in the case of the interaction with the dummy for group 7 the estimated coefficients are not

statistically significant, and when they are they take a negative value. Regarding the magnitude of the coefficients, the results supports the intuition, with the estimated effects being much larger in the case of goods included into group 6, those for which the other MERCOSUR members have a comparative advantage, while both Brazil and the ROW have a comparative disadvantage.

The results for Paraguay are reported in Table 11. Similarly to the case of Brazil, when the tariff preference variable is not interacted with the group dummies there is no evidence that tariff preferences granted under the MERCOSUR may have significantly affected the pattern of imports, despite all coefficients having the expected positive sign, only in a few cases they are statistically significant. When looking at the effects across different groups, the estimated coefficients are positive and statistically significant in the case of group 6, and also to a less extent group 5. Like in the case of Brazil, the results do not support the view of a trade diversion effect in the case of Paraguay.

The results for Uruguay are in line with those obtained in the case of Argentina. As shown in Table 12, for the benchmark case when the tariff preference variable does not interact with the group dummy variables, all estimated coefficients are positive, and with two exceptions they are always statistically significant. Similar results arise when the effects of tariff preferences are allowed to vary across groups, with most coefficients being positive and statistically significant. This is also true in the case of group 7; however the results are a little bit more ambiguous than those obtained for Argentina.

In summary, we have that tariff preferences granted under the MERCOSUR have had a significant effect on the import patterns of Argentina and Uruguay, and to a less extent in the cases of Brazil and Paraguay. For Argentina and Uruguay the results appears to sustain the hypothesis that the MERCOSUR may have induced a trade diversion effect, no such effect arises for the other two countries.

Table 9

Argentina: Effect of tariff preferences on imports from MERCOSUR relative to imports from ROW

		All Sectors					Manufactures					
		Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	
Variable		BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference		+	+	+	+	+	Preference	+	+	+	+	+
		***	***	***	***	***		***	***	***	***	***
Variable		BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference		+	+	+	+	+	Preference	+	+	+	+	+
		***	***	***	***	***		***	***	***	***	***
Variable		BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0		+	+	+	+	+	Preference x Group 0	+	+	+	+	+
		***	***	***	***	**		***	***	***	***	**
Preference x Group 5		+	+	+	+	+	Preference x Group 5	+	+	+	+	+
		***	***	***	***	**		***	***	***	***	**
Preference x Group 6		+	+	+	+	+	Preference x Group 6	+	+	+	+	+
		***	***	***	***	**		***	***	***	***	**
Preference x Group 7		+	+	+	+	+	Preference x Group 7	+	+	+	+	+
				***	***	***		*	**	***	***	***
Variable		BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0		+	+	+	+	+	Preference x Group 0	+	+	+	+	+
		***	***	***	***	**		***	***	***	***	**
Preference x Group 5		+	+	+	+	+	Preference x Group 5	+	+	+	+	-
		***	***	***	***	**		***	***	***	***	**
Preference x Group 6		+	+	+	+	+	Preference x Group 6	+	+	+	+	+
		***	***	***	***	***		***	***	***	***	***
Preference x Group 7		+	+	+	+	+	Preference x Group 7	+	+	+	+	+
		***	***	***	***	***		***	***	***	***	***

*** p<0.01, ** p<0.05, * p<0.1

Notes: see Appendix B.

Table 10

Brazil: Effect of tariff preferences on imports from MERCOSUR relative to imports from ROW

All Sectors						Manufactures					
	Column 1	Column 2	Column 3	Column 4	Column 5		Column 1	Column 2	Column 3	Column 4	Column 5
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference	- ***	- ***	+	+	+	Preference	-	-	+	+	-
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Preference	+	+	+	+	+	Preference	+	+	+	+	+
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0	-	-	+	-	+	Preference x Group 0	+	+	+	+	+
Preference x Group 5	+	+	+	+	+	Preference x Group 5	+	+	+	+	-
Preference x Group 6	+	+	+	+	-	Preference x Group 6	+	+	+	-	-
Preference x Group 7	-	-	-	-	-	Preference x Group 7	-	-	-	-	+
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Preference x Group 0	+	+	+	+	+	Preference x Group 0	+	+	+	+	+
Preference x Group 5	+	+	+	+	+	Preference x Group 5	+	+	+	+	-
Preference x Group 6	+	+	+	+	-	Preference x Group 6	-	+	+	+	-
Preference x Group 7	-	-	+	+	+	Preference x Group 7	-	+	+	+	+

*** p<0.01, ** p<0.05, * p<0.1

Notes: see Appendix B.

Table 11

Paraguay: Effect of tariff preferences on imports from MERCOSUR relative to imports from ROW

All Sectors						Manufactures					
	Column 1	Column 2	Column 3	Column 4	Column 5		Column 1	Column 2	Column 3	Column 4	Column 5
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference	+	+	+	+	+	Preference	+	+	+	+	+
			**		*				*		**
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Preference	+	+	+	+	+	Preference	+	+	+	+	+
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0	+	+	+	+	+	Preference x Group 0	+	-	+	+	+
Preference x Group 5	+	+	+	+	+	Preference x Group 5	+	+	-	+	+
Preference x Group 6	+	+	+	+	+	Preference x Group 6	+	+	+	+	+
Preference x Group 7	-	-	-	+	+	Preference x Group 7	-	-	-	-	+
				*					*		**
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Preference x Group 0	-	+	+	+	-	Preference x Group 0	-	-	-	-	-
Preference x Group 5	+	+	+	+	+	Preference x Group 5	+	+	+	+	+
Preference x Group 6	+	+	+	+	-	Preference x Group 6	+	+	+	+	+
Preference x Group 7	-	-	-	+	+	Preference x Group 7	-	-	-	-	+
				*	**			*	*		*

*** p<0.01, ** p<0.05, * p<0.1

Notes: see Appendix B.

Table 12

Uruguay: Effect of tariff preferences on imports from MERCOSUR relative to imports from ROW

All Sectors						Manufactures					
	Column 1	Column 2	Column 3	Column 4	Column 5		Column 1	Column 2	Column 3	Column 4	Column 5
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference	+	+	+	+	+	Preference	+	+	+	+	+
			***	***	***		*	*	***	**	**
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference	+	+	+	+	+	Preference	+	+	+	+	+
	***	***	***	***	***		***	*	***	***	***
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0	+	+	+	+	+	Preference x Group 0	+	+	+	+	+
			****	***	***		*	*	***	***	
Preference x Group 5	+	+	+	+	+	Preference x Group 5	+	+	+	+	+
	***	**	***	***			***	***	***	***	
Preference x Group 6	+	+	+	+	+	Preference x Group 6	+	+	+	+	+
	***	***	***	***			***	***	***	***	
Preference x Group 7	-	-	+	+	+	Preference x Group 7	-	-	+	+	+
	*		**	***	***				**	**	**
Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	Variable	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Preference x Group 0	+	+	+	+	+	Preference x Group 0	+	+	+	+	+
	***	***	***	***			***	**	***	***	
Preference x Group 5	+	+	+	+	-	Preference x Group 5	+	+	+	+	-
	***	***	***	*			***	***	**	***	
Preference x Group 6	+	+	+	+	+	Preference x Group 6	+	+	+	+	+
	***	***	***	***	*		***	***	***	***	
Preference x Group 7	+	+	+	+	+	Preference x Group 7	+	+	+	+	+
	*		**	***	***				**	***	***

*** p<0.01, ** p<0.05, * p<0.1

Notes: see Appendix B.

5. Summary and Conclusions

In July 1991, Argentina, Brazil, Paraguay and Uruguay signed the Asuncion Treaty giving birth to the MERCOSUR. Under the MERCOSUR, its four country members followed an automatic, and relatively quick, reduction of tariffs and non-tariff barriers within the zone, since 1995 the four countries also adopted a common external tariff policy on imports from third countries. In both cases, intra- and extra-zone trade barriers, countries have still some degree of freedom to implement their own policies, however this is quite limited. The homogenization of tariff barriers has gone much further than that of non-tariff barriers.

As MERCOSUR deepened further, intra-zone trade increased its share in total trade²⁵; this behaviour acquires more relevance if we take into account that during the same period both total exports and imports increased substantially. In most cases, increasing intra-zone trade meant an increasing participation of goods where MERCOSUR members did not have a RCA at the beginning of the integration process. In the case of exports to the ROW, the share of these kinds of good increased at a faster rate than intra-MERCOSUR exports. The opposite happened in the case of imports. When looking at the importance of these sectors across the four countries, there is not much difference in the case of imports from the ROW, while in the case of intra-MERCOSUR imports the importance of these sectors is larger in the cases Argentina and Brazil. However, once we control for the share of intra-MERCOSUR imports in total imports, the order is reversed. In the case of exports MERCOSUR countries did not have a RCA in 1993, these represent a larger proportion in the cases of Argentina (intra-zone exports) and Brazil (extra-zone exports) than in the other two countries. After controlling for the share of intra-MERCOSUR exports in the total exports, the relevance of these sectors in the case of Brazil's exports to other MERCOSUR members becomes less important than they are for the other three countries.

²⁵ There has been in most cases a reversion of this tendency since the late nineties.

In order to measure to what extent the reduction of intra-zone barriers under the MERCOSUR affected the import patterns of its members, in section 3 we derived an equation based on Krugman (1980) monopolistic competitive model for international trade to explain, for a given country z , the ratio of imports of good i from any two countries j and h . The results from the empirical model in section 4 show that tariff preferences granted under the MERCOSUR have had a significant effect on the import patterns of Argentina and Uruguay, and to a less extent in the cases of Brazil and Paraguay. In the cases of Argentina and Uruguay the results appears to sustain the hypothesis that the MERCOSUR may have induced a trade diversion effect, while no such effect arises in the cases of Brazil and Paraguay.

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Appendix A

Table A.1
Trade Flow Evolution in MERCOSUR by destine and origin 1991-2004
(Millions of USD)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ARGENTINA exports														
MERCOSUR	1977	2290	3674	4804	6769	7921	9068	9421	7071	8391	7429	5723	5645	6770
Rest of ALADI	1490	1622	1667	2201	2911	3298	3451	3634	3190	4019	4567	4894	5516	6660
ROW	8509	8117	7750	8833	11281	12590	12744	13139	12807	13660	14293	15032	18777	21120
World	11976	12029	13092	15838	20961	23809	25263	26194	23068	26070	26289	25650	29938	34550
Regional orientation	0,17	0,19	0,28	0,30	0,32	0,33	0,36	0,36	0,31	0,32	0,28	0,22	0,19	0,20
ARGENTINA imports														
MERCOSUR		3752	4202	4784	4744	5800	7580	7931	6296	7162	5861	2896	5158	8170
Rest of ALADI		1227	1210	1209	1373	1551	1743	1742	1443	1459	1180	413	638	1471
ROW		9882	11302	15593	13949	16408	20897	21655	17705	16504	13229	5681	8038	12615
World		14861	16714	21586	20066	23760	30219	31328	25443	25125	20269	8990	13833	22256
Regional orientation		0,25	0,25	0,22	0,24	0,24	0,25	0,25	0,25	0,29	0,29	0,32	0,37	0,37
BRASIL exports														
MERCOSUR	2307	4127	5381	5909	6134	7299	9037	8872	6771	7723	6354	3311	5672	8912
Rest of ALADI	2694	3516	3765	3838	3833	3655	4592	4491	3774	5158	5849	6555	7248	10787
ROW	26281	28264	29342	33366	35916	36141	38549	37127	36642	41124	44833	50495	60162	76776
World	31282	35906	38487	43113	45883	47095	52178	50490	47187	54005	57035	60360	73082	96476
Regional orientation	0,07	0,11	0,14	0,14	0,13	0,15	0,17	0,18	0,14	0,14	0,11	0,05	0,08	0,09
BRASIL imports														
MERCOSUR	2268	2207	3572	4822	6792	8211	9631	9428	6719	7796	7009	5909	5988	6752
Rest of ALADI	1427	1515	1504	1940	3125	3321	3715	2942	2731	3863	2996	2827	2763	3969
ROW	17346	16780	22224	28770	39543	41375	48012	45344	39759	44118	45568	40999	42073	55733
World	21041	20503	27300	35532	49461	52907	61358	57714	49209	55777	55573	49735	50824	66454
Regional orientation	0,11	0,11	0,13	0,14	0,14	0,16	0,16	0,16	0,14	0,14	0,13	0,12	0,12	0,10
PARAGUAY exports														
MERCOSUR	259	242	287	340	465	660	586	531	307	553	519	553	734	865
Rest of ALADI	67	62	56	83	58	64	60	67	43	94	122	100	65	94
ROW	410	342	382	393	296	320	496	416	390	223	346	298	442	666
World	737	646	725	816	820	1043	1143	1014	741	871	986	951	1241	1626
Regional orientation	0,35	0,37	0,40	0,42	0,57	0,63	0,51	0,52	0,42	0,64	0,53	0,58	0,59	0,53
PARAGUAY imports														
MERCOSUR	397	475	571	835	1170	1548	1665	1383	890	1102	1111	917	1156	1585
Rest of ALADI	49	60	64	102	104	98	97	45	26	58	70	45	54	79
ROW	829	702	842	1140	1523	1204	1337	1042	809	890	807	709	1017	1434
World	1275	1237	1477	2077	2796	2850	3099	2470	1724	2050	1988	1671	2228	3097
Regional orientation	0,31	0,38	0,39	0,40	0,42	0,54	0,54	0,56	0,52	0,54	0,56	0,55	0,52	0,51
URUGUAY exports														
MERCOSUR			673	887	993	1149	1355	1523	1007	1023	840	607	674	764
Rest of ALADI			156	129	125	135	158	197	161	193	186	166	196	261
ROW			813	881	993	1112	1190	1030	1069	1080	1031	1089	1337	1893
World			1642	1896	2111	2396	2704	2750	2237	2295	2058	1861	2206	2918
Regional orientation			0,41	0,47	0,47	0,48	0,50	0,55	0,45	0,45	0,41	0,33	0,31	0,26
URUGUAY imports														
MERCOSUR			1047	1363	1321	1461	1616	1649	1461	1518	1350	944	1042	1384
Rest of ALADI			96	110	154	205	232	197	239	269	299	121	78	104
ROW			1190	1234	1392	1655	1866	1961	1655	1678	1411	899	1071	1630
World			2333	2707	2867	3322	3714	3807	3356	3465	3060	1964	2190	3119
Regional orientation			0,45	0,50	0,46	0,44	0,44	0,43	0,44	0,44	0,44	0,48	0,48	0,44

Source: own based on LAIA database.

Table A.2
Typology of goods (HS 4 digit) by group of MERCOSUR countries with RCA, structure of trade with ROW 1993-2004
 (Thousands of USD)

Group	Argentina		Brazil		Paraguay		Uruguay	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
a) Products with RCA in only country								
A (Argentina)	32,109,108	8,586,268	25,233,032	73,319,174	76,560	846,626	171,974	2,512,500
B (Brazil)	6,793,287	35,766,318	136,525,593	51,661,327	36,343	2,817,712	188,129	3,364,152
P (Paraguay)	175,392	554,751	436,959	1,583,574	100,238	18,736	16,595	59,722
U (Uruguay)	1,993,564	9,860,706	9,759,646	22,102,554	1,615	232,963	227,884	729,386
b) Products with RCA in two countries								
AB	10,365,916	3,237,644	40,484,842	11,781,882	3,909	183,542	16,655	282,198
AP	1,911,027	129,478	2,864,092	3,524,489	262,982	2,862	454,923	33,725
AU	10,092,299	800,004	1,262,166	5,569,124	1,873	17,381	1,697,872	140,648
BP	1,323,675	1,382,104	62,281,980	2,596,692	458,027	41,311	101,142	115,243
BU	973,244	3,485,890	38,656,918	5,692,557	58,137	674,587	574,194	452,416
PU	148,334	8,829	18,875	133,164	5,537	96	19,010	191
c) Products with RCA in three countries								
ABP	59,583,375	537,525	97,589,360	1,343,986	2,835,152	75,402	162,212	131,659
ABU	11,141,054	795,235	28,039,488	1,513,427	16,348	44,321	3,612,996	160,036
APU	2,573,001	832,376	518,670	2,079,307	1,623	38,490	564,526	64,774
BPU	105,248	749,118	710,811	986,527	20,795	95,521	15,452	105,321
d) RCA in all countries								
ABPU	15,386,417	333,810	20,304,123	1,152,063	730,691	25,139	5,440,658	41,500
e) RCA in no countries								
NONE	6,262,227	105,444,223	51,698,545	307,066,668	34,627	7,622,461	245,977	9,379,851
TOTAL	160,937,168	172,504,281	516,385,100	492,106,515	4,644,457	12,737,150	13,510,199	17,573,321

Source: own based on LAIA.

Table A.3
Typology of goods (HS 4 digit) by group of MERCOSUR countries with RCA
Structure of intra-MERCOSUR trade 1993-2004
(Thousands of USD)

Group	Argentina		Brazil		Paraguay		Uruguay	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
a) Products with RCA in only country								
A (Argentina)	29,694,248	1,962,146	2,719,452	25,823,277	420,219	2,980,579	326,274	2,199,981
B (Brazil)	12,891,944	25,147,497	30,542,172	10,914,516	169,373	3,760,298	933,446	4,559,118
P (Paraguay)	162,371	112,184	163,173	206,048	102,989	71,561	20,794	98,626
U (Uruguay)	4,141,496	5,522,748	5,385,605	4,838,975	5,762	195,940	1,617,092	501,920
b) Products with RCA in two countries								
AB	2,842,817	2,208,856	2,825,459	1,827,943	10,164	492,744	51,283	913,225
AP	968,426	317,988	214,376	2,112,092	976,011	33,551	109,351	95,926
AU	4,330,351	455,256	340,118	7,702,753	21,946	260,936	1,866,711	212,331
BP	521,865	3,136,651	3,044,026	670,806	486,390	132,593	11,905	390,307
BU	1,732,558	3,639,250	5,837,996	1,555,971	105,643	2,010,997	1,286,454	607,579
PU	120,156	2,248	505	144,793	12,390	1,612	14,730	2,609
c) Products with RCA in three countries								
ABP	1,832,229	1,148,479	1,524,262	3,576,046	3,335,110	288,826	39,381	1,029,468
ABU	796,743	1,156,775	1,658,510	660,710	63,036	342,999	423,117	543,057
APU	2,356,862	184,231	85,539	4,166,518	140,101	134,230	1,917,100	36,994
BPU	131,478	330,483	433,473	178,269	31,081	80,810	229,082	139,418
d) RCA in all countries								
ABPU	2,017,192	436,022	288,627	2,630,597	442,723	33,877	724,497	472,155
e) RCA in no countries								
NONE	18,056,338	24,547,354	26,006,940	15,566,852	72,855	3,078,281	1,917,165	4,294,698
INTRA-MERCOSUR	82,597,074	70,308,168	81,070,233	82,576,166	6,395,793	13,899,833	11,488,382	16,097,411
INTRA-MERCOSUR (% of TOTAL)	28.5%	27.2%	12.3%	13.5%	53.5%	50.6%	42.5%	45.0%

Source: own based on LAIA.

Table A.4
Typology of goods (HS 4 digits) by group of MERCOSUR countries with RCA
Coverage ratio (M/X) in 1993-2004

Type	Argentina	Brazil	Paraguay	Uruguay	MERCOSUR
a) Products with RCA in only country					
Argentina (A)	0.15	3.74	7.75	10.46	1.21
Brazil (B)	2.68	0.34	27.45	6.95	0.66
Paraguay (P)	1.57	2.81	0.45	4.46	2.10
Uruguay (U)	2.27	1.59	53.36	0.62	1.71
b) Products with RCA in two countries					
AB	0.36	0.32	45.40	17.49	0.36
AP	0.14	1.80	0.03	0.25	0.76
AU	0.10	8.23	10.68	0.10	0.77
BP	2.43	0.05	0.19	4.33	0.13
BU	2.29	0.16	14.58	0.54	0.36
PU	0.19	23.98	0.14	0.22	1.59
c) Products with RCA in three countries					
ABP	0.03	0.05	0.06	5.84	0.05
ABU	0.16	0.07	4.60	0.18	0.11
APU	0.23	9.83	1.33	0.04	0.91
BPU	2.84	0.85	3.43	0.98	1.32
d) RCA in all countries					
ABPU	0.04	0.18	0.04	0.08	0.11
e) RCA in no countries					
NONE	4.42	3.43	73.35	6.12	3.79
Total general	0.89	0.92	2.30	1.32	0.94

Source: Table A.2.

Appendix B: results from equation 4.1

Table B.1: Argentina

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Imports(-1)	0.5576*** (0.0268)	0.5318*** (0.1012)	0.6142*** (0.0217)	0.6973*** (0.0644)	0.4952*** (0.0102)	0.6032*** (0.0259)	0.5935*** (0.0967)	0.6302*** (0.0228)	0.7054*** (0.0633)	0.5067*** (0.0114)
Imports(-2)	0.1078*** (0.0270)	0.1599*** (0.0606)	0.1731*** (0.0225)	0.1070** (0.0475)		0.1646*** (0.0276)	0.1952*** (0.0627)	0.2184*** (0.0237)	0.1473*** (0.0489)	
RER	-0.9423* (0.5118)	-0.9824** (0.4722)	-0.7927 (0.4860)	-0.4381 (0.5154)	-0.3946 (0.3365)	-0.8003 (0.4899)	-0.7471 (0.4613)	-0.6012 (0.5215)	0.0407 (0.5813)	-1.0026 (0.4370)
Preference	1.7956*** (0.4351)	1.8378*** (0.4328)	3.3658*** (0.5627)	3.7196*** (0.6291)	2.0648*** (0.5247)	1.8477*** (0.3824)	1.8966*** (0.4326)	2.7003*** (0.5077)	2.7303*** (0.6224)	2.4458*** (0.5487)
Observations	9539	9539	9539	9539	9539	8000	8000	8000	8000	8000
Number cross-sections	1032	1032	1032	1032	1032	839	839	839	839	839
Sargan Test (+)	136.70	116.60	323.60	285.10		131.00	106.60	319.40	285.80	
Sargan Test (P-value)	0.000	0.001	0.000	0.000		0.001	0.005	0.000	0.000	
AR(1) Test (++)	-11.25	-4.61	-10.59	-7.09		-10.01	-4.78	-9.41	-6.78	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	1.13	-0.17	-0.19	1.07		0.16	-0.28	-0.82	0.61	
AR(2) Test - P-value	0.257	0.868	0.854	0.287		0.876	0.778	0.415	0.544	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.6915*** (0.0427)	0.6269*** (0.0925)	0.6741*** (0.0477)	0.6859*** (0.0791)	0.6064*** (0.0187)	0.6698*** (0.0468)	0.5875*** (0.0888)	0.6550*** (0.0494)	0.6460*** (0.0805)	0.6129*** (0.0187)
Imports(-2)	0.2253*** (0.0403)	0.2724*** (0.0771)	0.2708*** (0.0410)	0.2524*** (0.0678)		0.2394*** (0.0435)	0.3118*** (0.0787)	0.2773*** (0.0442)	0.2840*** (0.0691)	
RER	-0.6470 (0.6101)	-0.3624 (0.7022)	0.3902 (0.8565)	-0.4619 (1.1297)	-0.3651 (0.8258)	-0.3511 (0.6527)	-0.4084 (0.7224)	0.6246 (0.9877)	-0.7558 (1.2647)	-0.8306 (0.7761)
Preference	1.4072*** (0.3651)	1.6499*** (0.4446)	2.0744*** (0.4637)	1.8532*** (0.5198)	2.4034*** (0.6894)	1.4531*** (0.3806)	1.5736*** (0.4153)	2.3305*** (0.5043)	2.0527*** (0.5576)	2.4236*** (0.5562)
Observations	2972	2972	2972	2972	2972	2757	2757	2757	2757	2757
Number cross-sections	272	272	272	272	272	252	252	252	252	252
Sargan Test (+)	0.076	0.067	0.194	0.125		0.036	0.177	0.315	0.225	
Sargan Test (P-value)	-4.24	-3.21	-3.92	-3.43		-3.97	-3.06	-3.74	-3.25	
AR(1) Test (++)	0.000	0.001	0.000	0.001		0.000	0.002	0.000	0.001	
AR(1) Test - P-value	-0.74	-1.05	-1.23	-0.85		-0.68	-1.25	-1.08	-1.00	
AR(2) Test (+++)	0.459	0.294	0.219	0.398		0.494	0.211	0.280	0.317	
AR(2) Test - P-value										

Standard errors in parentheses (robust standar errors in the case of BB estimators)
 *** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.1: Argentina (continued)

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Imports(-1)	0.5600*** (0.0267)	0.5143*** (0.0996)	0.5700*** (0.0215)	0.6018*** (0.0547)	0.4950*** (0.0101)	0.6010*** (0.0257)	0.5744*** (0.0957)	0.5848*** (0.0215)	0.6030*** (0.0553)	0.5067*** (0.0114)
Imports(-2)	0.1132*** (0.0263)	0.1783*** (0.0603)	0.1893*** (0.0207)	0.1675*** (0.0417)		0.1647*** (0.0269)	0.2086*** (0.0620)	0.2324*** (0.0218)	0.2133*** (0.0430)	
RER	-0.6645 (0.4894)	-0.7009 (0.4714)	-0.2897 (0.4944)	-0.5453 (0.5830)	-0.3865 (0.3379)	-0.5426 (0.4725)	-0.4905 (0.4634)	-0.1424 (0.4666)	0.2535 (0.6924)	-0.9987 (0.4366)
Preference x Group 0	2.9080*** (0.6132)	3.0682*** (0.6860)	4.3621*** (0.7996)	3.5907*** (0.8000)	1.5189 (1.3385)	2.8695*** (0.5660)	2.9387*** (0.6830)	3.7208*** (0.7111)	4.0336*** (0.7682)	2.1527* (1.1890)
Preference x Group 5	1.6680*** (0.4911)	1.7678*** (0.4959)	3.1694*** (0.6007)	2.6628*** (0.6510)	0.8734 (1.3284)	1.6684*** (0.4245)	1.7527*** (0.4801)	2.6793*** (0.5037)	2.4588*** (0.6150)	1.3861 (1.2482)
Preference x Group 6	4.3487*** (0.5965)	4.2005*** (0.7389)	5.5627*** (0.6514)	5.1375*** (0.7381)	2.1059** (1.0314)	3.3780*** (0.5370)	3.2665*** (0.6814)	4.3739*** (0.5536)	4.3093*** (0.7338)	2.9571** (1.2809)
Preference x Group 7	0.1924 (0.4781)	0.3652 (0.4289)	2.1400*** (0.5662)	2.1246*** (0.6106)	2.3902*** (0.7007)	0.6753* (0.3871)	0.8800** (0.3844)	1.9343*** (0.4196)	2.1254*** (0.5458)	2.4715*** (0.7582)
Observations	9539	9539	9539	9539	9539	8000	8000	8000	8000	8000
Number cross-sections	1032	1032	1032	1032	1032	839	839	839	839	839
Sargan Test (+)	143.50	122.00	572.30	478.40		134.10	109.30	533.10	456.40	
Sargan Test (P-value)	0.000	0.000	0.000	0.001		0.000	0.003	0.004	0.006	
AR(1) Test (++)	-11.22	-4.53	-9.68	-6.85		-9.99	-4.71	-8.72	-6.44	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	1.02	-0.43	-0.80	-0.08		0.15	-0.48	-1.31	-0.59	
AR(2) Test - P-value	0.308	0.664	0.424	0.937		0.884	0.629	0.189	0.557	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Imports(-1)	0.6810*** (0.0447)	0.6022*** (0.0956)	0.6620*** (0.0487)	0.6688*** (0.0692)	0.6065*** (0.0187)	0.6626*** (0.0488)	0.5732*** (0.0919)	0.6501*** (0.0505)	0.6461*** (0.0696)	0.6120*** (0.0185)
Imports(-2)	0.2189*** (0.0398)	0.2765*** (0.0770)	0.2626*** (0.0405)	0.2479*** (0.0601)		0.2365*** (0.0422)	0.3142*** (0.0788)	0.2725*** (0.0433)	0.2772*** (0.0625)	
RER	-0.4882 (0.6700)	-0.1401 (0.7818)	0.7335 (0.8839)	0.2348 (1.0179)	-0.3509 (0.8189)	-0.2773 (0.7270)	-0.2641 (0.8041)	0.7819 (0.9669)	-0.4636 (1.1325)	-0.8128 (0.7753)
Preference x Group 0	1.8600*** (0.5132)	2.1002*** (0.6039)	2.5455*** (0.5971)	2.4836*** (0.5794)	2.0110 (1.7762)	1.5708*** (0.5340)	1.8564*** (0.5754)	2.7114*** (0.6890)	2.2334*** (0.6532)	1.8480 (1.9030)
Preference x Group 5	1.2921*** (0.4171)	1.5732*** (0.4874)	1.8717*** (0.4678)	1.6138*** (0.4935)	0.1034 (1.6236)	1.3449*** (0.4211)	1.4589*** (0.4550)	1.8630*** (0.5080)	1.5599*** (0.4813)	-0.3752 (1.6411)
Preference x Group 6	2.2664*** (0.6066)	2.7796*** (0.7446)	2.9539*** (0.7007)	2.8218*** (0.7079)	4.2052*** (1.1433)	2.2474*** (0.6102)	2.5485*** (0.6655)	3.1718*** (0.6758)	2.7753*** (0.6766)	4.4740*** (1.0937)
Preference x Group 7	1.0569*** (0.3817)	1.1634*** (0.4067)	1.7586*** (0.4403)	1.4161*** (0.5001)	2.1737*** (0.7894)	1.0778*** (0.4001)	1.1568*** (0.4076)	1.9829*** (0.4672)	1.6076*** (0.4938)	2.1971*** (0.7075)
Observations	2972	2972	2972	2972	2972	2757	2757	2757	2757	2757
Number cross-sections	272	272	272	272	272	252	252	252	252	252
Sargan Test (+)	104.40	91.19	260.50	266.60		109.00	83.64	240.90	238.80	
Sargan Test (P-value)	0.065	0.063	1.000	1.000		0.035	0.164	1.000	1.000	
AR(1) Test (++)	-4.22	-3.16	-3.91	-3.60		-3.95	-3.01	-3.73	-3.44	
AR(1) Test - P-value	0.000	0.002	0.000	0.000		0.000	0.003	0.000	0.001	
AR(2) Test (+++)	-0.71	-1.13	-1.19	-0.89		-0.68	-1.30	-1.05	-1.00	
AR(2) Test - P-value	0.478	0.258	0.236	0.372		0.494	0.195	0.292	0.317	

Standard errors in parentheses (robust standard errors in the case of BB estimators)
 *** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.2: Brazil

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Imports(-1)	0.5258*** (0.0304)	0.6025*** (0.0403)	0.7256*** (0.0253)	0.8186*** (0.0294)	0.5617*** (0.0104)	0.5455*** (0.0307)	0.6072*** (0.0424)	0.7100*** (0.0255)	0.7969*** (0.0291)	0.5684*** (0.0113)
Imports(-2)										
RER	2.0266*** (0.5725)	1.7912*** (0.5059)	0.8768 (0.6139)	-0.0064 (0.5722)	0.2148 (0.3823)	1.4826** (0.6402)	1.2842** (0.5687)	0.8999 (0.6497)	-0.0523 (0.6000)	-0.0336 (0.3919)
Preference	-2.1495*** (0.7616)	-1.7170*** (0.5955)	0.2638 (0.9950)	-0.0343 (0.9467)	0.3594 (0.5617)	-0.5611 (0.8397)	-0.3252 (0.6864)	0.9272 (1.0496)	0.7025 (0.9143)	-0.0473 (0.7072)
Observations	9953	9953	9953	9953	9953	8038	8038	8038	8038	8038
Number cross-sections	1034	1034	1034	1034	1034	824	824	824	824	824
Sargan Test (+)	183.40	130.90	402.10	293.50		163.10	128.40	360.30	269.60	
Sargan Test (P-value)	0.000	0.000	0.000	0.001		0.000	0.000	0.000	0.011	
AR(1) Test (++)	-12.46	-10.90	-13.27	-12.68		-11.04	-9.79	-11.49	-11.17	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	1.22	1.41	1.79	1.88		1.37	1.45	1.76	1.81	
AR(2) Test - P-value	0.223	0.160	0.073	0.060		0.172	0.147	0.079	0.070	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.6924*** (0.0457)	0.7334*** (0.0492)	0.8192*** (0.0331)	0.8623*** (0.0387)	0.6177*** (0.0219)	0.7010*** (0.0489)	0.7130*** (0.0519)	0.8064*** (0.0336)	0.8402*** (0.0413)	0.6212*** (0.0205)
Imports(-2)										
RER	0.0051 (0.8972)	-0.1388 (0.8030)	-0.8298 (0.6760)	-1.4220* (0.7705)	0.0247 (0.6649)	-0.1728 (0.8894)	-0.3311 (0.8365)	-0.5366 (0.7758)	-1.3554 (0.8520)	-0.1351 (0.8120)
Preference	0.2985 (0.9750)	0.4719 (0.8165)	1.9081* (1.0582)	2.4150** (0.9370)	1.2389* (0.6355)	0.8189 (0.9844)	0.6319 (0.9104)	1.8372* (0.9778)	2.4439** (0.9446)	1.0154 (0.8588)
Observations	2744	2744	2744	2744	2744	2447	2447	2447	2447	2447
Number cross-sections	215	215	215	215	215	192	192	192	192	192
Sargan Test (+)	0.190	0.297	0.990	0.707		0.207	0.360	1.000	0.986	
Sargan Test (P-value)	-4.47	-4.47	-4.56	-4.54		-4.14	-4.13	-4.24	-4.21	
AR(1) Test (++)	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(1) Test - P-value	1.42	1.42	1.45	1.45		1.64	1.65	1.66	1.65	
AR(2) Test (+++)	0.155	0.155	0.148	0.146		0.100	0.100	0.097	0.099	
AR(2) Test - P-value										

Standard errors in parentheses (robust standar errors in the case of BB estimators)

*** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.2: Brazil (continued)

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.5433*** (0.0295)	0.6106*** (0.0398)	0.6930*** (0.0225)	0.7907*** (0.0237)	0.5616*** (0.0104)	0.5619*** (0.0294)	0.6197*** (0.0417)	0.6815*** (0.0251)	0.7728*** (0.0277)	0.5665*** (0.0113)
Imports(-2)										
RER	1.3546** (0.5492)	1.1738** (0.4824)	1.0622** (0.5331)	0.0271 (0.4720)	0.2081 (0.3839)	1.0308* (0.6194)	0.8340 (0.5425)	1.0753* (0.5781)	0.2991 (0.5624)	-0.0551 (0.3915)
Preference x Group 0	-0.0488 (0.7213)	-0.2012 (0.5652)	0.3049 (0.9339)	-0.1998 (0.8829)	0.1453 (0.6215)	0.9493 (0.8258)	0.7649 (0.6725)	1.4866 (1.0152)	0.6560 (0.9900)	0.1428 (1.0092)
Preference x Group 5	3.5551*** (1.3651)	3.3478*** (1.1581)	2.9913** (1.3061)	1.7582 (1.2298)	1.4133 (1.8757)	4.0961*** (1.5081)	3.6250*** (1.2741)	3.5966** (1.7629)	2.1110 (1.6708)	-1.0170 (2.8962)
Preference x Group 6	12.4791*** (2.6204)	10.1740*** (2.2634)	8.1042*** (2.4156)	4.2786* (2.3334)	-0.9548 (3.4687)	5.2716** (2.0711)	4.0337** (1.6485)	4.3866 (7.1221)	-0.3552 (4.6779)	-13.9943*** (5.1582)
Preference x Group 7	-4.5566*** (0.8529)	-3.9019*** (0.7324)	-3.2887*** (1.0934)	-2.5595** (1.0310)	0.4939 (0.8811)	-2.8144*** (0.9086)	-2.4057*** (0.7762)	-1.9170 (1.2006)	-1.4819 (1.1306)	0.1103 (0.9150)
Observations	9953	9953	9953	9953	9953	8038	8038	8038	8038	8038
Number cross-sections	1034	1034	1034	1034	1034	824	824	824	824	824
Sargan Test (+)	194.00	138.00	561.60	450.80		170.40	132.40	471.30	389.80	
Sargan Test (P-value)	0.000	0.000	0.124	0.441		0.000	0.000	0.834	0.918	
AR(1) Test (++)	-12.70	-10.98	-13.04	-13.00		-11.21	-9.89	-11.28	-11.15	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	1.28	1.41	1.72	1.88		1.41	1.46	1.69	1.79	
AR(2) Test - P-value	0.201	0.159	0.086	0.060		0.159	0.144	0.092	0.074	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.6895*** (0.0481)	0.7218*** (0.0510)	0.8207*** (0.0291)	0.8641*** (0.0331)	0.6172*** (0.0220)		0.7050*** (0.0554)	0.7976*** (0.0317)	0.8302*** (0.0365)	0.6164*** (0.0204)
Imports(-2)										
RER	-0.4061 (0.8428)	-0.5216 (0.7906)	-0.5725 (0.6950)	-1.0798 (0.7603)	0.0233 (0.6651)	-0.5967 (0.8283)	-0.4221 (0.7368)	-0.9317 (0.8229)	-0.1312 (0.8112)	
Preference x Group 0	2.5737** (1.0698)	2.4028*** (0.8816)	2.3236** (0.9438)	2.6048*** (0.8221)	1.8452* (1.0330)		2.4523** (1.0085)	2.8087*** (0.9816)	3.1991*** (0.9084)	1.9085* (1.0632)
Preference x Group 5	4.1564*** (1.8963)	3.4855** (1.5605)	3.2034** (1.4272)	3.5637*** (1.3404)	1.5342 (3.0562)		2.3164 (1.7807)	3.0558 (1.8900)	3.6074* (1.9475)	-6.8098 (5.0770)
Preference x Group 6	12.2062** (4.7987)	10.3978** (4.2529)	8.5219** (3.5203)	6.2659** (3.1089)	-2.3819 (5.2940)		-8.7945 (15.6579)	0.3105 (3.3802)	1.6904 (2.7983)	-11.3993* (6.4632)
Preference x Group 7	-1.0390 (0.9353)	-0.8579 (0.8553)	0.1954 (0.8589)	0.9563 (0.6559)	1.0303 (0.8428)		-0.8594 (1.0575)	0.4501 (0.9534)	1.3547* (0.8065)	1.0293 (0.9921)
Observations	2744	2744	2744	2744	2744	2447	2447	2447	2447	2447
Number cross-sections	215	215	215	215	215	192	192	192	192	192
Sargan Test (+)	100.50	81.45	199.10	206.20		78.95	180.40	186.60		
Sargan Test (P-value)	0.190	0.314	1.000	1.000		0.386	1.000	1.000		
AR(1) Test (++)	-4.45	-4.44	-4.55	-4.56		-4.09	-4.23	-4.22		
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000		
AR(2) Test (+++)	1.40	1.39	1.44	1.45		1.60	1.64	1.64		
AR(2) Test - P-value	0.163	0.164	0.151	0.148		0.109	0.102	0.101		

Standard errors in parentheses (robust standard errors in the case of BB estimators)
 *** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.3: Paraguay

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Imports(-1)	0.4193*** (0.0286)	0.6763*** (0.0847)	0.4818*** (0.0240)	0.7095*** (0.0532)	0.3539*** (0.0109)	0.3960*** (0.0282)	0.6525*** (0.0899)	0.4819*** (0.0249)	0.7369*** (0.0508)	0.3382*** (0.0123)
Imports(-2)	0.1351*** (0.0222)	0.0325 (0.0368)	0.2232*** (0.0195)	0.0754** (0.0314)		0.1274*** (0.0232)	0.0274 (0.0381)	0.2323*** (0.0205)	0.0536* (0.0304)	
RER	0.4266 (0.4200)	0.2586 (0.3323)	0.1562 (0.4288)	-0.1125 (0.3887)	0.4345* (0.2377)	1.1927** (0.4745)	0.7202* (0.4130)	0.7410 (0.4843)	0.5585 (0.4642)	0.4423 (0.3029)
Preference	0.6799 (0.7577)	0.4977 (0.5472)	1.4891** (0.7512)	1.2319 (0.8135)	1.1464* (0.6358)	0.4642 (0.7805)	0.3258 (0.6026)	1.3392* (0.7731)	0.8600 (0.8833)	1.7064** (0.6736)
Observations	7243	7243	7243	7243	7243	6475	6475	6475	6475	6475
Number cross-sections	809	809	809	809	809	696	696	696	696	696
Sargan Test (+)	158.50	111.90	364.40	293.00		149.00	108.20	355.00	280.20	
Sargan Test (P-value)	0.000	0.027	0.000	0.002		0.001	0.045	0.000	0.010	
AR(1) Test (++)	-12.94	-7.62	-12.31	-9.63		-12.09	-7.13	-11.52	-9.79	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	-1.57	1.85	-3.46	1.43		-1.45	1.72	-3.48	1.83	
AR(2) Test - P-value	0.116	0.064	0.001	0.154		0.146	0.086	0.001	0.068	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.6111*** (0.0388)	0.5603*** (0.1406)	0.6617*** (0.0278)	0.6607*** (0.0836)	0.5555*** (0.0174)	0.6400*** (0.0363)	0.8014*** (0.1284)	0.6932*** (0.0267)	0.8122*** (0.0661)	0.5467*** (0.0237)
Imports(-2)	0.1594*** (0.0330)	0.1862** (0.0819)	0.2454*** (0.0279)	0.2388*** (0.0711)		0.1484*** (0.0301)	0.0254 (0.0801)	0.2228*** (0.0277)	0.1178** (0.0570)	
RER	-0.0295 (0.5159)	0.0235 (0.5907)	-0.2523 (0.4441)	-0.9082* (0.4920)	0.4785 (0.3290)	0.9851* (0.5029)	0.8159 (0.4989)	0.4170 (0.5037)	-0.0081 (0.5000)	0.7558*** (0.3612)
Preference	0.7597 (0.8376)	0.7750 (0.9556)	0.8672 (0.6258)	1.4283 (0.8719)	0.2584 (0.8141)	0.2443 (0.8533)	0.1786 (0.6878)	0.5392 (0.5766)	0.2724 (0.6637)	0.3873 (0.8222)
Observations	2270	2270	2270	2270	2270	2020	2020	2020	2020	2020
Number cross-sections	192	192	192	192	192	170	170	170	170	170
Sargan Test (+)	0.100	0.065	1.000	0.995		0.197	0.191	1.000	1.000	
Sargan Test (P-value)	-5.80	-3.22	-5.67	-4.21		-5.54	-3.97	-5.57	-4.86	
AR(1) Test (++)	0.000	0.001	0.000	0.000		0.000	0.000	0.000	0.000	
AR(1) Test - P-value	-0.57	-0.60	-1.23	-0.92		-0.60	0.44	-1.14	-0.16	
AR(2) Test (+++)	0.570	0.549	0.219	0.358		0.548	0.660	0.253	0.877	
AR(2) Test - P-value										

Standard errors in parentheses (robust standard errors in the case of BB estimators)

*** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.3: Paraguay (continued)

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC
	(1)	(2)	(1)	(2)		(1)	(2)	(1)	(2)	
Imports(-1)	0.4019***	0.6698***	0.4776***	0.6707***	0.3511***	0.3840***	0.6400***	0.4679***	0.6690***	0.3346***
	(0.0293)	(0.0832)	(0.0216)	(0.0416)	(0.0109)	(0.0287)	(0.0880)	(0.0222)	(0.0394)	(0.0124)
Imports(-2)	0.1267***	0.0240	0.2292***	0.1119***		0.1223***	0.0254	0.2326***	0.1060***	
	(0.0223)	(0.0355)	(0.0184)	(0.0281)		(0.0228)	(0.0372)	(0.0190)	(0.0261)	
RER	0.3402	0.1565	-0.2307	-0.4302	0.4254*	0.9352**	0.5007	0.3027	-0.0015	0.4303
	(0.4147)	(0.3269)	(0.4407)	(0.4069)	(0.2376)	(0.4657)	(0.4026)	(0.4773)	(0.4835)	(0.3026)
Preference x Group 0	1.8925	0.8979	1.9375	2.2050*	1.0637	0.2096	-0.3483	0.9993	0.4977	2.4361
	(1.4761)	(1.0229)	(1.2020)	(1.1322)	(1.8007)	(1.5108)	(1.1467)	(1.2416)	(1.1101)	(2.0824)
Preference x Group 5	3.5808***	2.7920**	2.6224	0.9329	4.9764**	2.8374	2.6945*	-0.2053	1.4160	6.1719**
	(1.6047)	(1.1712)	(2.3965)	(2.1295)	(2.1800)	(1.8063)	(1.4558)	(3.0621)	(3.2257)	(2.9440)
Preference x Group 6	4.2882***	2.8553***	3.7999***	3.2091***	2.7806**	4.2772***	2.9038***	3.8115***	3.1121***	3.4545***
	(0.9607)	(0.7907)	(0.8145)	(0.8402)	(1.2738)	(1.0029)	(0.9029)	(0.8200)	(0.8651)	(0.9961)
Preference x Group 7	-1.5349*	-0.9281	-1.1308	0.0661	0.1420	-1.5533*	-0.9825	-0.2949	-0.2965	0.6795
	(0.8144)	(0.6121)	(0.7448)	(0.7911)	(0.6760)	(0.8393)	(0.6444)	(0.7284)	(0.7706)	(0.7178)
Observations	7243	7243	7243	7243	7243	6475	6475	6475	6475	6475
Number cross-sections	809	809	809	809	809	696	696	696	696	696
Sargan Test (+)	156.90	109.90	504.10	428.90		147.60	107.00	458.20	390.40	
Sargan Test (P-value)	0.000	0.036	0.766	0.815		0.001	0.054	0.987	0.988	
AR(1) Test (++)	-12.79	-7.75	-12.00	-10.06		-12.06	-7.19	-11.33	-10.07	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	-1.48	2.00	-3.59	0.64		-1.46	1.73	-3.60	0.73	
AR(2) Test - P-value	0.138	0.046	0.000	0.520		0.146	0.084	0.000	0.464	
	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC
	(1)	(2)	(1)	(2)		(1)	(2)	(1)	(2)	
	(3)	(3)	(3)	(3)		(3)	(3)	(3)	(3)	
Imports(-1)	0.5945***	0.5119***	0.6528***	0.6639***	0.5491***	0.6218***	0.7272***	0.6876***	0.7801***	0.5407***
	(0.0386)	(0.1328)	(0.0294)	(0.0723)	(0.0168)	(0.0366)	(0.1218)	(0.0265)	(0.0522)	(0.0242)
Imports(-2)	0.1440***	0.1721**	0.2388***	0.2241***		0.1337***	0.0320	0.2183***	0.1307***	
	(0.0333)	(0.0766)	(0.0275)	(0.0633)		(0.0287)	(0.0722)	(0.0275)	(0.0466)	
RER	-0.1499	-0.0560	-0.2492	-0.7484*	0.4813	0.9073*	0.8904*	0.3924	0.1336	0.8016**
	(0.5141)	(0.6270)	(0.4314)	(0.4441)	(0.3321)	(0.4928)	(0.5283)	(0.4829)	(0.4350)	(0.3635)
Preference x Group 0	-0.0017	1.0288	0.5617	0.8999	-10.8511***	-7.6833***	-6.9517***	-2.6277	-3.4117	-4.5891
	(4.0679)	(5.9694)	(1.8898)	(1.9246)	(3.7263)	(1.3566)	(1.7759)	(4.2201)	(3.0383)	(5.1082)
Preference x Group 5	2.7510**	3.0485*	2.4115**	1.9182*	5.4715**	1.9541*	1.3769	1.8104	1.0861	6.1774*
	(1.1366)	(1.5591)	(1.0932)	(1.1325)	(2.2683)	(1.1811)	(1.2591)	(1.3909)	(1.1989)	(3.2503)
Preference x Group 6	2.9729***	3.3910**	2.1263**	2.8676**	-0.5382	2.5589**	2.3256**	1.4871*	1.4324	0.1878
	(1.0327)	(1.3317)	(0.9147)	(0.9746)	(1.2332)	(1.2118)	(1.1583)	(0.8728)	(0.8969)	(1.1362)
Preference x Group 7	-1.0731	-1.1503	-0.0627	0.3776	0.3376	-1.1781	-1.2783	-0.6184	-0.6757	0.2752
	(1.0282)	(1.2900)	(0.8821)	(0.8146)	(1.0748)	(0.9024)	(0.9311)	(0.8761)	(0.7545)	(1.0554)
Observations	2270	2270	2270	2270	2270	2020	2020	2020	2020	2020
Number cross-sections	192	192	192	192	192	170	170	170	170	170
Sargan Test (+)	111.70	103.20	174.70	175.90		105.40	93.75	161.50	159.80	
Sargan Test (P-value)	0.162	0.087	1.000	1.000		0.286	0.242	1.000	1.000	
AR(1) Test (++)	-5.84	-3.28	-5.63	-4.51		-5.57	-4.00	-5.61	-5.20	
AR(1) Test - P-value	0.000	0.001	0.000	0.000		0.000	0.000	0.000	0.000	
AR(2) Test (+++)	-0.47	-0.62	-1.20	-0.86		-0.54	0.37	-1.12	-0.28	
AR(2) Test - P-value	0.637	0.535	0.232	0.390		0.593	0.712	0.261	0.777	

Standard errors in parentheses (robust standard errors in the case of BB estimators)

*** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.4: Uruguay

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC
Imports(-1)	0.4904*** (0.0270)	0.6371*** (0.1874)	0.5530*** (0.0234)	0.8303*** (0.0943)	0.4260*** (0.0101)	0.4680*** (0.0316)	0.3024** (0.1529)	0.5597*** (0.0260)	0.8112*** (0.0816)	0.3986*** (0.0113)
Imports(-2)	0.0819*** (0.0198)	0.0001 (0.0869)	0.1259*** (0.0208)	-0.0303 (0.0581)		0.1100*** (0.0203)	0.1546** (0.0642)	0.1624*** (0.0218)	0.0120 (0.0497)	
RER	0.4102* (0.2327)	0.4272* (0.2428)	0.2489 (0.2294)	-0.1772 (0.2374)	0.2222 (0.1691)	0.6335** (0.2593)	0.7964** (0.3148)	0.4325 (0.2701)	-0.1207 (0.2623)	0.4416** (0.1848)
Preference	0.5378 (0.4857)	0.4414 (0.4344)	2.7734*** (0.5732)	2.0614*** (0.6020)	1.7550*** (0.5032)	0.8670* (0.4986)	1.1364* (0.6342)	2.0031*** (0.5785)	1.3818** (0.6144)	1.0780** (0.4727)
Observations	8175	8175	8175	8175	8175	6941	6941	6941	6941	6941
Number cross-sections	959	959	959	959	959	792	792	792	792	792
Sargan Test (+)	74.66	74.07	245.20	226.20		73.32	68.87	261.60	228.00	
Sargan Test (P-value)	0.360	0.105	0.039	0.007		0.402	0.202	0.007	0.006	
AR(1) Test (++)	-13.10	-3.51	-12.77	-7.00		-11.60	-2.77	-11.51	-7.57	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.006	0.000	0.000	
AR(2) Test (+++)	0.69	1.10	-0.08	2.53		1.42	-0.46	0.68	3.13	
AR(2) Test - P-value	0.488	0.273	0.939	0.011		0.157	0.643	0.499	0.002	
	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)	BB (a) (1)	BB (a) (2)	BB (b) (1)	BB (b) (2)	LSDVC (3)
Imports(-1)	0.6752*** (0.0355)	0.5805*** (0.1714)	0.7113*** (0.0328)	0.7838*** (0.1166)	0.5697*** (0.0245)	0.6530*** (0.0436)	0.7524*** (0.2872)	0.7298*** (0.0361)	0.8461*** (0.1368)	0.5839*** (0.0248)
Imports(-2)	0.0758** (0.0318)	0.1122 (0.1388)	0.1625*** (0.0307)	0.0956 (0.1070)		0.0784** (0.0321)	-0.0033 (0.2144)	0.1675*** (0.0318)	0.0378 (0.1295)	
RER	-0.5310* (0.3190)	-0.5623* (0.3367)	-0.2132 (0.3019)	-0.2928 (0.3331)	-0.1824 (0.2430)	-0.3422 (0.3516)	-0.3639 (0.3659)	0.0185 (0.3311)	-0.0508 (0.3739)	-0.0742 (0.2336)
Preference	1.9265*** (0.6175)	2.0525*** (0.7064)	1.4571*** (0.4673)	1.4122*** (0.4428)	1.6443*** (0.5200)	1.9600*** (0.7255)	1.7894* (0.9428)	1.2787*** (0.4189)	1.6338*** (0.4553)	1.7322*** (0.6243)
Observations	2319	2319	2319	2319	2319	2054	2054	2054	2054	2054
Number cross-sections	233	233	233	233	233	206	206	206	206	206
Sargan Test (+)	0.144	0.129	0.445	0.228		0.232	0.071	0.772	0.535	
Sargan Test (P-value)	-5.65	-2.35	-5.24	-3.43		-5.16	-1.87	-4.96	-3.18	
AR(1) Test (++)	0.000	0.019	0.000	0.001		0.000	0.062	0.000	0.001	
AR(1) Test - P-value	0.33	-0.17	-0.79	0.15		0.70	0.51	-0.45	0.69	
AR(2) Test (+++)	0.738	0.866	0.432	0.885		0.483	0.608	0.653	0.489	
AR(2) Test - P-value										

Standard errors in parentheses (robust standard errors in the case of BB estimators)

*** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond for test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.

Table B.4: Uruguay (continued)

	All Sectors					Manufactures				
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC
	(1)	(2)	(1)	(2)		(1)	(2)	(1)	(2)	
Imports(-1)	0.5034*** (0.0252)	0.6390*** (0.1648)	0.5872*** (0.0213)	0.7706*** (0.0584)	0.4257*** (0.0102)	0.4821*** (0.0295)	0.3661*** (0.1376)	0.5699*** (0.0235)	0.7290*** (0.0543)	0.3984*** (0.0113)
Imports(-2)	0.0908*** (0.0191)	0.0125 (0.0819)	0.1591*** (0.0188)	0.0176 (0.0420)		0.1184*** (0.0192)	0.1489** (0.0627)	0.1894*** (0.0192)	0.0697* (0.0374)	
RER	0.2273 (0.2251)	0.2672 (0.2189)	0.0156 (0.2254)	-0.2613 (0.2262)	0.2138 (0.1681)	0.4951*** (0.2498)	0.6385** (0.2944)	0.2373 (0.2601)	-0.0575 (0.2522)	0.4345** (0.1851)
Preference x Group 0	0.7235 (0.5946)	0.6232 (0.5540)	2.3287*** (0.6755)	2.3486*** (0.5855)	2.5745*** (0.9734)	1.1228* (0.6294)	1.4872* (0.7992)	2.0357*** (0.6393)	1.5752*** (0.5860)	1.3008 (0.9552)
Preference x Group 5	2.6877*** (0.9239)	2.3578** (0.9935)	3.6144*** (0.9636)	3.1144*** (0.7431)	0.2821 (2.4081)	2.9213*** (0.9557)	3.6574*** (1.2666)	3.4052*** (0.9395)	3.0988*** (1.0134)	0.0728 (2.0639)
Preference x Group 6	4.0856*** (0.6509)	3.5087*** (1.0036)	4.0168*** (0.7974)	4.0677*** (0.7247)	0.6656 (0.8751)	3.8878*** (0.6812)	4.7818*** (1.0078)	3.6661*** (0.7559)	3.3269*** (0.7584)	0.0550 (1.1198)
Preference x Group 7	-0.8799* (0.5042)	-0.7420 (0.5008)	1.1414** (0.5662)	1.2549*** (0.4508)	1.8437*** (0.5888)	-0.5231 (0.5238)	-0.5702 (0.6477)	1.1768** (0.5410)	1.0272** (0.4964)	1.3534** (0.5815)
Observations	8175	8175	8175	8175	8175	6941	6941	6941	6941	6941
Number cross-sections	959	959	959	959	959	792	792	792	792	792
Sargan Test (+)	71.16	71.69	449.90	378.80		72.62	69.04	442.30	385.40	
Sargan Test (P-value)	0.472	0.144	0.559	0.724		0.424	0.198	0.656	0.639	
AR(1) Test (++)	-13.27	-3.89	-12.44	-8.74		-11.77	-3.29	-10.96	-8.42	
AR(1) Test - P-value	0.000	0.000	0.000	0.000		0.000	0.001	0.000	0.000	
AR(2) Test (+++)	0.57	1.11	-0.64	2.30		1.34	-0.21	0.10	2.52	
AR(2) Test - P-value	0.570	0.266	0.526	0.022		0.180	0.833	0.920	0.012	
	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC	BB (a)	BB (a)	BB (b)	BB (b)	LSDVC
	(1)	(2)	(1)	(2)		(1)	(2)	(1)	(2)	
	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Imports(-1)	0.6784*** (0.0318)	0.5561*** (0.1611)	0.7172*** (0.0299)	0.7796*** (0.0732)	0.5700*** (0.0245)	0.6591*** (0.0378)	0.6854*** (0.2545)	0.7250*** (0.0327)	0.8128*** (0.0860)	0.5848*** (0.0245)
Imports(-2)	0.0763** (0.0312)	0.1510 (0.1312)	0.1651*** (0.0324)	0.1021 (0.0728)		0.0822** (0.0324)	0.0641 (0.1957)	0.1622*** (0.0339)	0.0713 (0.0845)	
RER	-0.6179* (0.3162)	-0.6246* (0.3347)	-0.3862 (0.2879)	-0.3954 (0.3534)	-0.1844 (0.2432)	-0.4114 (0.3448)	-0.3832 (0.3207)	-0.0883 (0.3214)	-0.1243 (0.3760)	-0.0772 (0.2370)
Preference x Group 0	2.8665*** (0.9339)	3.1006*** (1.0230)	1.7914*** (0.6379)	1.9277*** (0.5944)	1.6318 (1.1357)	2.9935*** (1.0991)	2.7187** (1.0722)	1.9866*** (0.7568)	2.1930*** (0.6685)	1.5622 (1.3274)
Preference x Group 5	4.7750*** (0.9996)	5.7230*** (1.3110)	2.8440*** (1.0842)	2.2840* (1.1926)	-0.3785 (2.8986)	5.3900*** (1.2953)	5.3430*** (1.7391)	2.4547** (1.0253)	2.9653*** (1.0843)	-0.5837 (2.9833)
Preference x Group 6	3.7460*** (0.8642)	4.1708*** (0.9705)	2.3407*** (0.6092)	2.4579*** (0.5437)	1.3564* (0.7592)	3.5692*** (0.9487)	3.3133*** (1.1624)	2.2553*** (0.6801)	2.6071*** (0.7329)	1.5200 (0.9497)
Preference x Group 7	1.0214* (0.5679)	1.0393 (0.6473)	0.9674** (0.4289)	1.0531*** (0.3931)	1.7846*** (0.6032)	1.1129 (0.6987)	0.9596 (0.7095)	1.0599** (0.4527)	1.2623*** (0.4785)	1.8662*** (0.6715)
Observations	2319	2319	2319	2319	2319	2054	2054	2054	2054	2054
Number cross-sections	233	233	233	233	233	206	206	206	206	206
Sargan Test (+)	83.14	71.95	219.10	218.70		77.69	72.12	190.20	190.30	
Sargan Test (P-value)	0.154	0.139	1.000	1.000		0.274	0.136	1.000	1.000	
AR(1) Test (++)	-5.67	-2.33	-5.28	-4.30		-5.22	-1.85	-5.02	-4.01	
AR(1) Test - P-value	0.000	0.020	0.000	0.000		0.000	0.065	0.000	0.000	
AR(2) Test (+++)	0.34	-0.43	-0.81	0.12		0.66	0.26	-0.38	0.66	
AR(2) Test - P-value	0.737	0.669	0.417	0.901		0.508	0.797	0.704	0.509	

Standard errors in parentheses (robust standard errors in the case of BB estimators)

*** p<0.01, ** p<0.05, * p<0.1

Notes:

BB: Blundell and Bond estimator.

LSDVC: Bias corrected Least Square Dummy Variable estimator.

(a): Real Exchange Rate and Preference variables considered as predetermined.

(b): Real Exchange Rate and Preference variables considered as endogenous.

Manufactures: HS codes: 2800 to 9618.

(1): using all available lags as instruments.

(2): first available lag not used as instrument.

(3): Including only sectors for which the dependent variable is present at least in 10 years, and imports of each sector represents at least 0.05% of total imports at least in 10 years.

(+): Sargan Test for the validity of the set of instruments.

(++): Arellano-Bond test for first order serial correlation in first differences.

(+++): Arellano-Bond test second order serial correlation in first differences.

In all cases controlling for time and sector specific effects.