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Diagonal Cumulation of Rules of Origin in South America

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SUMMARY

This paper provides a description of what Rules of Origin are, its economic effects, the main RoO types and the options for adding leniency to these rules by means of using the diagonal cumulation. Nowadays, cumulation of origin is studied in different trade agreements models in the Americas and the use of this practice among FTAs families of one or another style is imminent. According to evidence provided by several papers (Cornejo and Harris, 2007; Gasiorek, 2007; and Estavadeordal and Suominem, 2008), we estimate that taking measures for adding leniency to RoO structures will make it more attractive for regional firms to import from within the region. Finally, more flexible rules of origin will make the region more attractive to foreign investors and, as a consequence, will foster investment flows from abroad. We consider that South American countries have now an opportunity to define a strategy for cumulating origin norms among them. Therefore, it is necessary to negotiate the implementation of a single RoO regime for the region. In this negotiation we think MERCOSUR would be the leading PTA, due to the fact that it is the main player in the region.

Keywords: rules of origin, diagonal cumulation, regional integration.
JEL: F13, F15, F59

RESUMEN

El presente trabajo brinda una descripción de las Reglas de Origen (RoO), sus efectos económicos, los principales tipos y las opciones para su flexibilización en la región sudamericana mediante el uso de la acumulación ampliada o diagonal, tal cual se aplica en la Unión Europea. Actualmente, la posibilidad de acumular origen está siendo estudiada en el marco de distintos ámbitos de integración americana (ALADI o TLCAN) y el uso de esta práctica en alguno de estos ámbitos es inminente. Según estudios realizados en la materia (Cornejo y Harris, (2007); Gasiorek (2007) y Estavadeordal y Suominem (2008)), se prevé que el uso de mecanismos para flexibilizar las RoO harán más atractivos los insumos de la región a las empresas sudamericanas e incentivarán el comercio intraregional. Finalmente, la acumulación de origen tornará a la región más atractiva para los inversores extranjeros. Los países sudamericanos tienen hoy la chance de definir su propia estrategia para acumular origen entre sí, para lo cual es necesario antes negociar la implementación de un régimen de origen único entre las partes involucradas. El MERCOSUR se perfila como el líder natural de este proceso de negociación, debido a que es el jugador más importante de la región.

Palabras clave: reglas de origen, acumulación diagonal, integración regional.

TABLE OF CONTENTS:

ABBREVIATIONS AND ACRONYMS:

- AC: Andean Community
- CEFTA: Central Europe Free Trade Agreement
- CTC: Change in Tariff Classification
- CU: Custom Union
- ECLAC: Economic Commission for Latin America.
- EFTA: Eastern European Free Trade Agreement
- EU: European Union
- EEA: European Economics Association Agreement
- FTA: Free Trade Agreements
- GATS: General Agreement of Trade in Services
- GATT: General Agreement on Tariffs and Trade
- GOR: General Origin Regime
- IADB: Inter American Development Bank
- LAIA: Latin American Integration Association
- MC: Import Content
- MERCOSUR: Southern Common Market
- MFN: Most favoured Nation
- NAFTA: North America Free Trade Agreement
- PECS: Pan European Cumulation System
- PTA: Preferential Trade Agreements
- RoO: Rules of Origin
- ROW: Rest of the World
- RVC: Regional Value Content
- SA: South America
- SACN: South American Community of Nations
- TBT: Technical Barriers to Trade
- TECH: Technical requirements
- VC: Value Content

1 INTRODUCTION

Preferential Trade Agreements[2] (PTAs) have spread in the world in the last decades. South America is part of this phenomenon and, to this date, countries in the region have signed many PTAs with countries in the region as well as with countries of the rest of the world[3]. PTAs raise a certain number of issues to be considered, one of which are rules of origin (RoO). RoO are conditions applied by countries in order to guarantee the origin of production of their trading partners.

Krishna (2005) indicates that RoO specify the conditions under which a good becomes eligible for zero tariffs in an FTA. On the other hand, Estevadeordal and Suominen (2008) point out that "RoO define the processes to be performed and/or inputs to be incorporated into a final product within a particular PTA area in order for the product to qualify for PTA-conferred preferential tariff treatment."

Under the WTO, PTAs are allowed to function as exceptions to the Principles of Non-Discrimination and National Treatment of the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS). Pursuant to GATT Article XXIV, members of PTAs have to notify the agreement and, in these agreements *duties and other restrictive regulations of commerce* have to be *eliminated* on *"substantially all trade"* between the constituent territories for products originating in such territories (GATT 1947, Article XXIV: 8b). Regarding the elimination of regulations on substantially all trade, there is a discussion about whether RoO would be a violation of the GATT.

Why are RoO relevant for the integration processes? Because RoO try to prevent trade deflection –transhipment of goods from non-PTA members to a PTA member with a higher tariff using another PTA member with a lower tariff. The idea is to "preclude outsiders from free-riding on the preferential market access granted to agreement insiders" (Estevadeordal and Suominen, 2008).

[2] Preferential Trade Agreements comprise common markets, customs unions, free trade agreements and single markets.
[3] Only in the Americas there are at least 24 PTAs within the region (Canada, US and Latin American countries) that comprise 38 protocols on rules of origin.

Nevertheless, RoO are developed to preserve the sovereignty of countries reluctant to open completely barriers to trade. Moreover, these rules are identified[4] as hidden protection tools for governments. For instance, in order to clarify this point the case of two countries, A and B, which have signed an FTA with rules of origin conditions can be analyzed. If A fails in meeting the RoO required for B, it cannot export to B, therefore RoO of B determine market access conditions for A and sometimes become more important than the market access clause signed in an agreement per se. They are then an economic policy instrument for B (Ibid.)[5].

This paper explores the theoretical economic problem of RoO and provides a brief description of the different types of RoO in South American PTAs. Finally, a proposal for adding leniency in the RoO applied in South American PTAs is analyzed: the application of diagonal cumulation. The use of diagonal cumulation is key for flexibilizing the origin norms that could block intra regional trade, one of the main components of the integration process among South American countries. Flexibilizing RoO we could start working towards a convergence process that leads to a larger free trade zone in South America.

Thus, RoO have effects on trade, investment flows and production patterns among countries. The requirements established in these rules imply several costs for firms, mostly transaction and production costs and can be perceived as a protectionist device for governments. In an extreme case, the application of a restrictive set of RoO could block exports from PTAs partners and become a trade deflection tool (for intermediate and final goods).

RoO can be more or less restrictive[6] and this is crucial in order to know how much of trade and investment could be blocked as a consequence of the implementation of this instrument. In the case of LAIA countries, RoO are more similar among PTAs and different researchers (see Estevadeordal and Suominem, 2003, 2008; and Kume, H, et al, 2006) estimate that RoO are more flexible than or not as restrictive as the RoO implemented in NAFTA or EU agreements. The similarity among RoO in South America gives the chance of thinking about

[4] See Krueger (1993), Krishna and Krueger (1995), Krishna (2005) and Estevadeordal and Suominem (2008).
[5] Rather than a market access instrument.
[6] The notion of restrictiveness of RoO is based on the analysis of the agreements´s texts. A set of RoO is more restrictive when is based on product-specific (mainly technical requirements conditions) rules with changes by product lines.

the implementation of a cumulation system following the example of the diagonal cumulation system developed by the European Union (EU) with some of its trading partners[7].

According to the economic literature, more flexible RoO distort less than more restrictive ones and besides, they are better for economic welfare (Estevadeordal and Suominem, 2008; Krishna, 2005). Furthermore, evidence provided by Gasiorek (2007) shows that the diagonal cumulation system developed by the EU has had a positive effect on trade flows.

It is then important to study the possibility of implementing a diagonal cumulation system in South America. This paper explores these questions. Increasing trade flows among South American countries and decreasing trade costs for regional firms is important for catching investment flows and being able to achieve sustainable growth in the region, therefore it is a crucial issue.

Finally, it is important to clarify that for this policy to be successful, it needs political will and commitment, but, nevertheless, it is relevant to keep discussing this issue in order for South American firms and political actors to know about the potential benefits of this measure.

The paper proceeds as follows. Section 2 looks at the definitions and the theoretical framework of RoO. Section 3 examines the restrictiveness and specifications of RoO in SA. It also discusses the proposals for a convergence of norms in the region. Section 4 analyses the proposal for a diagonal cumulation of RoO for a group of 10 South American countries and current trade flows among these countries. Section 5 concludes.

[7] EFTA, CEFTA, Baltic States and then Mediterranean countries.

2 THEORETICAL FRAMEWORK

2.1 DEFINITIONS[8]

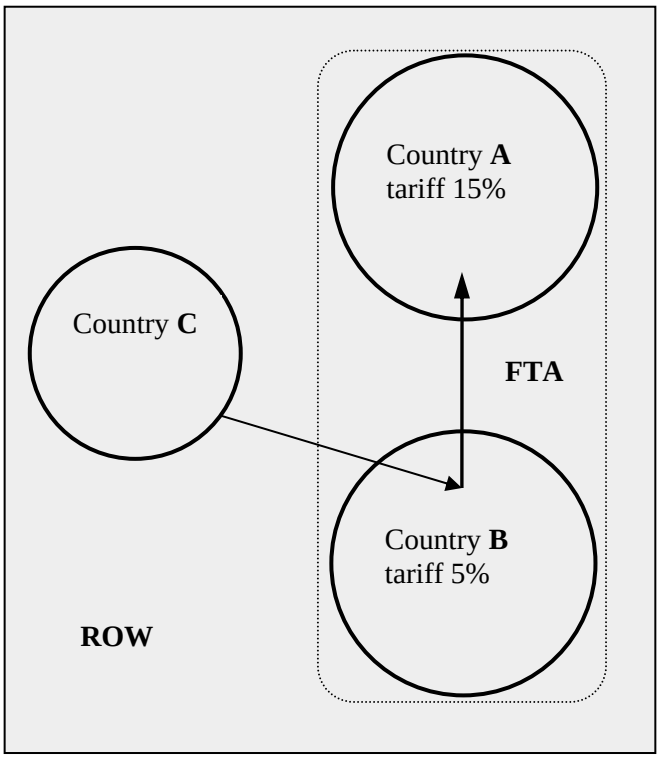
According to the WTO, RoO are laws, regulations and administrative determinations of general application that countries use to determine the country of origin of goods. These are non-preferential RoO. In the case of PTAs, the partners of the agreement determine certain laws, regulations and administrative determinations of general application applied by any member to determine whether goods qualify for preferential treatment under contractual or autonomous trade regimes leading to the granting of tariff preferences beyond the application of the Most Favoured Nation (MFN) principle[9]. This type of RoO is defined as preferential and is the focus of this paper.

Meanwhile, Krishna (2005) and Estevadeordal and Suominen (2008) define preferential RoO as the rules that specify the conditions (processes to be performed and/or inputs to incorporate into a final product) under which a good becomes eligible for zero tariffs under a PTA. Therefore, RoO are the instrument used by members of a PTA to determine which goods qualify for preferential treatment when imported from one member state.

The economic problem that preferential RoO attempt to solve is trade deflection; that is, the existence of rents from trans-shipments. This problem is inherent to free trade agreements, where each member has its external tariffs and tariffs can be different between members. Consider the case of two countries, A and B, that have signed an FTA and maintain different external tariffs (A higher than B). This case is exemplified in Figure 1. Country C, not a member of the FTA, when exporting to A pays a 15% tariff but when exporting to B pays a 5% tariff. Then exporters of C could be tempted to enter the product through the country with the lowest duty, B, and re-export it to A (trade deflection). If trans-shipping costs are slightly below the tariff differential, welfare reduction occurs in the absence of RoO since consumer prices are essentially unchanged, resources are used in trans-shipment, while tariff revenue drops. In this scenario, RoO prevent triangulation of products by firms in order to pay lower tariffs.

[8] This section is based on Estevadeordal and Suominem (2003, 2008), Gasiorek et al. (2007) and Krishna (2005).
[9] WTO Analytical Index: Rules of Origin. Agreement on Rules of Origin.

Figure 1: Trade Deflection



In an extreme hypothetical case, this could lead to a tariff war, up to the point when tariff is zero, then, in perfect equilibrium there would be no trade deflection. In practice, however, most of the time there are differences in tariffs across FTAs and a risk of trade deflection, therefore, RoO are designed to prevent it.

RoO can be analyzed considering two dimensions: on the one hand, sector or product-specific RoO and, on the other hand, general RoO. In the following section we describe these two dimensions.

2.1.1 Product-specific RoO

The Kyoto Convention[10] establishes that preferential RoO are based on two criteria: "wholly-obtained or produced" and "substantial transformation" of the product. The "wholly-obtained" criteria is applicable to live animals, mineral products and raw foodstuff and specifies the commodities to be entirely grown, harvested or extracted from the soil of a member country

[10] The Kyoto Convention is an international Convention on the Simplification and Harmonization of Customs procedures that entered into force in 1974 and was revised and updated in 1999 to ensure that it meets the current demands of governments and international trade. The World Customs Organization Council adopted the revised Kyoto Convention as the blueprint for modern and efficient Customs procedures in the 21st century. LAIA members have signed and ratified the treaty.

of the PTA. Likewise, the "substantial transformation" criteria can be divided into four categories that can be used separately or in combination with each other: i) change in tariff classification (CTC) rule, ii) prohibitions of using certain non-originating components rule, iii) production process or technical requirements (TECH) rule, iv) value content rule (VC). Product-specific RoO could become also general rules, by being applied across the board for all tariff items.

The first category, CTC, requires a change in tariff classification between the inputs from outside the region used in the production process and the final product, from a tariff item to a subheading or from a subheading to a heading or chapter. The idea is to avoid giving an "originating" status to a product which is a mere assembly of foreign materials and parts (like the *maquilas* in México). The extension of the CTC determines the degree of restrictiveness of the rule.

The second category refers to the prohibition on using certain type of products imported from outside the PTA. The third category, TECH, indicates certain productive processes or technical requirements that must be performed within the PTA to comply with the origin condition. This category could be considered as the most restrictive rule, due to the lack of classification procedures to determine sufficient transformation in the production process of a good. Thus, it becomes a discretional tool for governments[11].

The last category requires the product to comply with a minimum percentage value that must be added in the exporting country (VC[12]). VC categories are: i) a minimum regional value content (RVC), ii) a minimum difference between the value of the final good and the costs of imported inputs (import content, MC), iii) a minimum value of originating parts (VP).

Estevadeordal and Suominen (2003) found that the most frequent RoO condition in PTAs is the requirement of a CTC for a product. Nevertheless, the majority of the PTAs used a combination of CTC and RVC. According to the authors, in a set of 6 Customs Unions (CU) and 87 FTAs studied around the world, all the CU and 83 FTAs require a change in tariff

[11] It is frequently used in textile products.
[12] Ranking between 30% and 60%.

heading criterion. Besides, FTAs and other PTAs use mostly the VC criterion and are the only users of the TECH[13].

Coverage/Type of Rule		Wholly-obtained	Substantial Transformation				
			CTC	VC			TECH
				RVC	MC	VP	
Specific	Product	x	x	x	x	x	x
	Sector	x	x	x	x	x	x
All sectors			x	x	x	x	

2.1.2 General RoO

General RoO are rules applied across the board for all tariff items. These rules are classified in the following categories: i) the degree of *de minimis* rule, ii) the roll-up (or absorption) principle, and iii) the type of cumulation. The three general rules add flexibility to the RoO.

The first category, the *de minimis* rule, allows for a specified maximum percentage of non-originating inputs to be used without affecting origin.

The second category, the roll-up principle, allows for materials that have acquired origin by meeting specific TECH requirements to be considered as being originated when used as inputs in a subsequent transformation. Then, inputs from outside the zone are not considered in the calculation of the value added of the subsequent transformation.

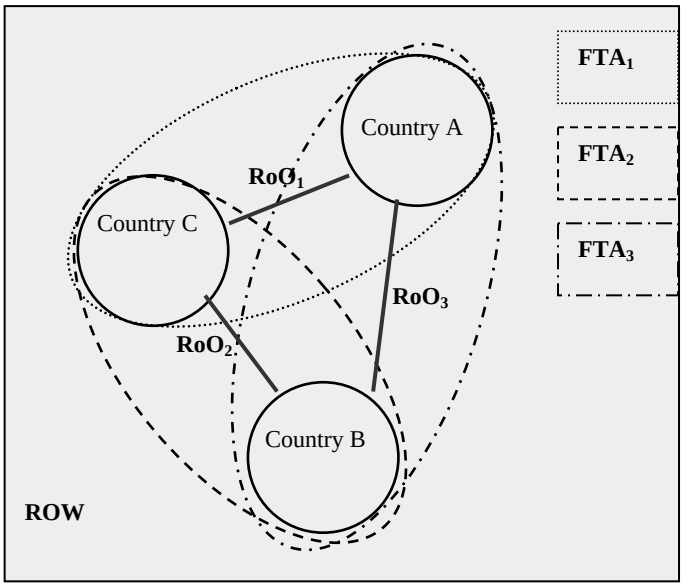
The third category, cumulation, allows for firms of a PTA to use inputs from another country and guarantee the national origin of the final product (without loosing the preferential treatment). Cumulation can be divided into three types: bilateral, diagonal and full. Bilateral cumulation is present in all PTAs and is the most restrictive type. Bilateral cumulation guarantees that two (or more) partners can use inputs from each of the two (or more) countries without losing the national origin of the final products. The two other cumulation criteria are more flexible and apply to three or more countries linked by FTAs with the same set of rules of origin.

[13] They worked with World Trade Organization information from 2002.

Diagonal cumulation allows the use of inputs originated in any of these countries as if they were originated in the exporting country. Therefore, this system expands the suppliers of intermediate products for firms within the preferential area. This type of cumulation could help flexibilize RoO and it would be an important element in the "spaghetti bowl" problem[14] solution.

The "spaghetti bowl"[15] effect (illustrated in Figure 2) relates to the problem of overlapping of different rules of origin for regulating the trade of goods and services. This problem could lead to inconsistency between agreements with negative consequences on trade costs, efficiency and competition conditions in global markets. To solve this problem it is necessary first to harmonize the different rules of origins of the agreements and second extend the cumulation scope by means of using diagonal or full cumulation practices.

Figure 2: Proliferation of RoO- *Spaghetti Bowl Effect*



An illustration of diagonal cumulation for solving the "spaghetti bowl" problem of RoO is developed in Figure 3. For diagonal cumulation to be applied all member countries must have signed FTAs among themselves and those FTAs must have a similar set of RoO.

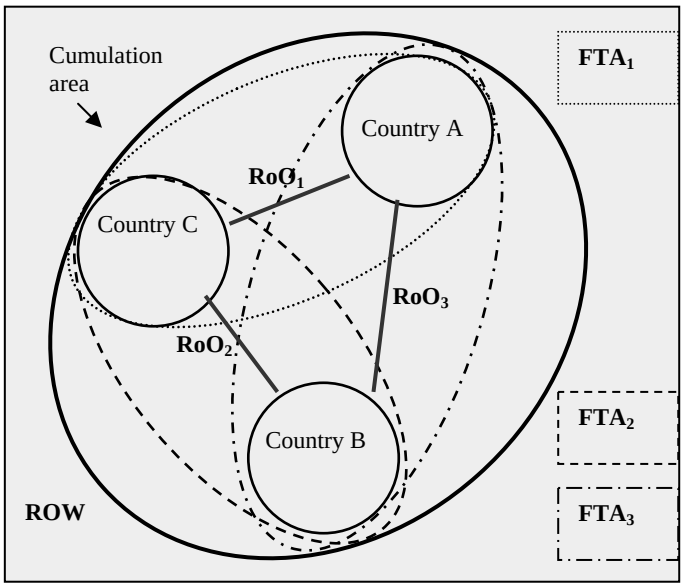
Finally, full cumulation adds more flexibility than diagonal cumulation by allowing all partners to use inputs produced in any part of the area, even non-originating products. The

[14] It has been used in the Pan European Cumulation System.
[15] Term of *Jagdish Bhagwati.*

idea is that all inputs and production processes used in the area to create a final product when added together are enough to meet the origin rule. For instance, in Figure 3 with full cumulation country A can cumulate inputs from B and C, even the products that do not qualify as originating from these countries.

Following Gasiorek (2007), with this type of cumulation, country A can cumulate the proportion of B´s or C´s value added together with its own value added in determining originating status. This is the most complete cumulation system, but since it has not been used, it is only a theoretical classification. These two last cummulation types could bring a higher expansion of trade flows among countries, for which we think they are a better tool for welfare enhancing.

Figure 3: Diagonal cumulation of RoO



Nevertheless, we should take into account that RoO heterogeneity is the result of trade negotiations and always have specific political economy interests behind them. Therefore, when harmonizing and flexibilizing the instrument these political economy equilibriums will break and then there could be some group against the initiative.

Statistics showed by Estevadeordal and Suominen (2003) indicate that in a set of 6 CU and 87 other PTAs the *de minimis* rule is used in the majority of cases (88 out of 93 agreements). Regarding the type of cumulation allowed, bilateral appears in all the agreement texts,

diagonal in 58 PTAs[16], and full in only 5 PTAs. The treaties that allow for full cumulation are: the European Economic Area (EEA) agreement between EU and EFTA countries; the EU-South Africa FTA[17]; the Asean Free Trade Area (AFTA), the Australia New Zealand Closer Economic Agreement (ANZCERTA) and finally the Canadá-Israel FTA with respect to USA. Finally, the roll-up rule is applied in 2 CU and in 81 PTAs.

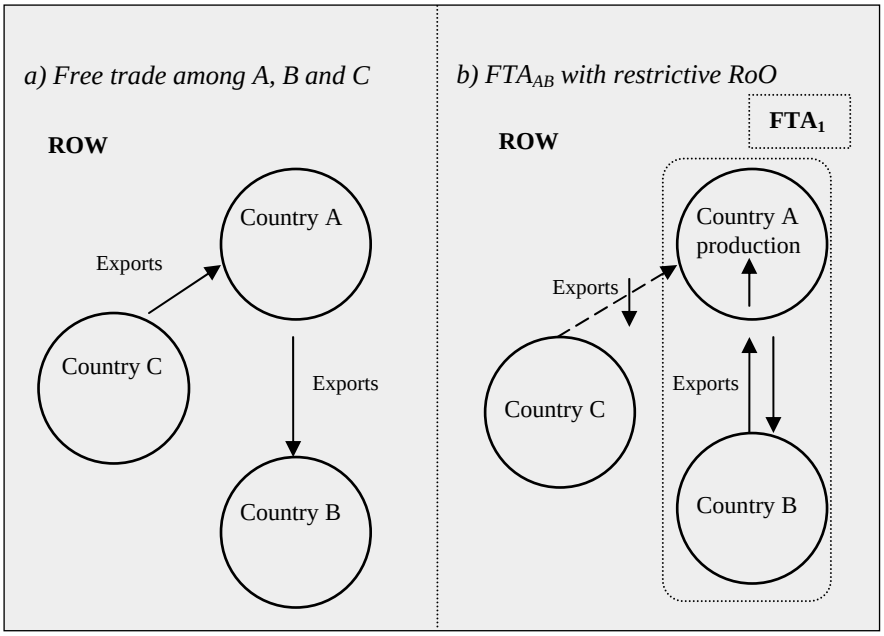
2.2 ECONOMIC EFFECTS AND COSTS OF ROO

Rules of Origin conditions can be a powerful economic policy tool for hidden protectionist purposes, due to their particular characteristics of troublesome and detailed product by product negotiations and the possibility of applying discretionary rules based on production processes requirements. Estevadeordal (2000), Flatters (2002), Estevadeordal and Suominen (2003) and Sanguinetti (2003)[18] have shown in empirical papers that the same political economy factors that drive tariff protection also drive RoO[19]. Therefore, private firms have an incentive to lobby for obtaining benefits from RoO conditions (for instance, see cases of EU and US in the textile and automobile sectors' negotiations[20]). In this sense, the imposition of RoO is not exempt of economical consequences, the most important of which are trade diversion, trade suppression in the short run and investment diversion in the long run. The magnitude of the effects depends on the degree of restrictiveness of the rules.

In other words, more restrictive RoO have more distortionary effects than more flexible ones. Figure 4 shows short-term effects (basically on trade flows) of having an FTA with restrictive RoO. We have three countries, A, B and C with trade relations among them.

[16] The majority of these agreements are part of the Pan European Cummulation System family.
[17] It also incorporates the "single territory" concept: goods originating from countries members of the Southern Africa Customs Union (SACU) are considered as originating in the EU-South Africa FTA zone.
[18] Estevadeordal (2000) studied the case of NAFTA, Flatters (2002) the Southern African Development Community case, Estevadeordal and Suominen (2003) the European Union's extra-regional FTAs with South Africa, Mexico, and Chile case, and Sanguinetti (2003) the MERCOSUR case.
[19] Nevertheless, taking the case of MERCOSUR, Kume, Piani and Miranda (2006) found that apparently there is no positive correlation between tariff levels and the degree of restrictiveness of RoO.
[20] Gasiorek (2007).

Figure 4: Effect of restrictive RoO



In case a) they trade freely according to their preferences and there is no FTA. A imports oranges from C (the most efficient oranges producer) and exports orange juice to B paying MFN tariffs. In case b) countries A and B have signed and FTA with restrictive RoO. Then trade flows change. If A wants to export to country B benefiting from preferential access, it must comply with RoO. Therefore, A has to either increase the exports of the intermediate input from country B or to increase the local production of the input within country A.

Krishna (2005) summarized what he learnt from the literature on the economic effects of RoO in four laws: i) RoO can insulate an industry from the consequences of an FTA while providing hidden protection for intermediate inputs used by it[21]; ii) the precise form of the RoO matters; iii) the time period matters: short run effects are more related to trade flows while long run effects affect investment flows; iv) more restrictive RoO could result in higher rather than lower imports from the rest of the world.

The first law implies that RoO are like a tariff on the intermediate product collected by the importing country (Falvey and Reed 2000; Lloyd 2001), and can be used by one PTA member to secure its PTA partners' input markets from the exports of its own intermediate products

[21] In this sense, according to Krishna "it may well be that the ability to insulate an industry makes FTAs easier to pass than Customs Unions".

(Krueger 1993; Krishna and Krueger 1995). This is a type of industrial policy protection that PTA members can apply to protect domestic markets, with the consequence of trade divertion.

The second law indicates that the form of the RoO has more or less consequences on the economy, in the sense that rules identified as more flexible and transparent have less negative effects on trade flow deviations than more rigid and complex rules. Besides this, according to Krishna, more restrictive RoO benefit intermediate inputs producers and more flexible RoO benefit final goods producers, so these groups will lobby for different types of RoO. On the other hand, the same type of rule could affect PTA countries differently. In this respect, producers located in the PTA member with the lowest production costs can be in a weaker position than producers in the PTA member with the highest production costs when RoO are based on regional value content. The reason is that RVC rules are easier to comply with in countries with higher production costs.

The third law explains the difference between time periods in the effect of RoO. Short-run effects of RoO are more related to trade deflection, like the illustration in figure 1, but in the long run, RoO hold the potential of increasing local sourcing and affecting the locational decisions of investors, generating investment diversion. Furthermore, investment diversion could damage more the smallest PTA partner, increasing the asymmetries among countries. This is to say, final good producers are pressed to buy inputs from their home country or the PTA partner for exporting to the region, they could choose to locate in the largest PTA market and the one with the lowest external tariffs, and therefore, this investment diversion could damage the smallest PTA partners. In view of the three laws mentioned and quoting Estevadeordal and Suominen (2003), we can assume that RoO can lead to distortions in production structures within PTA regions.

The fourth law indicates that firms that cannot comply with stringent RoO will ignore them and will prefer importing from the rest of the world and paying the MFN tariff when exporting to the PTA partner[22]. That is, highly restrictive RoO can constrain intra-PTA trade.

Regarding costs of binding RoO, they could be differentiated in administrative and production costs. The first is related to the procedures firms have to follow to obtain origin certification,

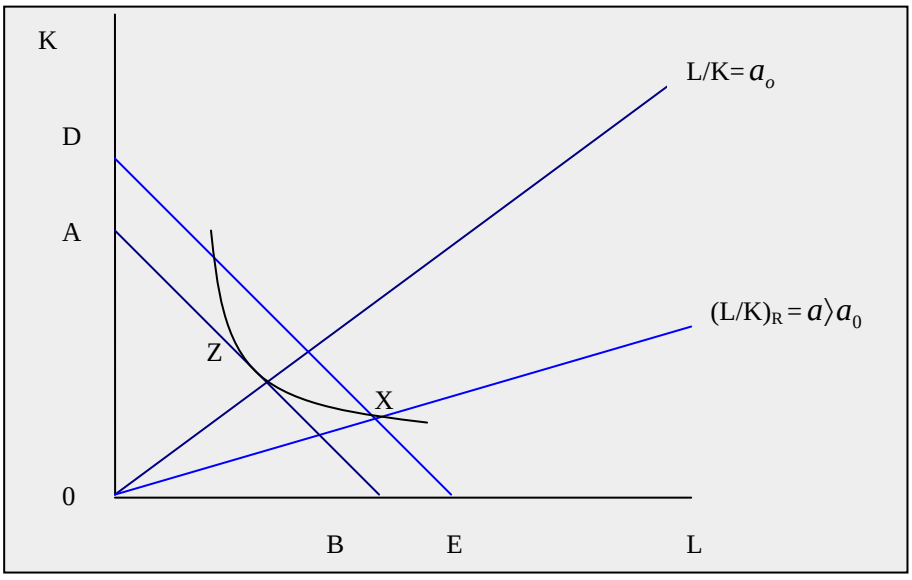
[22] The higher the MFN tariff, the greater the willingness of firms to comply with RoO.

which in some extreme cases could also prevent firms from exporting to a PTA member even though they have preferential access to that market. According to Gasiorek (2007), there is evidence on administrative costs that range from about 3%-7%.

The increase in production costs is related to the intermediate product which faces the RoO conditions. Following Krishna and Krueger (1995), RoO are constraints that must be met for obtaining origin. The binding RoO determine that the choice of inputs for production is constrained and, as a consequence, costs could be higher than before the RoO if the rules are met. A higher degree of restrictiveness of rules implies a higher degree of constraints for firms and, consequently, higher production costs.

This is illustrated in Figure 5, taken from Krishna (2005), which describes a physical content requirement that has to be met to obtain origin. The curb represents the unit iso-quant. Local FTA inputs are represented by L and imported inputs by K. We assume the economy moves under constant returns to scale.

Figure 5: Local content RoO and Costs



Firms choose a combination of inputs L and K for producing the final good at the point Z. The input mix (L/K) ratio equals a_0. The height of the AB line shows the lowest feasible unit costs. A set of binding RoO will change the mix of inputs used in the production process. In this example, if origin conditions demand that (L/K)$_R$ be at least $a \rangle a_0$, then unit costs are minimized by choosing the input mix at X. In this case, the height of the DE line represents

the lowest feasible unit costs. Therefore, after the imposition of RoO, the input mix was distorted in favour of the local FTA input L for any given product of output. Thus, at any level of output, the demand for L is always higher than the demand for K. As can be seen in the graph, if RoO become more restrictive, that is, if $(L/K)_R \rangle a_0$, then unit costs increase.

There is empirical evidence on the subject, mostly focused on the case of NAFTA and the EU, which supports the theory. For instance, when examining NAFTA, Appiah (1999) finds that RoO distort trade flows, diverting resources from their most efficient uses and undercutting global welfare. Meanwhile, Estevadeordal and Miller (2002) and Cadot et al. (2002) document utilization rates of preferences below 100 percent (64% for Cadot) in NAFTA and attribute this to stringent RoO. Analyzing the EU, Brenton and Manchin (2002) attribute the low utilization rates of the EU's trading partners in the textile sector to excessively stringent EU RoO. Augier and Gasiorek (2002) examine two different types of PTAs, both with RoO, but one of them with a more flexible structure (allowing for diagonal cumulation).They find evidence that when rules are more rigid, trade is more than a third lower than the expected level of total trade.

In spite of this, Estevadeordal and Suominen (2003) indicate an ameliorating factor of RoO effects: the relevance of RoO as a constraint on commerce decreases with the lowering of MFN tariff barriers across PTA members ex-ante the introduction of the rules. This could be explained by what was mentioned at the beginning of this chapter regarding the fact that the same political economy factors that drive tariff protection also drive RoO.

2.3 ECONOMIC EFFECTS OF CUMULATION

With respect to the economic effects of diagonal and full cumulation of RoO, if firms can cumulate intermediate inputs from countries within the preferential area and comply with the rules of origin, then diagonal and full cumulation clearly expand suppliers and foster competition, which are conditions for choosing the most efficient suppliers and then decreasing production costs for firms.

For instance, in the case of figure 3 wherein 3 countries (A, B and C) are members of a preferential area, if, before the application of a diagonal cumulation policy, A wanted to

export a good to B it had to comply with certain RoO and could not choose intermediate inputs' sources from C. A, in order to comply with the rules had to import intermediate inputs from B or supply it itself domestically. Then, with the diagonal cumulation in force, A can import inputs from B or C or produce them itself, without loosing the preferential status. This example can have different effects depending on the country analyzed.

First, it could be an example of trade creation if A imports more from C and decreases domestic production, and it could be combined with trade reorientation (A first imported from B and now imports from C). Second, from the point of view of country B, this is a case of trade suppression, due to the fact that before the diagonal cumulation, country A used to import inputs from country B to comply with the RoO and, since this is no longer necessary, trade flows between these two countries decrease. Third, there can be trade creation for country C due to the increasing imports of inputs from country B.

Finally, analyzing the rest of the world (ROW) there could be trade diversion and trade creation. Trade diversion if before the diagonal cumulation A imported inputs from the RoO that now are provided by country C. There could be trade creation if country A decides to import more intermediates from the ROW, because with diagonal cumulation, country A can increase the proportion of intermediates from country C and can import more inputs from the ROW without loosing originating status. If those imports substitute more costly partners from B, then we have trade reorientation, and if they replace domestic production, then we have trade creation.

To sum up, overall, the benefits of diagonal cumulation are several, On the one hand, it is a way of avoiding trade deflection, but it is also a tool for extending market access for countries and therefore increasing trade flow. Thus, it could help in solving the *spaghetti bowl* of RoO problem and reaching a multilateralization of regionalism. Furthermore, this practice can be an incentive for foreign direct investment attraction and then a way of fostering growth for developing countries. Nevertheless, this is a costly strategy at first due to the negotiation efforts and the time involved in reaching a convergence of rules and the homogenization of practices regarding RoO (certification, verification, etc.). In spite of this, at the end of the day benefits will outweigh the costs and the social welfare will rise when origin conditions are relaxed and economies are closer to free trade.

3 COMPARED EVIDENCE ON RULES OF ORIGIN

3.1 SPECIFICATIONS AND RESTRICTIVENESS OF ROO

In the following section we will briefly study the RoO regimes used in Latin American PTAs compared with the regimes that prevail in Europe. We take into consideration the degree of restrictiveness governing each of the PTAs studied[23].

Existing RoO regimes within the Latin American Integration Association (LAIA)[24] framework can be described as a traditional group or family due to their similar contents, scope and main characteristics (Garay and Cornejo, 2002). The LAIA type of RoO uses a general rule applicable across the board for all tariff items together with a set of specific requirements in certain products. This model was the inspiration for the regimes in the Andean Community[25] (AC), the Southern Common Market[26] (MERCOSUR) and the agreements among the countries involved in these two integration areas.

The LAIA type of agreement, dating back to the eighties, is also called a first generation agreement. Within the LAIA framework, general LAIA rules of origin apply where agreements do not define their own rules of origin. The RoO regime is declared in the 252 LAIA resolution. The scope of this resolution includes the integration agreements and partial agreements signed by member countries of the LAIA. The origin classification is based on changes in tariff headings or an RVC of at least 50% of FOB value of products. The resolution takes into account a differential treatment for the least developed countries in the region (Bolivia, Ecuador and Paraguay), admitting a lower regional value content for their exported goods.

[23] The analysis is based on Cornejo and Harris (2007), Garay and Cornejo (2001), Gasiorek, Augier and Tong (2007) and Estevadeordal and Suominen (2008) and Kume, Piani and Miranda (2006).
[24] LAIA is an Integration Association created in 1980 among Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, México, Paraguay, Peru, Uruguay, Venezuela.
[25] Integration Agreement among Bolivia, Colombia, Ecuador and Peru (Venezuela used to be a member, but left the agreement in 2006).
[26] Imperfect Customs Union among Argentina, Brazil, Paraguay and Uruguay (since 2006 Venezuela is in the process of becoming a member).

Another family of RoO is the so-called "new generation" agreements beginning with the NAFTA and the other NAFTA model FTA agreements[27]. The new generation PTA style of RoO is based on changes in chapter, heading, sub-heading or item, depending on the product. Moreover, there are combinations of CTC with exceptions, RVC or TECH requirements. This type of agreement is known for being very complex and rigid.

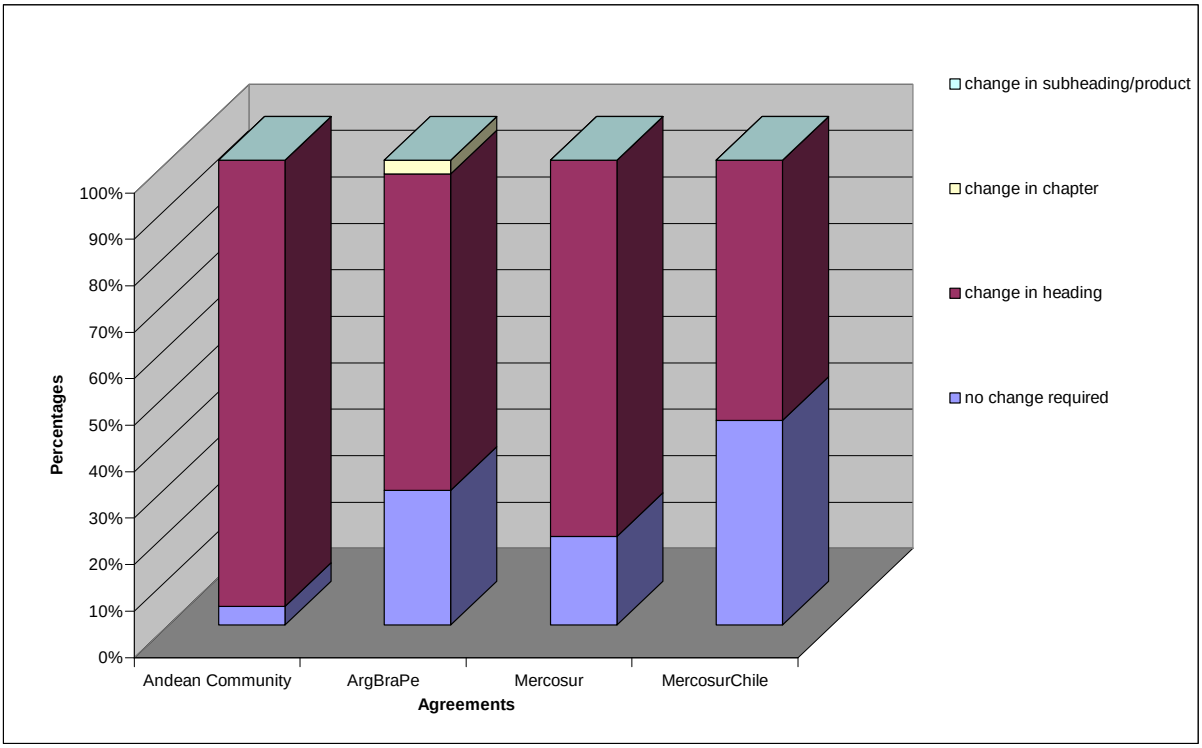
MERCOSUR[28], AC and the FTAs among their member countries[29] have origin regimes that are based on the LAIA model and that share similar rules in the CTC component (extensive use of change in tariff heading) and in the VC requirements (average level of value content required –maximum import content or regional value content– is 40-60%). Therefore, for Estevadeordal and Suominen (2008) these PTAs within the South American region form a clear family of RoO. Figure 6 shows a description of changes in tariff classification requirements for a group of SA agreements. Considering the RoO conditions, the authors find evidence that NAFTA type of FTA, followed by the EU type are the most complex ones, whereas PTAs within SA countries are among the simplest ones.

However, the MERCOSUR family of RoO is more restrictive than the LAIA model and thus is considered to be between the LAIA and NAFTA extreme models. Nevertheless, according to Kume, Piani and Miranda (2006) the RoO in MERCOSUR are "not so relevant" as in NAFTA or the EU agreements.

MERCOSUR RoO are based on Change in Tariff Heading (CTH) or RVC conditions, and specific requirements for certain products (CTH and RVC conditions). When substantial transformation cannot be valued by a CTH, then the CIF value of inputs from third countries cannot exceed 40%. There are also certain specific requirements for a group of products of chemicals, iron and steel industry, and communication and information technologies. MERCOSUR allows for a differential treatment of Paraguayan and Bolivian products. On the other hand, the AC regime is similar to LAIA and also gives preferential treatment to Bolivia and Ecuador.

[27] Style used mainly by Canada, México and US FTAs.
[28] MERCOSUR (ACE 18) has an origin regime due to the fact that it is an imperfect customs union. The Origin Regime is described in Decision CMC 1/2009.
[29] AC (Decision 416), Bolivia-MERCOSUR (ACE36), Colombia/ Ecuador/Venezuela-MERCOSUR (ACE59), Peru-MERCOSUR (ACE58), Chile-MERCOSUR (ACE35), Chile-Colombia (ACE24), Chile-Peru (ACE38), Chile-Bolivia (ACE22), Chile-Ecuador (ACE32), Chile-Venezuela (ACE23).

Figure 6: Change in Tariff Classification in SA selected agreements



Source: Estevadeordal and Suominen (2008) calculations on the basis of PTA texts.

In the European Union (EU) family of PTAs, the RoO regimes used are uniform, consisting in a so-called "single list", due to the harmonization efforts carried out by the European Commission on the different types of RoO employed in PTAs. The harmonization process ended in 1997 with the implementation of the Pan-European System, which required identical RoO protocols across the EU´s PTAs for allowing diagonal cumulation among partner countries. The "single list" of RoO is complex and it is one of the most rigid systems. It has combinations of CTC at the heading level with exceptions, VC rules and TECH requirements, all of which vary greatly across product lines.

In the area of general RoO, the *de minimis* rule is not introduced in the AC and in the MERCOSUR, however, in some agreements like the Chile-Colombia FTA there is a *di minimis* rule of 10% applicable to all goods except for agriculture. Considering cumulation, full cumulation is authorized in the MERCOSUR agreement[30] and in the AC agreement[31]. In

[30] Dir. CCM Nº 04/04, ACE18.
[31] Article 7, Dec. 416 (CAN agreement).

these cases, the term full cumulation written in the agreements means free circulation of original products intra the Regional Trade Agreements. Likewise, diagonal cumulation is allowed in the MERCOSUR-Peru, MERCOSUR-Colombia-Ecuador-Venezuela and MERCOSUR-Bolivia FTAs[32]. For instance, in the MERCOSUR-Bolivia agreement a case for diagonal cumulation practice could involve MERCOSUR, Bolivia and another country member of LAIA that have signed FTAs with MERCOSUR and Bolivia and besides have completed the tariff reduction chronogram. Chile could be one potential candidate.

Nevertheless, these cumulation practices have not been enforced yet because there are many conditions that need to be accomplished first, for instance, the convergence of tariff levels among regional PTAs and the harmonization of rules of origin. According to Magariños (2007), MERCOSUR is the PTA with the most precise and developed total cumulation principle from SA and it also allows for diagonal cumulation of Andean materials[33].

The *de minimis* rule in the EU is 10%, a higher value than for NAFTA and other PTAs in the Americas and the system allows for diagonal cumulation[34]. Concerning certification requirements, the AC and the MERCOSUR use a public certification authority but allow for the delegation to private certification entities (with the approval of a government certifying agency).[35] At the same time, Chile's FTAs, the Pan Euro and other EU FTAs use a public certification authority but allow for a limited self-certification agreement.

To sum up, RoO protocols in MERCOSUR, AC and their families derive from the LAIA model and are closer between them than NAFTA RoO style. Moreover, Chile's FTAs with South American countries share the more simple style of RoO of their regional partners. This is to say, these PTAs among 10 South American countries[36] form a clear family of RoO. Therefore, this family is in a good position for negotiating convergence and diagonal cumulation of RoO.

[32] Article 6, ACE58; Article 6, ACE59; Dec. CMC N° 41/03; Res. GMC No. 37/04; Article 7, ACE 36. These countries can cumulate from other LAIA countries after accomplishing the diagonal cumulation conditions.
[33] This norm is not reciprocal, the AC does not have a clause that allows Andean countries to cumulate with MERCOSUR materials.
[34] Chapter 4 will include a description of the Pan Euro system.
[35] Origin certification aims to ensure that preference is only granted to goods originating in a certain country.
[36] Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Perú, Uruguay and Venezuela.

3.2 CONVERGENCE OF NORMS IN THE REGION

LAIA, MERCOSUR and the AC secretariat teams have been working during the last years in developing routes for convergence of the integration agreements in South America towards the enforcement of the South American Community of Nations (SACN)[37]. They have proposals regarding normative and institutional aspects, the economical and political integration and solving the asymmetries among SA countries[38]. The research and proposal for a convergence of the integration agreements in the region, and, more precisely, the discussion about the tariff lines and RoO convergence will be reviewed in this section. Convergence of tariff lines and RoO in SA PTAs is crucial in order to be able to cumulate within the region. Under the LAIA framework, government experts on rules or origin have held several meetings for discussing convergence issues after writing the proposals[39]. However, no real steps towards convergence of norms have been taken up to now.

Besides the LAIA forum, there are other initiatives in America towards convergence. For instance, there is the 11-country Pacific Basin Forum formed in January, 2007 and a 12-country trade partnership effort involving 10 Latin American countries as well as the United States and Canada. Aside from this, five other countries of the Americas are involved in convergence discussions in the Asia-Pacific Economic Cooperation (APEC) forum.

In 2006, the SACN mandated the LAIA, MERCOSUR and AC secretariats to elaborate studies on the convergence among South American nations towards free trade. This initiative consists of the major research about convergence in South America that has been done so far. The aim was to reach a "gradual establishment of a South American free trade zone together with the complementation of the economies and the promotion of their growth and development."[40] This goal was pursued together with a reduction in the existing asymmetries between countries. The final document was sent to the SACN members, but has not had any consequences so far on active policies towards convergence within South American countries.

[37] The South American Community of Nations was created by 12 South American countries in 2007: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Surinam, Uruguay and Venezuela. It is currently called UNASUR. This organization has 361 million inhabitants (fourth in the world's regional trade agreements), a surface of more than 17 million km2, exports of US$ 182 thousand millions a year, a GDP of US$ 973 thousand millions (the fifth richest region in the world), one of the largest freshwater reserves on the planet, oil and gas reserves for 100 years, aside from an enormous biodiversity.
[38] See ALADI, CAN y MERCOSUR (2006).
[39] The last one took place in September of this year.
[40] ECLAC (2006b).

The document defines three categories to study regarding South American countries: a new treatment of the asymmetries among SA countries; convergence of integration agreements; and legal and institutional issues connected to SACN. As regards to convergence between SA integration agreements, there are proposals on 14 issues: tariff reductions; rules of origin; customs valuation and special customs regimes; trade remedies; non tariff measures; technical barriers to trade; sanitary and phytosanitary measures; trade in services; investments; intellectual property; competition policies; government procurement and dispute settlement.

Aside from the studies carried out by AC, LAIA and MERCOSUR, the ECLAC constructed complementary proposals that suggest reaching convergence of rules of origin, eliminating antidumping measures and safeguards in intracommunity trade, strengthening non-tariff measure disciplines, taking action on the issues of equivalency and mutual recognition in the technical rules and regulations (TBT), implementing the criteria of "pest-free zones", eliminating restrictions to trade in services, and finally, including other options besides the dispute settlement mechanism available in WTO.

Regarding the asymmetries among South American countries, the proposals for a new treatment involve specific policies for market access and treatment of structural and public policy asymmetries. The idea is for the relatively less developed countries of South America to receive special and differential treatment, have access to intraregional markets and complement and obtain a competitive development, in order to converge towards common patterns of economic growth and trade integration[41].

A measure of the proportion of trade among the countries of the SACN that should be free of tariff as of 2006, 2010, 2014 and 2018 (see table 1 and ALADI, CAN, MERCOSUR, 2006) was developed in the study. The proposal on convergence of tariffs indicates that reductions in tariff should be sped up, giving priority to the smaller and relatively less developed countries. There is room for accelerating the liberalization of reciprocal trade, because up to now, trade liberalization among members of SACN is moving slowly.

[41] ECLAC (2006a).

According to the study, tariff–free intracommunity trade will account for between 50% and 70% of total trade in 2010, depending on how it is measured. In 2018, the figure will be between 65% and 95%. Only Chile and Bolivia are expected to achieve market conditions close to free trade by 2010, when more than 85% of their exports will be entitled to preferential market access in the sub-region.

Table 1: Changing patterns of free trade in SA, several years

(% of the beneficiary's exports, weighted by preferential tariffs*)

2006		Granting authority									
		AR	BR	PA	UY	CH	BO	CO	EC	PE	VE
Beneficiary	AR		76	85	82	72	58	3	4	7	13
	BR	62		72	70	89	65	9	7	2	8
	PA	96	97		98	68	18	1	0	0	53
	UY	92	92	93		72	62	3	8	17	5
	CH	85	83	84	84		0	96	96	81	94
	BO	81	83	89	80	99		100	100	100	100
	CO	15	14	1	21	97	100		100	100	100
	EC	69	75	18	32	46	100	100		100	100
	PE	64	69	7	58	86	100	100	100		100
	VE	2	27	18	22	100	100	100	100	100	

2014		Granting authority									
		AR	BR	PA	UY	CH	BO	CO	EC	PE	VE
Beneficiary	AR		76	85	82	96	100	24	17	65	27
	BR	62		72	70	100	100	24	20	57	26
	PA	96	97		98	98	100	16	8	48	79
	UY	92	92	93		100	100	13	25	40	9
	CH	100	100	100	100		0	100	96	99	100
	BO	100	100	100	100	99		100	100	100	100
	CO	58	64	1	49	100	100		100	100	100
	EC	86	91	41	65	46	100	100		100	100
	PE	100	100	72	71	100	100	100	100		100
	VE	53	83	28	22	100	100	100	100	100	

2018		Granting authority									
		AR	BR	PA	UY	CH	BO	CO	EC	PE	VE
Beneficiary	AR		76	85	82	96	100	79	82	70	85
	BR	62		72	70	100	100	70	81	66	76
	PA	96	97		98	98	100	78	73	98	98
	UY	92	92	93		100	100	53	39	99	65
	CH	100	100	100	100		0	100	96	100	100
	BO	100	100	100	100	99		100	100	100	100
	CO	80	65	86	84	100	100		100	100	100
	EC	92	92	89	84	46	100	100		100	100
	PE	100	100	99	75	100	100	100	100		100
	VE	81	86	91	86	100	100	100	100	100	

*Source: Secretariats of the Andean Community, LAIA and MERCOSUR on the basis of the South American trade convergence data bank. * The darker the shading the less free trade takes place between the two countries. Bilateral relations with a degree of trade openness of over 90% are shown against a white background.*

Data from 2006 reveals that the best performance in terms of trade liberalization was for the AC, where, in theory, liberalization applied to all AC countries in all tariff categories. MERCOSUR is in a different situation, since there are exceptions to free trade in the sugar and motor vehicle industries and no major changes are expected in next years.

Regarding the SACN document, in 2014 there will still be a significant portion of products that will not benefit from liberalization and many other cases in which trade liberalization will benefit less than 90% of SA exports. This problem becomes more accentuated in trade between the AC and MERCOSUR, in particular in the cases where AC countries are the granting authorities and MERCOSUR countries the beneficiaries[42]. In general terms, in 2018 there are more white boxes than before, so this is a clue that the region will be closer to free trade than in 2006 due to the application of the reduction of a trade tariffs schedule (table 1).

Likewise, according to information shown by Cornejo and Harris (2007)[43], in a total of 40 agreements studied from South America, by 2007 only six of them had zero tariffs in 80-100% of negotiated products. The majority of the PTAs had fully liberalized subheadings in less than 50% of products. This situation will change by 2013, where more than the half of the PTAs analyzed will have almost reached the complete market access. Finally, by 2016 nearly all agreements will be fully liberalized in 80-100% of products.

As regards RoO convergence[44], the document states that the differences between agreements are not significant. However, rules and origin certificates should be harmonized and the legal basis unified, in order to achieve full convergence of the agreements. The norms should have a common legal base in order to reach higher transparency levels. Convergence of certifications would reduce the verification and control time, and therefore will imply a reduction in costs for firms. ECLAC adds that accumulating origin among South American PTAs would mean rapid progress without complex negotiations.

A recent IADB paper[45] suggests five short-term market access measures that could help in fostering convergence: i) harmonizing digital Origin Certificates (standardizing the information to be included on origin certificates and digitalizing them); ii) standardizing origin verification procedures (establishing common verification procedures); iii) sector RoO convergence (starting the convergence by the sectors with the most similar RoO); iv) sector

[42] Nevertheless, according to CEPAL (2006), the trade between AC and MERCOSUR members is practically liberalized but there are exceptions in the automotive industry and sugar sector that prevent a complete liberalization.
[43] Cornejo and Harris (2007): Annex: Table 4.
[44] As a first approach to the issue the research compares RoO of the AC, and the FTAs: Chile-MERCOSUR, Peru-MERCOSUR and Colombia/Ecuador/Venezuela-MERCOSUR (they leave behind the comparison of RoO in MERCOSUR, Bolivia-MERCOSUR, Chile-Peru and LAIA).
[45] Est evadeordal, Harris, Shearer, Suominen (2009).

MFN harmonization (eliminating RoO on sectors where tariffs are harmonized) and finally v) selective MFN tariff liberalization (eliminating tariffs on an MFN basis in certain products already liberalized to major exporters). It also indicates that it will be important to ensure that the convergence process does not threaten the regional and/or multilateral liberalization processes.

4 DIAGONAL CUMULATION OF ROO

4.1 DIAGONAL CUMULATION IN THE "PAN EURO" SYSTEM

In this section we will analyze the Pan European Cumulation System (PECS) launched by the European Union (EU) in the late nineties together with the Pan European origin system, because this is so far the only system that successfully applies diagonal cumulation among its members and therefore, is key evidence for our research.

The Pan Euro origin system is a common set of RoO developed by the EU in 1997 to solve the problem of the *spaghetti bowl* of rules among EU and its trading partners in Central and Eastern European countries (CEFTA[46] and EFTA[47] respectively). The idea was to have only one set of RoO for all trading partners, and therefore simplifying the procedures and decreasing trading costs for involved firms.

Together with the Pan Euro, the EU introduced the PECS, a diagonal cumulation system among EU trading partners. In 2002 the EU extended the Pan Euro to the Southern Mediterranean countries. The system unified the RoO set for all members and allowed for diagonal cumulation among the EU, CEFTA, EFTA, the Baltic States and the Southern Mediterranean countries[48]. That is to say, it enables firms to import inputs originated in any of the member countries without loosing the preference of the final good. The European Economic Association Agreement (EEA) between the EU and EFTA also permits full cumulation.

However, the EU's agreements with extra regional partners is not a part of the Pan-Euro system, although the FTA EU-South Africa allows for diagonal cumulation. Aside from this, the RoO of the EU's Generalized System of Preferences (GSP) and the 2000 Cotonou Agreement with the African, Caribbean, and Pacific (ACP) developing countries are nearly identical to the Pan-Euro rules.

[46]CEFTA members: Albania, Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Serbia and UNMIK.
[47] EFTA members: Iceland, Liechtenstein, Norway, and Switzerland.
[48] Southern Mediterranean countries are the ones that have signed the Barcelona Declaration: Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Syria, Tunisia, and the Palestinian Authority of the West Bank and Gaza Strip.

The conditions to be able to participate in the PECS are that participating countries must have signed FTAs among them and the FTAs' RoO must be identical to the PECS rules. The purpose of these conditions is to avoid trade deflection[49]. This is an example of a type of hub and spokes origin regime in which the EU is the natural hub and the FTA partners are the spokes. In this scenario, the EU imposes its RoO structure to their partners and, in exchange, partners obtain market access to the EU. Therefore, the FTA partners do not negotiate and accept the EU origin norms.

According to Gasiorek, Augier and Tong (2007), the PECS is a natural experiment for studying the impact of the relaxation of rules of origin. Augier, Gasiorek and Lai-Tong (2004) used this natural experiment to estimate the impact of the introduction of the PECS. They used a methodology based on gravity models in a 5-year period of time and analyzed the impact on trade flows (in total goods, intermediate products and manufactured goods) of the introduction of the PECS on the countries over time. The authors found that the PECS was effective for increasing trade between spokes countries by between 7% and 22% and the trade decreased by 70% in the case of countries that are not part of the PECS system.

In Gasiorek, Augier and Tong (2007) a similar analysis was undertaken but in it the impact of the PECS is estimated at sectoral level using panel data with a difference in difference estimator. Results indicate that there was an increase in trade due to the introduction of the PECS from over 26% in the case of manufactured metal products to over 70% in the case of leather products. Authors found evidence that cumulation had a positive impact on trade flows and probably the RoO were blocking trade between the cumulating countries. They also found that there is a positive relationship between the level of the EU tariff and the degree of restrictiveness of the RoO.

[49] Different sets of RoO can determine that a product from country A can fulfil the origin conditions in country B but can not do so in country C, thus, if this product enters country C from A it has to pay a tariff but if it is decided that it should enter country C from B it does not have to pay any tariff. Firms will deflect trade in order to enter country C without paying the external tariff.

4.2 PROPOSAL FOR DIAGONAL CUMULATION IN SOUTH AMERICA

At present, cumulation strategies are being under discussion in regional meetings and the general opinion is that the application of a more sophisticated cumulation type in the Americas is an imminent process[50]. The question is under which umbrella the cumulation will take place. The available umbrellas are the NAFTA, the EU or the LAIA families of FTAs. From our point of view, the LAIA family provides the opportunity to negotiate Latin American RoO instead of accepting rules imposed from the EU or USA. In this regard, we could enforce productive complementarity strategies by defining a proper cumulation system among SA countries. This could be a way of fostering regional value chains and reaching development. Therefore, the best strategy for us is to try to enforce cumulation among LAIA countries first.

We believe that at present, diagonal is easier to obtain than full cumulation. Therefore, we will focus only on reaching the first type of accumulate origin. This cumulation should begin at first with a group of countries that have signed FTAs among them, have similar RoO structures and a floor of liberalized tariff schedules.

Convergence of norms and cumulation among LAIA countries have been extensively studied by the LAIA and the IADB (see chapter III). However, while analyzing the RoO structures within LAIA countries, it is found that Mexico's rules of origin follow the NAFTA style that is different from the LAIA style shown by the majority of LAIA countries. The NAFTA style of origin norms is very complex and rigid[51]. Due to this fact, we decided not to consider Mexico in this analysis, because we believe that the negotiation process between this country and the rest of LAIA would be very complex and slow taking into account the important differences in the RoO structures.

Following the theory about cumulation and the empirical evidence, we consider that diagonal cumulation should start among the LAIA group of countries that have more similarities in rules of origin. Thus, SA countries[52] are in a better position in the short run to be able to negotiate and successfully conclude a convergence of norms and a diagonal cumulation strategy.

[50] For instance, LAIA and IADB Cumulation Workshop, September, 2009, Montevideo, Uruguay.
[51] See Chapter III: i.
[52] We consider Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela.

These countries, as was described in chapter III, have similar RoO patterns and are following a tariff reduction schedule that allows us to expect an almost complete liberalization of trade by 2016 in the majority of products. Even though by 2014 the liberalization in some products will already be complete, there already is a baseline of products and countries for applying diagonal cumulation[53]. Moreover, these countries are members of an integration agreement, the SACN (currently UNASUR[54]), with potential for leading this process. Along these lines, it was established in chapter III that the SACN required AC, MERCOSUR and LAIA secretariats to work on the convergence of norms in the region.

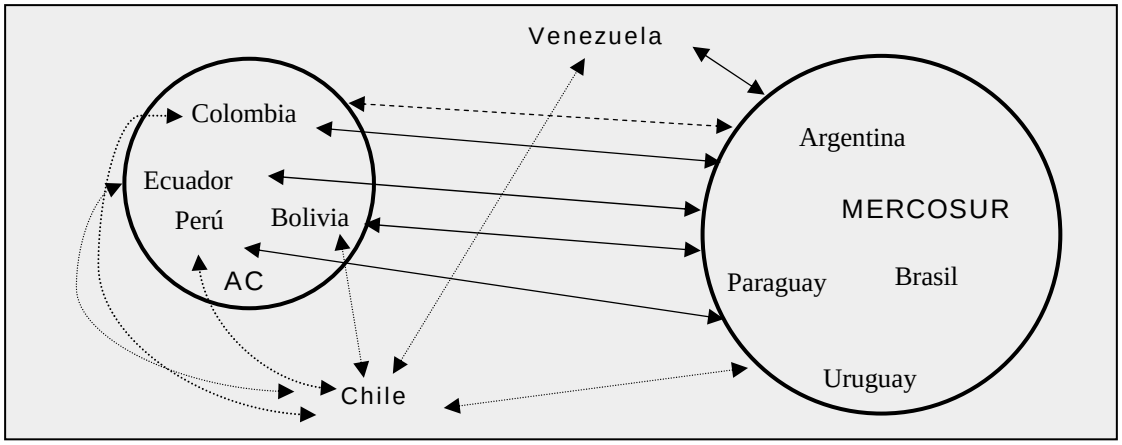
In the origin norms set forth in SA agreements there is the possibility of diagonal cumulation. Nevertheless, up to this moment, there has not been any approach in practice to apply diagonal cumulation in the region. Moreover, only the imperfect customs union MERCOSUR has used the regional cumulation principle for facilitating trade among RTA members. However, the system only can be implemented after certain conditions can be accomplished.

Regarding the general conditions for achieving diagonal cumulation, SA countries have already signed 11 PTAs with similar style of RoO but they have to work in the convergence of these rules and in the liberalization of tariffs following the schedules already negotiated. An illustration of the PTAs signed by SA countries is shown in figure 7.

In SA there are 11 PTAs involving integration agreements and countries within the region[55] and more than 20 RoO protocols that regulate trade among them. The reason for the difference between the PTAs and the RoO annexes lies in the fact that in the three FTAs that link MERCOSUR with AC countries, the origin requirements were negotiated bilaterally[56]. In figure 8 we have an illustration of this South American *spaghetti bowl* of RoO.

[53] By 2014 the AC, MERCOSUR, Bolivia-MERCOSUR FTA and Chile-MERCOSUR FTA agreements will be fully liberalized and only a few products will be exempted in each (see Table 1).
[54] See definition in page 21.
[55] CAN integration agreement and LAIA agreements: MERCOSUR (ACE18), Bolivia-MERCOSUR (ACE36), Colombia/ Ecuador/Venezuela-MERCOSUR (ACE59), Peru-MERCOSUR (ACE58), Chile-MERCOSUR (ACE35), Chile-Colombia (ACE24), Chile-Peru (ACE38), Chile-Bolivia (ACE22), Chile-Ecuador (ACE32), Chile-Venezuela (ACE23).
[56] Cornejo and Harris (2007).

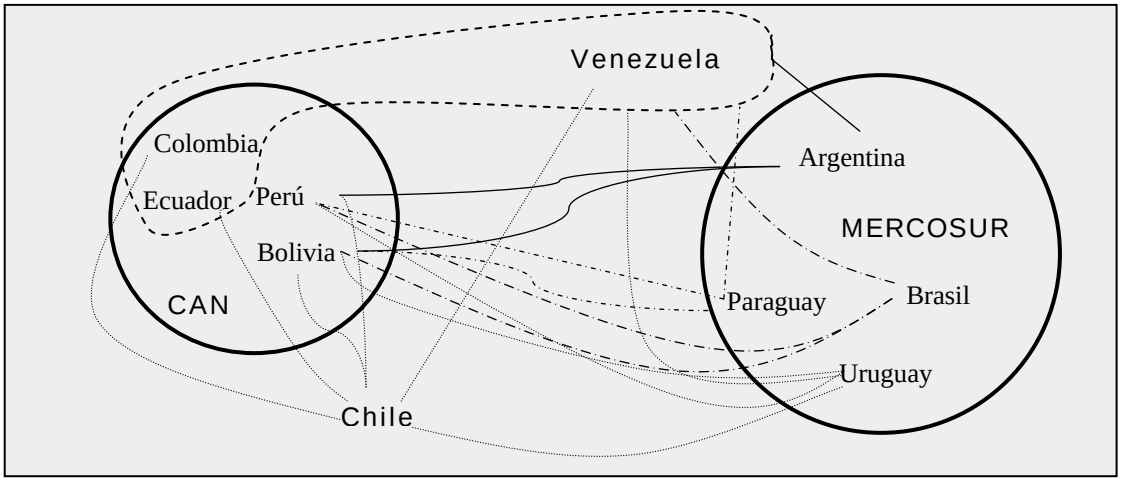
Figure 7: PTAs* in South America



** PTAs: AC, MERCOSUR, Bolivia-MERCOSUR FTA, Colombia/ Ecuador/Venezuela-MERCOSUR FTA, Peru-MERCOSUR, Chile-MERCOSUR, Chile-Colombia, Chile-Peru, Chile-Bolivia, Chile-Ecuador, Chile-Venezuela.*

In South America, the FTAs are clearly clustered around MERCOSUR (see figures 7 and 8), and we can see a type of hub and spokes structure like in the case of the EU with its trading partners. Besides, due to the size of its economies, the trade and population, MERCOSUR is the main player and thus the actor with more bargaining power in the region[57].

Figure 8: RoO spaghetti bowl in South America



Nevertheless, as mentioned above, in this structure of hub and spokes there is not a single set of RoO but a spaghetti bowl. Therefore, a convergence of RoO in the region is necessary and crucial. Regarding this convergence process, it seems unfeasible to think of MERCOSUR

[57] MERCOSUR is the biggest RTA in SA. It represents more than 50% of the total size, population, GDP and trade levels in SA (ECLAC, 2006).

imposing a specific origin regime on all other SA nations[58]. At first there would be political rejection regarding the imposition of RoO from one member to the other, because this would be a completely opposite situation from LAIA Free Trade Space spirit. Besides, some countries like Chile have broad origin negotiation experience and would be reluctant to accept an origin regime imposed from another country or region. In this sense, a better strategy to follow should be based on a single RoO set negotiated among SA countries that could be named as LAIA and IADB do a "General Origin Regime (GOR)"

Cornejo and Harris (2007) designed a methodology for convergence of the *spaghetti bowl* of RoO in the LAIA scheme. They indicated that LAIA countries should negotiate and implement a GOR for applying diagonal cumulation. According to them this negotiation on RoO should not be very difficult because there have been previous discussions and coincidences even in the Free Trade Area of the Americas, where public documents regarding origin showed agreement in many points. The paper discusses the following methodological lines: extended cumulation, methods and modalities of negotiation, implementation of the GOR and coordination with bilateral RoO, and finally, flexibility for the treatment of sensitive products.

Three elements are necessary for extended cumulation to be in force. There should be agreement triangles among the input supplier, the exporting country of the final good and its importer. Besides, these countries must have zero tariffs on both the input and the final product. And finally, the countries involved should have negotiated under the GOR the RoO of the input to be cumulated and the final product. This is called variable geometry. According to Cornejo and Harris (ibid), "criteria will be developed for each product to identify from which convergence member countries there can be cumulation, which countries will be excluded and what will be the conditions for cumulation. These criteria set up connections that vary by final product, exporting country, importing country and input". Therefore, there could be many different combinations for diagonal cumulation among SA countries for different sets of products and inputs.

At first the GOR won't block the other RoO regimes in force in the region, so countries can choose which one they wish to use, but the only system that will allow for diagonal

[58] Such as the EU case.

cumulation among the preferential area members is the GOR. The coexistence of several regimes is though to be temporary and part of a transition period for producers to be able to adapt to the new origin regime.

Regarding cumulation, MERCOSUR is the PTA with the most precise and well developed total cumulation principle in SA[59] and it allows for diagonal cumulation of AC materials, therefore it seems clear that any SA negotiation on this subject should be based on MERCOSUR norms. In order to be fair with MERCOSUR members, in particular the smallest countries Paraguay and Uruguay, there should be a reciprocal rule of diagonal cumulation of AC materials for a final product produced in MERCOSUR and exported to the AC region.

There are certain issues to be discussed and solved in order to reach a real convergence of origin norms and a feasible diagonal cumulation, such as defining which will be the certification and verification authorities for these operations and how these authorities will work, which will be the authorities for analysing the disputes and sanctions to apply when a member does not comply with the rules, among others. These problems are directly correlated with rises in production costs and decreases in competitiveness for producers.

Nevertheless, if negotiations of a GOR for SA countries is not feasible or it becomes an extremely long process, another possibility for flexibilizing RoO and getting closer to a convergence of norms for reaching extended cumulation is the one stated by Gasiorek, Augier and Tong (2007). They indicated first that PTAs should switch to value-added RoO regimes[60], second that they should use a value-added tariff rule[61] in determining tariffs to be levied and third RoO regimes should introduce full instead of diagonal cumulation, so countries would not need to have identical RoO and to have signed PTAs among them. In this case, the cumulation would be full and not diagonal. Needless to say, this strategy seems to be more unfeasible than the negotiation of a GOR because it implies a complete change in the RoO regimes of countries towards value-added rules and the introduction of a value-added

[59] Magariños (2007).
[60] The authors consider that for a more flexible system and a system that allows for multilateral cumulation the rules to apply should be value added rules. Value added rules are the ones with higher costs but they avoid the problem of arbitrariness in other types of rules and they can be varied and renegotiated. “In the same way that successive tariff cutting rounds have reduced tariffs, with a value-content rule it is possible to negotiate over the thresholds”.
[61] The value-added tariff rule was proposed by Lloyd (1993) and implies that the tariff be levied in proportion to the amount of non-originating inputs.

tariff rule and full instead of diagonal cumulation. Therefore, these suggestions need higher compromise levels than the negotiation of a GOR.

4.3 TRADE FLOWS AMONG SA COUNTRIES

The current trade among SA countries is low; amounting to approximately 25% of total trade (see Table 3). This trend has been permanent in the region, in this sense the research carried out by the AC, ALADI, and MERCOSUR secretariats (2006) indicated almost the same levels of trade within SA in the years 1995, 1999 and 2004 (23%, 23% and 27% respectively). This fact can be explained by several hypotheses, for instance, one could be the lack of interesting trading products in the region, or the existence of non-trade barriers blocking trade and another one could be the overlapping of different RoO. As exposed above, the overlapping of RoO among FTAs can contribute to increase trade costs and to avoid trade within the region.

Table 2: Import flows according to sources: year 2008

Importer	Source of imports: values in thousand dollars CIF						
	MERCOSUR	AC	SA**	% total trade	RW	% total trade	Total
Argentina	19.997.362	---	21.536.262	37,70	35.582.358	62,30	57.118.620
Brazil	15.591.951	---	25.551.666	14,01	156.853.237	85,99	182.404.903
Paraguay	3.822.990	---	4.382.901	48,60	4.634.617	51,40	9.017.518
Uruguay	3.919.244	---	4.617.060	51,69	4.315.593	48,31	8.932.653
Bolivia	---	736.357	2.784.149	55,92	2.194.659	44,08	4.978.808
Colombia	---	2.962.946	6.958.398	17,57	32.645.363	82,43	39.603.761
Ecuador	---	4.783.496	6.894.024	37,08	11.696.397	62,92	18.590.421
Perú	---	3.622.888	9.093.001	30,43	20.783.857	69,57	29.876.858
Venezuela*	---	8.764.254	14.447.454	31,26	31.775.541	68,74	46.222.995
Chile	---	---	16.666.911	29,49	39.847.000	70,51	56.513.911
Total	---	---	112.931.826	24,92	340.328.622	75,08	453.260.448

Source: Author calculations on the basis of LAIA and COMTRADE databases.
** For this analysis Venezuela is considered as a member of the AC.*
*** SA includes the 10 countries described in the first column of the table.*

Nevertheless, not all SA countries have the same performance, and clear groups of countries with very different behaviour in their import structures can be distinguished. On the one hand, the biggest country of SA, Brazil, is the main source of imports from within the region for SA

countries. Brazil is the source of more than 25% of SA countries imports[62]. However, this country imports from SA only the 14% of its total imports. While this is a low percentage, in nominal values it represents the highest import level of a SA country from within the region (25.5 thousand million dollars). Colombia behaves more or less like Brazil, with imports of 14% from within the region.

Then we have another group of countries with imports from within the region of around 30% (Argentina, Ecuador, Peru, Venezuela and Chile) and a last group of countries whose imports from intra region amounts to more than 40% of total imports level (Paraguay, Uruguay and Bolivia). This group is formed by the smallest SA countries and probably the most dependent on intra regional trade.

To sum up, with these data it is not possible to determine which the intermediate inputs import levels among SA countries are, but we can estimate these numbers. We can also assume that the countries most dependent on intermediate inputs from within the region are the smallest countries and the less dependent will probably be Brazil. Anyway, Brazil is by far the most important source of imports for SA countries and therefore we assume this country is as well the main source of inputs for the region.

We cannot calculate the intermediate inputs flows from within the region in this paper (a methodology for calculating this will be developed in the next sub section), but when analyzing the theory on RoO and the empirical evidence from the PECS we can assume that taking measures for adding leniency to RoO structures will make it more attractive for regional firms to trade within the region. Finally, we can predict that more flexible rules of origin besides benefiting trade flows among preferential area members will make the region more attractive to foreign investors and, as a consequence, will foster investment flows from abroad.

Table 3 presents a description of the two main products imported and exported by SA countries in 2008, with the idea of having an approach to possible links between trading preferences among countries. The table shows that the main imported products are basically primary products and particularly petroleum oil. Argentina, Paraguay and Venezuela also

[62] Ecuador is the exception because only 13% of its imports are provided by Brazil.

import non-traditional products (vehicles, machines, phones, etc.). Regarding exports, these are also based on primary goods, basically gas, oil, metals, soybeans and meat.

Table 3: Main products traded by SA countries (year 2008)

	Top imported products	Top exported products
Argentina	motor-vehicles and parts refined petroleum oil	soybean oil soybean residues
Bolivia	refined petroleum oil iron bars	natural gas zinc ores
Brazil	crude petroleum oil refined petroleum oil	crude petroleum oil iron ores
Chile	crude petroleum oil refined petroleum oil	refined copper copper ores
Colombia	refined petroleum oil yellow maize	crude petroleum oil coal
Ecuador	refined petroleum oil coal gases	crude petroleum oil bananas
Paraguay	refined petroleum oil automatic data processing machines	soybeans soybean residues
Peru	crude petroleum oil refined petroleum oil	gold copper ores
Uruguay	crude petroleum oil refined petroleum oil	Meat of bovine animals, frozen soybeans
Venezuela	phones pharmaceutical products	Ferrous products iron ores

Source: Based on LAIA and COMTRADE databases.

4.3.1 Tool for studying inputs imported within the region

For analyzing the intermediate products traded within the region we propose a methodology based on Lalanne and Vaillant (2007). The data sources for each of the 10 countries of the region studied will be input-output imports matrixes[63] together with imports data desegregated by product and country source from each one of the countries studied here[64].

This methodology will be useful for discovering which regional products these countries use as inputs in their production processes and the relative weight of intermediate inputs from within the region and from outside the region. Therefore, we could have evidence of the

[63] The Global Trade Analysis Project (GTAP) has import demand input output (i-o) matrixes from South American countries with the same aggregation level, 57 sectors.
[64] It should be noted Take into account that the nomenclature of imports data from each country is based on Harmonized System (HS) and the nomenclature of GTAP i-o matrixes is based on GTAP classification. Therefore, a correlation between HS and GTAP classifications is necessary.

weight of regional inputs compared with inputs from outside the region. Up to now, there is no research on this issue, so it could be an important contribution for the academia. This work implies a great effort in data processing and is out of the scope of this paper, thus, it will not be possible to carry out this analysis at this point.

Regarding methodological aspects, we will use a sector-level import matrix for a specific period of time (the most recent year, the best). We will group imports of each of the region countries according to the sectors involved and their providers (intraregional or extra regional). Then we will merge the sectors' information of the import matrixes with the sector information of the i-o matrixes. Finally, after processing these data we will have information of the intermediate inputs´ imports from within the region and outside the region desegregated by country.

5 CONCLUSION

In this paper we define what RoO are and its economic effects, we describe the main RoO types and the options for adding leniency to these rules by means of using the diagonal cumulation principle like the EU does. Nowadays, diagonal cumulation has been analyzed in different trade agreements models (for instance NAFTA or LAIA) and the use of this practice among FTAs families of one or another style in order to flexibilize origin rules is imminent.

We believe South American countries have to take advantage of this opportunity and begin defining a strategy for cumulating origin norms among countries. Diagonal cumulation requires that some conditions be met before it can be applied. These are: first, preferential area members must have signed FTAs among them; second, there has to be only one RoO regime; and third, countries must have zero tariffs on both the input and the final product. The first condition is already fulfilled in SA, but not the second nor the third. Therefore, it is necessary to work on implementing a single RoO regime for the region that could be called General Origin Regime as proposed by Cornejo and Harris (2007).

In this regard, SA countries now have the chance of negotiating and defining their own set of rules of origin. In this negotiation we think MERCOSUR will be the leading PTA, due to the fact that it is the main player in the region. Therefore, MERCOSUR can be seen as the hub of SA surrounded by the AC and the rest of SA countries (spokes). Regarding cumulation, MERCOSUR has developed a precise set of norms regulating this principle, so any SA negotiation on this subject should be based on MERCOSUR norms.

The use of a GOR could help in reducing the administrative costs regarding origin. Besides, enforcing a diagonal cumulation policy will bring leniency to RoO and thus will increase the use of regional inputs and foster intra regional trade. Furthermore, it could be a way of promoting the growth of *multi-Latin* firms and the development of regional production chains. Besides, cumulation can foster the trade of the smallest trading partners within SA because they will have a broader set of inputs suppliers from within the region and will benefit from economies of scale.

It was not possible to calculate the intermediate inputs flows from within the region in this paper in order to know exactly how important RoO regimes in force in the region are for SA firms and how much potential there is for increasing inputs trade exchange among SA countries. However, a methodology for studying this was defined and we plan on working on this issue in the future.

Upon analyzing the theory on RoO and the empirical evidence from the PECS we estimate that taking measures for adding leniency to RoO structures will make it more attractive for regional firms to import from within the region. Finally, we can predict that more flexible rules of origin aside from benefiting trade flows among preferential area members will make the region more attractive to foreign investors and, as a consequence will foster investment flows from abroad.

Many things require further study in connection with this issue. For instance, we plan to explore which could be the consequences, especially for the smallest countries, of implementing a diagonal cumulation system in South American PTAs in the future. Considering that this system has not been used in SA so far, we will approach this problem using simulations in a partial and general equilibrium models' framework. There are a number of empirical papers that deal with these issues using panel data techniques and simulation with partial and general equilibrium models' framework[65].

[65] For instance: Cadot, O., de Melo, J., Estevadeordal, A., Eisenmann, A. and Tumurchudur, B. (2002); Georges, P. (2007); Fugazza, M and Maur, J. (2008).

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