Rules of Origin: A World Map[*]

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April 2003
(Preliminary Draft)

Paper presented at the seminar "Regional Trade Agreements in Comparative Perspective: Latin America and the Caribbean and Asia-Pacific" organized by the Pacific Economic Cooperation Council (PECC) and the Latin America/Caribbean and Asia/Pacific Economic and Business Association (LAEBA), an initiative of the Inter-American Development Bank and the Asian Development Bank Institute.
Washington, D.C., April 22-23, 2003

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Introduction

The purpose of this paper is three-fold: (1) to provide an overview of the objectives, types, and effects of rules of origin (RoO) used around the world; (2) to present a comparative analysis of the RoO regimes in some of the main preferential trading arrangements (PTAs) in Europe, the Americas, Asia-Pacific, Africa, and the Middle East; and (3) to measure the degree of restrictiveness of the product-specific RoO employed in the various RoO regimes.

The first section of this paper discusses the purposes of RoO, lays out the different types of product-specific and general RoO, and presents the latest empirical evidence on the effects of RoO. The second section examines the prevalence of the different types of RoO in more than eighty integration schemes in the world, and compares the relative restrictiveness of the various product-specific RoO within and across RoO regimes.

I. Rules of Origin in FTAs: A World Map

A. Objectives of RoO

There are two types of rules of origin, non-preferential and preferential RoO. Non-preferential RoO are used to distinguish foreign from domestic products in establishing anti-dumping and countervailing duties, safeguard measures, origin marking requirements, and/or discriminatory quantitative restrictions or tariff quotas, as well as in the context of government procurement. Preferential RoO define the conditions under which the importing country will regard a product as originating in an exporting country that receives preferential treatment from the importing country. PTAs, in effect, employ RoO to determine whether a good qualifies for preferential treatment when exported from one member state to another.

The economic justification for preferential RoO is to curb trade deflection—to avoid products from non-PTA members from being transshipped through a low-tariff PTA partner to a high-tariff one. As such, RoO are an inherent feature of free trade agreements (FTAs) where the member states' external tariffs diverge and/or where the members wish to retain their individual tariff policies vis-à-vis the rest of the world (ROW). RoO would be unnecessary in a customs union (CU) with a common external tariff (CET) that covered the whole tariff universe. However, in practice, RoO are widely used in CUs, as well, either as a transitory tool in the process of moving toward the CET, such as in Mercosur, or as a more permanent means of covering product categories where reaching agreement on a CET is difficult, for instance due to large tariff differentials between the member countries. RoO are a feature of virtually all PTAs around the world; the Asia-Pacific Cooperation (APEC) forum is a prominent exception, with its members employing their respective domestic RoO (OECD 2002). APEC is based on a principle of open regionalism—extending tariff preferences on an MFN basis—which renders the need for preferential RoO obsolete.

Since RoO can serve as an effective means to deter transshipment, they can give rise to uses beyond and unrelated to the efforts to avert trade deflection. Indeed, with the lowering of tariff and non-tariff barriers and the concomitant proliferation of PTAs around the world, RoO have arguably become a widespread and potentially powerful trade policy instrument.[1] Analysts engaged in the nascent but lively debate on RoO are increasingly picking up on the political economy of RoO (Krueger 1993; Krishna and Krueger 1995; Jensen-Moran 1996; Garay and Estevadeordal 1996; Stephenson 1996; Scollay 1996; Ju and Krishna 1998, 2002; Appiah 1999; Falvey and Reed 2000; Estevadeordal 2000; Duttagupta 2000; Duttagupta and Panagariya 2000; Lloyd 1996, 2001a, 2001b; Rodriguez 2001; Flatters 2002; Garay and Cornejo 2002; Hirsch 2002; Krishna 2002). Most prominently, RoO can be employed to favor intra-FTA industry linkages over those between the FTA and the ROW, and, as such, to indirectly protect FTA-based input producers vis-à-vis their extra-FTA rivals (Krueger 1993; Krishna and Krueger 1995). Stringent RoO can compel intra-FTA firms with low-cost extra-FTA supply sources to turn to higher-cost inputs produced within the FTA in order to qualify for the PTA-conferred preferential treatment for their final products, particularly in sectors where preferential margins are wide. As such, RoO liken a tariff on the intermediate product levied 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 for the exports of its own intermediate products (Krueger 1993; Krishna and Krueger 1995). In an en econometric study of the determinants of the restrictiveness of the RoO in the North American Free Trade Agreement (NAFTA), Estevadeordal (2000) shows that the same political economy factors that drive tariff protection also drive RoO. Flatters (2002) reaches similar conclusions in an analysis of the Southern African Development Community RoO, as do Estevadeordal and Suominen (2003) in a study of European Union's extra-regional FTAs with South Africa, Mexico, and Chile.

If RoO introduce a price wedge in the intermediate market, they could be expected to engender opposition by downstream producers intent on retaining their extra-PTA low-cost supply sources while qualifying for the PTA-conferred preferential treatment. However, scholarly literature offers two theoretical reasons why downstream producers may accept or even favor stringent RoO. First, RoO may simply be the price that downstream producers have to pay for the PTA: despite risking costly trade diversion, restrictive RoO can help placate protectionist sectors so as to render PTA formation politically feasible (Duttagupta 2000). Second, downstream producers can draw contingent benefits from stringent RoO, and, as such, be willing to shoulder the heightened production costs. For instance, should the linkages between different stages of production in the industry be tight, extra-PTA final goods producers would likely be hard-pressed to locate approriate components witin the PTA and remain competitive vis-à-vis the intra-PTA producers in the PTA market. Even if extra-PTA firms were to locate in the PTA market via tariff-jumping-like "RoO-jumping", discrimination would continue until the regional sourcing met the RoO (Graham and Wilkie 1998).

[1] That governments forego negotiating simple regional value added rules, and, rather, engage in prolonged, contentious bargaining over highly complex and different types of RoO suggests that RoO play a role beyond resolving the trade deflection problem.

RoO can thus be used to meet the political economy goal of extending protection to both intra-PTA input and final goods producers. Furthermore, given that RoO hold the potential of increasing local sourcing and affecting the locational decisions of investors, governments can use RoO to encourage investment in certain strategic or high-value sectors—for instance in order to create lucrative jobs (Jensen-Moran 1996; Hirsch 2002).

B. Types of RoO

Both non-preferential and preferential RoO regimes have two dimensions: sectoral, product-specific RoO, and general, regime-wide RoO. We discuss each in turn.

i. Product-Specific RoO: Five Main Components

The Kyoto Convention recognizes two basic criteria to determine origin: wholly obtained or produced, and substantial transformation.[2] The wholly obtained or produced-category applies only to one PTA member, and asks whether the commodities and related products have been entirely grown, harvested, or extracted from the soil in the territory of that member, or manufactured there from any of these products. The rule of origin is met through not using any second-country components or materials. Most countries apply this strict and precise definition.

The substantial transformation-criterion is more complex, involving four main components that can be used as stand-alone or in combinations with each other. The precision with which these components define RoO in PTAs today contrasts sharply with the vagueness of the substantial transformation-criterion as used by the United States since 1908 through the inception of the Canada-US Free Trade Agreement (CUSFTA) and, subsequently, NAFTA (Reyna 1995: 7).[3]

The first component of the substantial transformation criterion is a change in tariff classification (CTC) between the manufactured good and the inputs from extra-PTA parties used in the productive process. The CTC may require the product to alter its chapter (2 digits under the Harmonized System), heading (4 digits), sub-heading (6 digits) or item (8-10 digits) in the exporting country.

The second criterion is an exception attached to a particular CTC (ECTC). ECTC generally prohibits the use of non-originating materials from a certain sub-heading, heading, or chapter.

The third criterion is value content (VC), which requires the product to acquire a certain minimum local value in the exporting country (or, alternatively, to remain below a certain

[2] The Revised Kyoto Convention is an international instrument adopted by the World Customs Organization (WCO) to standardize and harmonize customs policies and procedures around the world. The WCO adopted the original Convention in 1974. The revised version was adopted in June 1999.

[3] The old criterion basically required the emergence of a "new and different article" from the manufacturing process applied to the original article. It was, however, much-criticized for allowing—and indeed requiring—subjective and case-by-case determinations of origin (Reyna 1995: 7).

ceiling percentage of value originating in the non-member countries). The value content can be expressed in three main ways: as the minimum percentage of value that must have been added in the exporting country (domestic or regional value content, RVC); as the difference between the value of the final good and the costs of the imported inputs (import content, MC); or as the value of parts (VP), whereby originating status is granted for products meeting a minimum percentage of originating parts out of the total.

The fourth RoO component is technical requirement (TECH), which requires the product to undergo certain manufacturing operations in the originating country. TECH requires or prohibits the use certain input(s) and/or the realization of certain process(es) in the production of the good.[4] It is a particularly prominent feature in RoO governing textile products.

Table 1 summarizes the frequency of the various product-specific criteria in 93 PTAs—6 customs unions and 87 FTAs—around the world. The change of heading-requirement is the staple of PTAs. It is used either as stand-alone or in tandem with other RoO criteria. Also frequently used are the import content (usually ranging from 30 to 60 percent), value of parts, and technical requirements. Adding analytical complexity albeit administrative flexibility is that many RoO regimes provide two alternative RoO for a given product, such as a change of chapter or, alternatively, a change of heading + RVC.

Table 1 – Frequency of Various Product-Specific Criteria

PTAs	Criterion				
	CTH	VALUE CONTENT			TECH
		MC	RVC	VP	
Customs unions (6)	6	2 (40-60%)	2 (35-60%)	-	-
FTAs and other PTAs (87)	83	68 (30-60%)	7 (25-65%)	67	74

Source: World Trade Organization (2002).

ii. *Regime-Wide RoO*

Besides product-specific RoO, RoO regimes vary by the types of general RoO they employ—including in the degree of de minimis, the roll-up principle, and the type of cumulation.

First, most PTAs contain a *de minimis* rule, which allows for a specified maximum percentage of non-originating materials to be used without affecting origin. The *de minimis* rule inserts leniency in the CTC or TECH criteria by making it easier for products with non-originating inputs to qualify.

[4] TECH can be highly discretional given that lack of classification tools to objectively guarantee sufficient transformation in the production of the good.

Second, the roll-up or absorption principle allows materials that have acquired origin by meeting specific processing requirements to be considered originating when used as input in a subsequent transformation. That is, when roll-up is allowed, non-originating materials are not taken into account in the calculation of the value-added of the subsequent transformation.

Third, cumulation allows producers of one PTA member to use non-originating materials from another PTA member (or other members) without losing the preferential status of the final product. There are three types of cumulation. Bilateral cumulation operates between the two PTA partners and permits them to use products that originate in the other PTA partner as if they were their own when seeking to qualify for preferential treatment. Diagonal cumulation means that countries tied by the same set of preferential origin rules can use products that originate in any part of the area as if they originated in the exporting country. Full cumulation extends diagonal cumulation. It provides that countries tied by the same set of preferential origin rules among each other can use goods produced in any part of the area, even if these were not originating products. All the processing done in the zone is then taken into account as if it had taken place in the final country of manufacture.[5] As such, diagonal and full cumulation can notably expand the geographical and product coverage of a RoO regime. Table 2 illustrates the frequency of general RoO provisions around the world.

Table 2 – Frequency of General RoO Provisions

PTAs	DE MINIMIS	TYPE OF CUMULATION			ROLL-UP
		Bilateral	Diagonal	Full	
Customs unions (6)	3	6	0	0	2
FTAs and other PTAs (87)	85	87	58	8	81

Source: World Trade Organization (2002).

Whereas de minimis, roll-up, and cumulation allow for leniency in the application of RoO, there are three provisions that may have the opposite effect—increase the stringency of RoO.[6]

First, most PTAs contain a separate list indicating the operations that are in all circumstances considered insufficient to confer origin, such as preservation during transport and storage, as well as simple operations of cleaning, sorting, painting, packaging, assembling, and marking and labeling.

[5] In bilateral cumulation, the use of the partner country components is favored; in diagonal cumulation, all the beneficiary trading partners of the cumulation area are favored. While diagonal cumulation and, even more so, bilateral cumulation, promote the use of materials originating within the FTA, full cumulation is more liberal than diagonal cumulation by allowing a greater use of third-country materials. It is, however, rarely used.

[6] To be sure, some countries argue that a system of cumulation merely introduces another layer of discrimination, since non-participating countries are not eligible for its benefits.

Second, many PTAs prohibit duty drawback—preclude the refunding of tariffs on non-originating inputs that are subsequently included in a final product exported to a PTA partner market. Many developing countries in particular employ drawback in order to attract investment and to encourage exports; however, drawback in the context of a PTA is viewed as providing a cost advantage to the PTA-based producers who gear their final goods to export over producers selling their final good in the domestic market.[7] The end of duty drawback entails an increase in the cost of non-originating components for PTA-based final goods producers. As such, the end of drawback in the presence of cumulation may encourage intra-PTA producers to shift to suppliers in the cumulation area (WTO 2002).

Third, PTAs may impose high administrative costs stemming from the method of certifying the origin of goods. The main models of certification employed in PTAs are self-certification by exporters, certification by an industry umbrella group, and certification by the exporting country government—or various combinations of the three. The more numerous the bureaucratic hurdles and the higher the costs for an exporter to obtain an origin certificate, the lower the incentives to seek PTA-conferred preferential treatment.

C. Effects of RoO

The complexity and stringency of RoO employed in PTAs has given rise to concerns over the diversionary effects that RoO may have on trade and investment flows. More generally, the often dauntingly complex RoO have led analysts to question the extent to which PTAs can create trade, boost welfare, and serve as stepping-stones in the march toward global free trade. From a legal standpoint, preferential RoO are feared to breach Article XXIV of the General Agreements on Tariffs and Trade (GATT), which in paragraph 8(b) defines a free trade area as "a group of two or more customs territories in which the duties and *other restrictive regulations of commerce*...are eliminated on *substantially all* the trade between the constituent territories in products originating in such territories."[8]

i. The Costs of RoO

RoO can affect trade by inflicting two types of costs—production and administrative costs. Both of these costs can introduce a protectionist bias. Production costs arise from the various technical criteria imposed by the RoO regime. In theoretical terms, a RoO less PTA could be expected to result in dramatic changes in trade patterns due to rise in transshipment through the country with the lowest tariff: without RoO, a PTA would be highly liberalizing given that the lowest tariff would apply to each import category (Krishna 2002). However, in the presence of stringent RoO, the potential for a PTA to boost trade between the members will likely be moderated by the rise in the cost of inputs for the intra-PTA final goods producers—which decreases final goods production and

[7] Cadot, de Melo and Olarreaga (2001) show that duty drawback may have a protectionist bias for reducing the interest of producers to lobby against protection of intermediate products.
[8] Italics added.

lowers the final goods' producers derived demand for intra-PTA inputs, undercutting intra-PTA trade in both inputs and final goods (Ju and Krishna 1998). The costs of production may be compounded by the fact that RoO are formulated on the basis of the Harmonized System, which was not designed with a consideration for the determination of origin. For instance, a product that undergoes a substantial transformation in practice may still fail to alter its tariff classification, and hence fail to meet the CTC test.

The administrative costs stem from the procedures required for ascertaining compliance with the RoO. These involve bookkeeping costs—the costs for the exporter of certifying the origin of a good prior to its export to the territory of another PTA member—and the costs to the partner country customs of verifying the origin of goods. The different certification mechanisms impose divergent costs on firms and governments alike, particularly when countries belong to several PTAs with different types of RoO. These costs are hardly trivial. In Brazil, for instance, the cost of obtaining certification for a single shipment from a certifying agency is estimated to range between US$6 and US$20; in Chile, the cost is US$7. Koskinen (1983) estimates the administrative costs for Finnish exporters under the European Community-EFTA FTA at 1.4 percent to 5.7 percent of the value of export transactions. In another pioneering study, Herin (1986) puts the cost of obtaining the appropriate documentation to meet the RoO at three to five percent of the FOB value of the good in the context of EFTA. Holmes and Shephard (1983) find the average export transaction EFTA to the EC to require 35 documents and 360 copies.[9] In a recent study, Cadot et al. (2002) disentangle NAFTA's non-RoO related and RoO-related administrative costs, finding the latter to approximate two percent of Mexican exports to the US market.

Producers in sectors governed by RoO that are based on the VC criterion face the added administrative complexity of fluctuations in exchange rates and changes in production costs. Besides increasing unpredictability, changes in relative prices complicate the verification of origin by customs, and may give rise to subjective administrative discretion on the part of the importing country customs. The costs of RoO in particularly on goods produced in multiple countries has led Lloyd (2001a) to recommend a value-added tariff in lieu of RoO—a tariff whose base is not the price of the imported article but rather the proportion of the value added outside the area.

ii. Impact on Trade and Investment Flows

Encouraging the use of intra-PTA inputs at the expense of extra-PTA ones even if the latter were cheaper, restrictive RoO can result in trade diversion. This is a concern particularly for small countries whose producers have grown to depend on supply sources beyond their domestic market (and outside the future PTA area) simply due to the lack of domestic supply of inputs. However, when their restrictiveness rises further, RoO can constrain intra-PTA trade altogether. With the production and administrative costs imposed by RoO rising to unsustainably high levels, producers of the final good would rather import their inputs from the ROW and sell their output at their home market than produce to the PTA partner's market at high input costs. Alternatively, final goods

[9] Quoted in Herin (1986).

producers may act as producers in the ROW do—export their products to the PTA partner by paying the MFN tariff and hence foregoing the costs of meeting the RoO. To be sure, the higher the MFN tariff, the greater the willingness of firms to comply with the RoO, including to shift to intra-PTA inputs and furnish the certifying documentation.

Besides the short-run trade effects, RoO may in the longer-run encourage RoO-jumping investment, whereby extra-PTA producers locate plants within a PTA region in order to satisfy the RoO. If this occurs even when the PTA region was not economically the most optimal investment location, RoO can engender investment diversion. Moreover, RoO can produce investment diversion within the PTA area. For one, should final goods producers be hard-pressed to locate approriate components in the PTA area and remain competitive, they may simply choose to locate to the territory of the largest PTA market and the one with the lowest external tariffs—such as the United States in the context of NAFTA—and continue importing third-country inputs required for the final product.[10] Two, producers located in the PTA member with the lowest production costs can be placed in a disadvantage when the RoO are based on RVC, which is easier to meet in PTA members with higher production costs. As such, RoO may encourage investment to a large hub country that may well be an inefficient producer—and perpetuate it given the agglomeration effects of foreign direct investment. Rodriguez (2001) shows formally that RoO can lead to distortions in production structures within the PTA area.

iii. Empirical Evidence

The potential effects of restrictive RoO have three immediate implications to the theoretical debate over the potential trade effects of PTAs. First, RoO can reduce the utilization rates of the PTA-provided preferences. Second, RoO can hamper PTA-induced trade liberalization, undercutting the trade effect that tariff lowering between the PTA partners would have in a PTA with loose RoO. Third, the relevance of RoO *per se*—and their importance as a constraint on commerce thereby—decreases with the lowering of MFN tariff barriers across PTA members. These issues have rendered some analysts to suggest that the expanding spaghetti-bowl of overlapping PTAs and RoO regimes should be accompanied by the principle of open regionalism and/or replaced by customs unions or a hybrid arrangment between and CU and FTA altogether, lest the benefits of preferential trade liberalization be lost.[11]

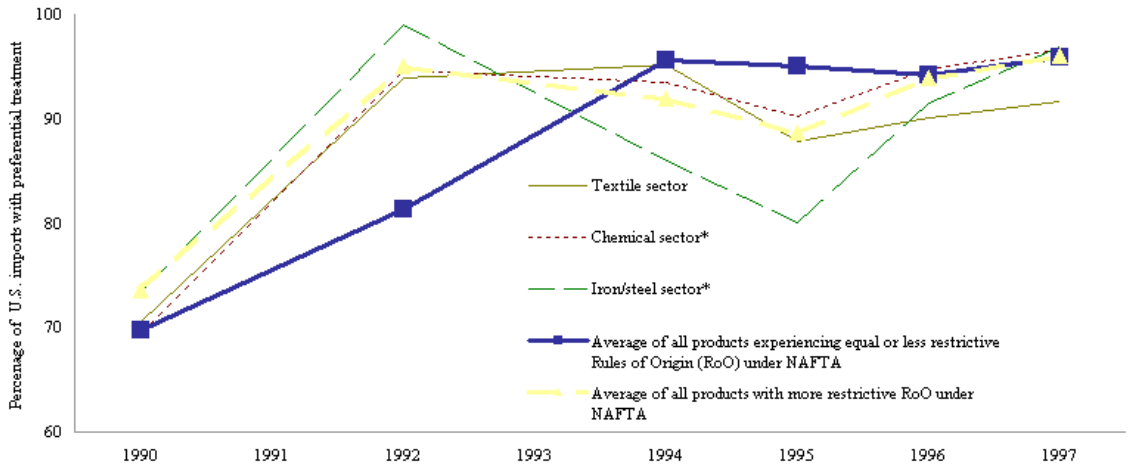
However, theoretical literature is has yet to specify the exact level of restrictiveness where RoO are loose enough to keep input prices low or restrictive enough for the price of inputs to rise to unsustainable heights and for the negative effects of trade diversion to kick in (Ju and Krishna 1998; Duttagupta and Panagariya 2000). As such, the relationship between the restrictiveness of RoO and intra-PTA trade flows in intermediate and final goods is relegated to an empirical matter.

[10] For example, a Mexican and a US firm selling at the US market and purchasing their inputs from outside the NAFTA region would be unequally treated under NAFTA, as the Mexican firm would be disadvantaged vis-à-vis the US firm by the former's failure to meet the RoO required to export to the US market (Graham and Wilkie 1998: 110).

[11] See Bergsten (1997); Wonnacott (1996).

Empirical evidence, for its part, is scarce given the difficulties of operationalizing RoO—translating the complex technical requirements into a variable that serves as a measure of the stringency of RoO. However, the pioneering works are rather clear on the dampening effect of the technical and administrative requirement of RoO on trade. Appiah (1999), examining NAFTA in a three-country, multisector Computable General Equilibrium (CGE) model, finds that RoO distort trade flows, diverting resources from their most efficient uses and undercutting global welfare. Estevadeordal and Miller (2002) document "missed preferences"—i.e., utilization rates below 100 percent—between the United States and Canada due to the tightening of the pre-FTA RoO under NAFTA launched in 1994 (figure1). Cadot et al. (2002) attribute the mere 64 percent utilization rate of NAFTA preferences in part to RoO, and also show that Mexican exports to the United States have been undermined by stringent RoO.[12] Canadian producers are reported to have opted to pay the tariff rather than going through the administrative hurdles to meet the RoO already in the context of the NAFTA predecessor, the US-Canada FTA (Krueger 1995).

Figure 1 - From USA-Canada FTA to NAFTA:
Rules of Origin and Utilization Rates



Note: 1991 and 1993 data points linearly interpolated.
Source: Estevadeordal and Miller (2002)

In the EU context, Brenton and Manchin (2002), albeit not operationalizing RoO, attribute the low utilization rates of the EU's trading partners in the textile sector to excessive stringency of EU RoO. Augier and Gasiorek (2002) examine two different types of PTAs—one with RoO and the other whereby the RoO regime permits diagonal cumulation—finding preliminary evidence that when there is no cumulation between countries, trade is more than a third lower than expected level of total trade; for manufacturing trade, the figure rises to above 40 percent. These contributions

[12] In January 1995, the US found a high compliance rate among the Mexican and Canadian exporters and producers on RoOs, or at 90 percentand 80 precent, respectively (Reyna 1995: 37-38). In NAFTA, the United States played a key role in establishing the agreement's Uniform Regulations and RoO enforcement mechanisms.

notwithstanding, much remains to be done to further the empirical understanding of the effects of RoO on trade and, in particular, on investment.

II. Rules of Origin around the World

This section turns to analyzing the structure of the RoO regimes used in selected PTAs in Europe, the Americas, Asia-Pacific, Africa, and the Middle East, as well as in PTAs between these regions. We subsequently discuss the structure of non-preferential RoO. The latter part of this section examines the relative restrictiveness of the RoO governing different economic sectors in the different agreements.

A. Comparing the Structure of RoO Regimes in Five Regions

i. Europe: Expansion of the PANEURO System

The RoO regimes employed today across the EU's FTAs are highly uniform vis-à-vis each other. This owes largely to the European Commission's recent drive to harmonize the EU's existing and future preferential RoO regimes in order to facilitate the operations of EU exporters dealing on multiple trade fronts, and to pave the way for particularly the EU's East European FTA partners to draw greater benefits from EU-provided preferential treatment via diagonal cumulation—that was precluded by the lack of compatibility among the EU's RoO regimes. The harmonization efforts pertained to product-specific and regime-wide RoO alike. They extended to the RoO protocols with the EFTA countries that dated from 1972 and 1973, as well as across the EU's FTAs forged in the early 1990s in the context of the Europe Agreements with Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Romania.[13] The work culminated in 1997 in the launch of the Pan-European (PANEURO) system, which established identical RoO protocols and product-specific RoO across the EU's existing FTAs, providing for diagonal cumulation among the participating countries thereby. The Commission's regulation 46 of January 1999 reiterates the harmonized protocols, outlining the so-call single list RoO.

The PANEURO RoO have since 1997 become incorporated in the EU's newer FTAs, including the Euro-Mediterranean Association Agreements, the Stabilization and Association Agreements with Croatia and the Former Yugoslav Republic of Macedonia, the EU-Slovenia FTA, as well as the extra-regional FTAs with South Africa, Mexico, and Chile. Also 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 approximate the single list, PANEURO model. However, the harmonized RoO do not represent a dramatic break with those of the pre-1997 era. For example, the RoO in nearly three-quarters of the products (in terms of tariff sub-headings) in PANEURO and the original EU-Poland RoO protocol published in 1993 are identical. Both the new and the old versions combine the CTC mainly at the heading level with VC and/or TECH. Indeed, the EU RoO feature remarkable continuity: the RoO of the European

[13] See Driessen and Graafsma (1999) for review.

Community-Cyprus FTA formed in 1973 are strikingly similar to those used today. One notable difference between the older and the newer protocols is that the latter allow for an optional way of meeting the RoO for about 25 percent of the products, whereas the former specify mostly only one way of meeting the RoO. The second option, alternative RoO, much like the first option RoO, combine different RoO criteria; however, the most frequently used alternative RoO is based on the import content criterion.

ii. Americas: Four RoO Families

There is much more variation across RoO regimes in the Americas. Nevertheless, distinct RoO families can be identified (Garay and Cornejo 2002). One extreme is populated by the traditional trade agreements such as the Latin American Integration Agreement (LAIA), which uses a general rule applicable across the board for all tariff items (a change in tariff classification at the heading level or, alternatively, a regional value added of at least 50 percent of the FOB export value). The LAIA model is the point of reference to RoO used in the Andean Community (CAN) and Caribbean Community (CARICOM). At the other extreme lie the so-called new generation PTAs such as NAFTA, which, in turn, is used as a reference point for the US-Chile, Mexico-Costa Rica, Mexico-Chile, Mexico-Bolivia, Mexico-Nicaragua, Mexico-Northern Triangle (El Salvador, Guatemala, and Honduras), Chile-Canada, and Mexico-Colombia-Venezuela (or G-3) FTAs; the NAFTA model is also widely viewed as the likely blueprint for the RoO of the Free Trade Area of the Americas (FTAA).[14] The RoO regimes in these agreements may require a change of chapter, heading, sub-heading or item, depending on the product in question. In addition, many products combine the change of tariff classification with an exception, regional value content, or technical requirement.

Mercosur RoO, as well as RoO in the Mercosur-Bolivia and Mercosur-Chile FTAs fall between the LAIA-NAFTA extremes. They are mainly based on change of heading and different combinations of regional value content and technical requirements. The Central American Common Market's (CACM) RoO regime can be seen as located between those of the Mercosur and NAFTA: it uses chiefly change in tariff classification only, but in a more precise and diverse ways than Mercosur due to requiring the change to take place at either the chapter, heading, or subheading level, depending on the product in question. In some products, CACM introduces exceptions; a handful of products are also governed by regional value content or technical requirements.

Notably, unlike the EU's extra-European FTAs that follow the PANEURO system, US bilateral FTAs with extra-Hemispheric partners—Jordan and Israel—diverge markedly from the NAFTA model, operating on VC alone. However, the RoO of the US-Singapore FTA are again more complex, likening the NAFTA RoO. Similarly, the recently forged Chile-South Korea FTA also features a high degree of sectoral selectivity à la NAFTA—and, indeed, the US-Chile FTA.

[14] NAFTA RoO enshrined in Chapter 4 constitute a maze of highly disaggregated trade regulations described in a 150-page long Annex.

iii. Africa, Asia, Middle East: Toward Selectivity from Across-the-Board RoO?

The relative complexity of RoO in Europe and the Americas stands in contrast to the generality of RoO in many Asian, African, and Middle Eastern PTAs. Some of the main integration schemes in these regions—the ASEAN Free Trade Area (AFTA), Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), Singapore-Australia Free Trade Agreement (SAFTA), and South Pacific Regional Trade and Economic Cooperation (SPARTECA) in Asia-Pacific; the Economic Community of West African States (ECOWAS), Common Market for Eastern and Southern Africa (COMESA), and Namibia-Zimbabwe FTA in Africa; and the Gulf Cooperation Council (GCC) in the Middle East—are based on an across-the-board VC rule that, when defined as RVC, ranges from 25 percent (in Namibia-Zimbabwe FTA) to 50 percent (ANZCERTA). Some of the agreements allow, or, indeed, require, the RoO to be based on import content; however, the percentage requirement in such instances is higher than in terms of the RVC. Most of these regimes also specify and alternative RoO based on the CTC criterion, most often change in heading or, in the case of ECOWAS that also has a relatively low RVC requirement at 30 percent, change in subheading.

However, both Africa and Asia-Pacific also feature RoO regimes of NAFTA- or PANEURO-like sectoral selectivity. The Southern African Development Community (SADC) RoO approximate the PANEURO model in both types of sectoral RoO and sectoral selectivity. Moreover, COMESA RoO are reportedly under renegotiation, which may well lead to greater selectivity. On the Asian front, the RoO of the Japan-Singapore Economic Partnership Agreement (JSEPA) are also complex, as evinced by the more than 200-page RoO protocol.

As noted above, the inter-continental RoO regimes of the US-Singapore and Chile-Korea FTAs—as well as the recently concluded EFTA-Singapore FTA where RoO follow the PANEURO model—have delivered additional complex RoO regimes to the Asia-Pacific theater. The future Mexico-Singapore, Canada-Singapore, India-Singapore, Mexico-Korea, Mexico-Japan, and US-Australia FTAs, among others, will likely compound this trend, as may the rise of further intra-regional FTAs in Asia-Pacific, such as between Japan and Korea, between Korea and Singapore, and between ASEAN on the one hand, and China, Japan, and/or Korea, on the other.[15]

iv. Non-Preferential RoO

Non-preferential RoO are used for purposes distinct from those of preferential rules. Even if a country did not use preferential RoO, it would still apply some type of non-preferential RoO; these RoO apply to the roughly 55 percent of world trade that is conducted on a non-preferential basis (WTO 2003). Unlike preferential RoO that have thus far escaped multilateral regulation, non-preferential RoO have been under a process of harmonization under the auspices of the Committee on Rules of Origin (CRO) of the

[15] There have been impulses to establish separate, bilateral FTAs between ASEAN and Japan, China, and Korea rather than negotiating a single FTA encompassing all the players. Japan has reportedly also studied possible economic partnership agreements with Thailand and the Philippines, respectively.

World Trade Organization (WTO) and the technical committee (TCRO) of the World Customs Cooperation Council. Propelled by concerns of RoO's effects on unfettered flow of trade, the harmonization drive was first launched in 1995 as mandated by the Uruguay Round's Agreement on Rules of Origin (ARO). Before the Uruguay Round, no multilateral rules existed in the GATT for determining the origin of goods in global commerce.

The harmonization work was initially scheduled to be completed by July 1998. However, the deadline has been extended several times since then. In June 1999, when the TCRO submitted the final results of its technical work on the Harmonization Work Program, 486 outstanding product-specific issues were before the Committee. By mid-2002, the WTO reported that 348 issues had been resolved, with 138 awaiting resolution. An examination of the Committee's reports and working documents issued since 1999 and relating to questions still under examination allows to conclude that the unresolved issues affect about 40 percent of tariff subheadings (that is, these subheadings still feature two or more potential RoO as proposed by the various WTO member governments).

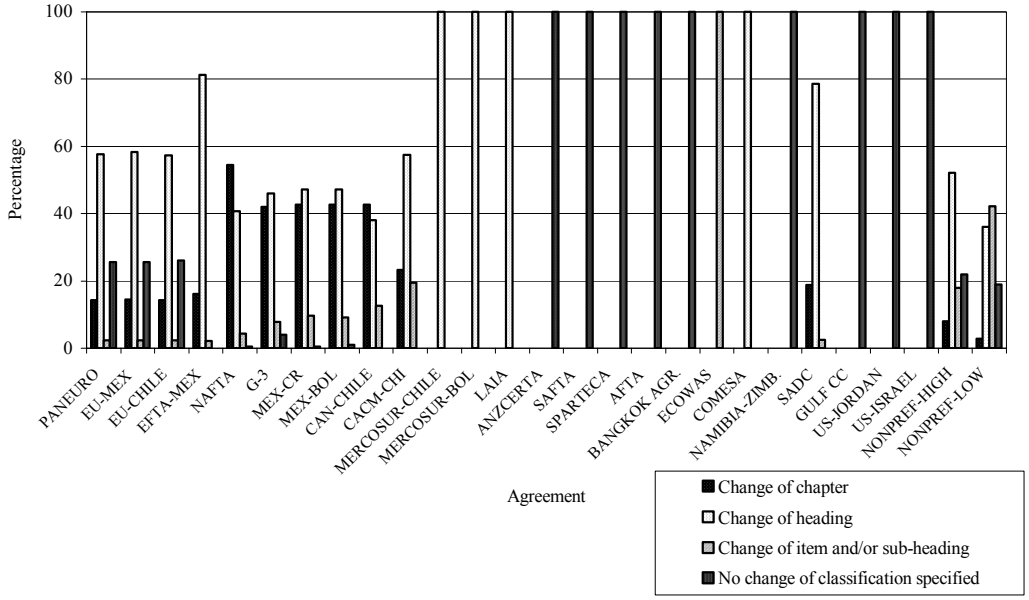
In their current structure, the non-preferential RoO approximate the PANEURO and NAFTA models in sectoral specificity; however, since several issues are still contested at the WTO, the final degree of complexity remains to be gauged. What is clear is that the definition of the non-preferential RoO is driven by the same political economy considerations as the definition of preferential RoO; indeed, the harmonization work can be considered in part endogenous to the RoO regimes that already exist in the manifold PTAs around the world.

v. Depicting Product-Specific RoO around the World

Figure 2 centers on the first RoO component, the CTC criterion, in three of EU's RoO regimes (PANEURO—where the RoO are basically fully identical to those of the EU-South Africa FTA—and the RoO in the EU-Mexico and EU-Chile FTAs); the EFTA-Mexico RoO that approximate the EU-Mexico RoO; five RoO regimes based on the NAFTA model gaining prominence in the Western Hemisphere (NAFTA, Group of Three, and Mexico-Costa Rica, Mexico-Bolivia, and Canada-Chile FTAs); the RoO in the CACM-Chile FTA, the RoO regimes in the FTAs between Mercosur on the one hand, and Chile and Bolivia, on the other; the LAIA RoO; and the RoO in force in three PTAs in Africa (COMESA, ECOWAS and SADC), three in Asia-Pacific (AFTA, Bangkok Agreement, and ANZCERTA), and the Gulf Cooperation Council in the Middle East. The two final sets of bars depict two potential outcomes of the harmonization process of the non-preferential RoO (as set to their "lowest" and "highest" levels of stringency, or the extent to which the RoO impose demands on potential exporters, which will be discussed in the next section).[16]

[16] The figure is based on the first RoO only when two or more possible RoO are provided for a tariff heading or subheading. The recently published Chile-Korea and Japan-Singapore FTAs await future coding efforts.

Figure 2 - Distribution of CTC Criteria by Agreement



Source: Authors' calculations based on RoO protocols.

The change of heading-criterion predominates EU RoO, whereas the RoO built upon the NAFTA RoO regime are based on change of heading and change of chapter-criteria at relatively even quantities. Except for the SADC, the African and Asian PTAs considered here stand out for using either change of heading or change of subheading-criteria exclusively; similarly, LAIA and Mercosur's FTAs with Chile and Bolivia use the change of heading-criteria across the RoO. In contrast to the PANEURO and NAFTA models, non-preferential RoO feature also a strong change of subheading-component. Another notable difference between the various FTAs is that some, such as ANZCERTA, employ the VC criterion across sectors, completely foregoing the use of the CTC-criterion. The EU does this in about a quarter of its RoO; the bulk (more than 80 percent) of these RoO are based on the wholly-obtained criterion used particularly in agricultural products, or on the import content-rule that impose a ceiling of 40-50 percent to non-originating components of the ex-works price of the final product. The stand-alone import content RoO are used particularly frequently for optics, transportation equipment, and machinery and electrical equipment.

Table 3 centers on the tariff sub-headings governed by VC only (or by VC as an alternative to a CTC criterion) in various RoO regimes, and, in particular, on the height of the VC criterion. The most usual level of VC is 40-50 percent, whether defined as MC or RVC; however, the permitted value of non-originating inputs of the price of the final product is as low as 15-30 percent in some products in the PANEURO and SADC regimes. The table also displays the various bases for calculation of the VC; differences in the method of calculation can have crucial implications to the exporters' capacity to meet the RoO. The PE model that is separated here for analytical purposes essentially involves the same product-specific RoO as PANEURO, while diverging somewhat from

the PANEURO in the regime-wide RoO. It applies to some 15 FTAs, particularly to those forged by the EU and East European countries with Israel (WTO 2002).

Table 3 – The Height of VC Criterion by Agreement

PTA	Value Content Criterion			Basis for Calculation
	MC	RVC	VP	
PANEURO (50)	50-30		Yes	Ex-works
PE (15)	50-30		Yes	Ex-works
EU-SA	50-30		Yes	Ex-works
EU-MEX	50-30		Yes	Ex-works
EU-CHILE	50-30		Yes	Ex-works
EFTA-MEX	50-30		Yes	Ex-works
NAFTA		60-50		60 fob; 50 cost prod.
US-Chile		45-35		45 build-down; 35 build-up[i]
G-3		55-50[ii]		fob
MEX-CHILE		50-41.66		50 fob; 41.66 cost prod.
MEX-BOL		50-41.66		51 fob; 41.66 cost prod.
MEX-CHILE		50-40		50 fob; 40 cost prod.
CAN-CHILE		35-25		35 fob; 25 cost prod.
CACM		N/A		fob
CACM-CHI		30		fob
MERCOSUR	40	60		fob[iii]
MERCOSUR-CHILE	40			fob
MERCOSUR-BOL	40			fob
CAN	50[iv]			fob
CARICOM-DR		N/A		fob
LAIA	50			fob
ANZCERTA	50-30			factory cost
SAFTA	50-30			factory cost
SPARTECA	50			factory cost
AFTA	60			fob
BANGKOK	50			fob
Chile-Korea		45-30		45 build-down; 30 build-up
COMESA	60	35		60 cif; 35 factory cost
ECOWAS		30		factory cost
NAMIBIA-ZIMB.		25		N/A
SADC	70-35			ex-works
GULF CC		40[v]		ex-works
US-JORDAN		35		fob
US-ISRAEL		35		ex-works
MEX-ISRAEL		45-35		45 fob; 35 cost prod.
NONPREF	60-40			ex-works

Sources: World Trade Organization (2002); ALADI (2002); FTA texts.

Capturing the full scale of variation in the RoO regimes requires a look at the various combinations of RoO components. Table 4 displays the RoO combinations in selected FTAs around the world. Particularly notable is the high degree of selectivity of PANEURO, NAFTA, and non-preferential RoO, as opposed to the Africa and Asian RoO that are set at the same values across sectors within a given agreement.

Table 4 - Distribution of RoO Combinations, Selected PTAs (1st RoO only)

	EUROPE					AMERICAS								ASIA/PACIFIC							AFRICA			MIDDLE EAST			NON-PREF	
Requirement	PANEURO	EU-MEX	EU-CHI	EU PRE-97	EFTA-MEX	NAFTA	G3	MEX-CR	MEX-BOL	CAN-CHI	CACM-CHI	MERC-CHI	LAIA	ANZCERTA	SAFTA	SPARTECA	AFTA	BANGKOK	ECOWAS	COMESA	NAM-ZIMB	SADC	GULF CC	US-JORDAN	US-ISRAEL	HIGHEST	LOWEST
NC	0.39	0.39	0.39	0.20		0.54	4.05	0.55	0.95																			
NC+ECTC	2.39	2.04	2.39	2.36																								
NC+TECH	1.39	1.39	1.39	0.72																							0.72	9.62
NC+ECTC+TECH	0.00	0.00	0.00	0.00																								
NC+VC	11.46	10.91	11.90	11.08				0.02						100	100	100	100	100			100		100	83.94	100	11.48	0.06
NC+ECTC+VC	1.57	1.57	1.57	1.61																								
NC+VC+TECH	0.08	0.20	0.20	0.00																							0.34	0.5
NC+WHOLLY OB	7.62	7.62	7.62	3.24																				16.06			9.39	8.7
NC+WHOLLY OB	0.70	0.70	0.70	0.70																								
SUBTOTAL	*25.60*	*24.82*	*26.16*	*19.91*	*0.00*	*0.54*	*4.05*	*0.57*	*0.95*	*0.00*	*0.00*	*0.00*	*0.00*	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*	*0.00*	*0.00*	*100.00*	*0.00*	*100.00*	*100.00*	*100.00*	*21.93*	*18.88*
CI																											3.64	6.18
CI+ECTC						0.02		0.04																			0.12	0.12
CI+TECH					2.17																	1.39					0.08	3.09
CI+ECTC+TECH																												
CI+VC																												
CI+ECTC+VC						0.02																						
CI+VC+TECH																												
SUBTOTAL	*0.00*	*0.00*	*0.00*	*0.00*	*2.17*	*0.04*	*0.00*	*0.04*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*1.39*	*0.00*	*0.00*	*0.00*	*3.84*	*9.39*
CS	0.20	0.20	0.20	0.08		1.29	1.54	2.99	2.94	11.00	19.16								100			1.16				13.53	30.42
CS+ECTC	0.00	0.00	0.00	0.00		2.52	0.73	2.14	1.32	1.60	0.20																0.64	0.92
CS+TECH	1.90	1.90	1.78	1.89		0.04	0.10		0.02																			1.41
CS+ECTC+TECH	0.00	0.00	0.00	0.00		0.40	0.04	0.28	0.43																			
CS+VC	0.27	0.27	0.27	0.37			4.60	4.25	4.24		0.03																	
CS+ECTC+VC	0.00	0.00	0.00	0.00		0.10																						
CS+VC+TECH	0.00	0.00	0.00	0.00			0.04		0.26																			
CS+ECTC+VC+TE	0.00	0.00	0.00	0.00			0.83																					
SUBTOTAL	*2.37*	*2.37*	*2.25*	*2.34*	*0.00*	*4.35*	*7.88*	*9.66*	*9.21*	*12.60*	*19.39*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*100.00*	*0.00*	*0.00*	*1.16*	*0.00*	*0.00*	*0.00*	*14.17*	*32.75*
CH	32.99	32.99	32.86	36.83	58.79	17.09	16.45	24.32	17.00	17.50	57.15	46.00	100.00							100		68.65				40.13	33.88
CH+ECTC	4.60	5.13	4.56	4.57	7.22	19.18	13.45	19.66	14.27	17.10	0.26											3.35				11.64	2.22
CH+TECH	0.00	0.00	0.00	0.34		0.02	0.97		0.22			20.04														0.36	
CH+ECTC+TECH	6.66	6.66	6.66	6.68	9.04	0.14	0.26		1.74													6.52					
CH+VC	13.01	12.68	12.78	13.58	6.1	3.54	2.01	2.67	2.17	3.40		9.99										0.13					
CH+ECTC+VC	0.37	0.86	0.37	0.43	0.08	0.58		0.52	0.85																		
CH+VC+TECH	0.00	0.00	0.00	0.00		0.10	8.06	0.02	10.01			23.97															
CH+ECTC+VC+TE	0.02	0.02	0.02	0.02	0.03		4.82		0.89													0.03					
SUBTOTAL	*57.65*	*58.34*	*57.25*	*62.43*	*81.26*	*40.65*	*46.02*	*47.19*	*47.15*	*38.00*	*57.41*	*100.00*	*100.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*100.00*	*0.00*	*76.65*	*0.00*	*0.00*	*0.00*	*52.13*	*36.10*
CC	2.16	2.16	2.16	2.28		30.95	21.09	31.05	21.80	29.50	22.94											0.68				7.86	2.78
CC+ECTC	1.02	1.02	1.02	0.74	0.7	17.71	5.90	5.65	6.67	5.30	0.26															0.1	0.1
CC+TECH	0.04	0.04	0.04	0.04	0.05	0.02	5.43		6.30																		
CC+ECTC+TECH	11.02	11.25	11.02	11.02	15.41	5.76	6.65	5.81	6.24	7.90												18.09					
CC+VC	0.00	0.00	0.00	0.00			0.14	0.26	0.43																		
CC+ECTC+VC	0.00	0.00	0.00	0.00			0.00																				
CC+VC+TECH	0.00	0.00	0.00	0.00			2.67		1.24																		
CC+ECTC+VC+TE	0.00	0.00	0.00	0.00			0.20																				
SUBTOTAL	14.24	14.47	*14.24*	*14.08*	*16.16*	*54.44*	*42.08*	*42.77*	*42.68*	*42.70*	*23.20*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*18.77*	*0.00*	*0.00*	*0.00*	*7.96*	*2.88*
TOTAL	100	100	100	99	100	100	100	100	100	93	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

CC = CHANGE IN CHAPTER
CH = CHANGE IN HEADING
CS = CHANGE IN SUBHEADING
ECTC = EXCEPTION TO CHANGE OF TARIFF CLASSIFICATION
VC = REGIONAL VALUE CONTENT
TECH = TECHNICAL REQUIREMENT
* = 1.27 percent of RoO (by sub-heading) in EU-Poland FTA covered by Annex IV
Calculations at 6-digit level of the Harmonized System.
Source: Authors' calculations and Devlin, Robert and Antoni Estevaderodal. 2001. "What's New in the New Regionalism in the Americas? " INTAL-ITD-STA Working Paper 6. Buenos Aires and Washington, DC: INTAL and ITD (May).

vi. Regime-Wide RoO

Besides sectoral RoO, the different RoO regimes can be compared by their regime-wide RoO. Table 5 contrasts the various RoO regimes by their general, regime-wide RoO—*de minimis*, roll-up, cumulation, and drawback.

First, EU RoO regimes feature a higher *de minimis* than NAFTA and many other FTAs in the Americas, while there is no *de minimis* rule in Mercosur's FTAs and various FTAs in Asia and Africa. However, the principle does have exceptions in most regimes: for example, the EU's *de minimis* does not apply to textiles and apparel, except for allowing an 8 percent *de minimis* of the total weight of textile materials in mixed textiles products. In the EU-South Africa FTA, *de minimis* is set at 15 percent but excludes fish and crustaceans, tobacco products, as well as certain meat products and alcoholic beverages. The NAFTA *de minimis* does not extend to the production of dairy produce; edible products of animal origin; citrus fruit and juice; instant coffee; cocoa products, and some machinery and mechanical appliances, such as air conditioners and refrigerators (Reyna 1995: 115-117). In textiles, the 7 percent *de minimis* refers to the total weight rather than cost of the input component. Chile-Korea FTA places *de minimis* at 8 percent, but requires the non-originating materials in chapters 1-24 of the Harmonized System to undergo a change in subheading prior to re-exportation.

Second, the roll-up principle is widely used around the world. For example, in NAFTA, a good may acquire originating status if it is produced in a NAFTA country from materials considered as originating (whether such materials are wholly obtained or having satisfied a CTC or RVC criterion) even if no change in tariff classification takes place between the intermediate material and the final product. Similarly, the EU-Mexico FTA stipulates that "if a product which has acquired originating status by fulfilling the conditions…is used in the manufacture of another product, the conditions applicable to the product in which it is incorporated do not apply to it, and no account shall be taken of the non-originating materials which may have been used in its manufacture."

Table 5 – Regime-Wide RoO in Selected PTAs

PTA	*De minimis* (percentage)	Roll-Up	Cumulation		Drawback Allowed?[vi]
			Bilateral	Diagonal	
PANEURO (50)	10	Yes	Yes	Yes (full in EEA)	No
PE (15)	10	Yes	Yes	Yes	No[vi]
EU-South Africa	15	Yes	Yes	Yes with ACP (full with SACU)	Not mentioned
EU-Mexico	10	Yes	Yes	No	No after 2 years
EU-Chile	10	Yes	Yes	No	No after 4 years
EFTA-Mexico	10 (not chs. 50-63)	Yes	Yes	No	No after 3 years
NAFTA	7 (exceptions in agric. and ind. prod.; 7% of weight in chs. 50-63	Yes except automotive	Yes	No	No after 7 years for Mex.
US-Chile	10 (excep. in agric. and processed agr. prod.)	Yes	Yes	No	Not mentioned
G3	7 (7% of weight in chs. 50-63)	Yes	Yes	No	Not mentioned
Mexico-Costa Rica	7 (excep. in chs. 4-15 and headings 0901, 1701, 2105, 2202)	Yes	Yes	No	No after 7 years
Mexico-Chile	8 (excep. in agric. and ind. products; 9% of weight in chs. 50-63)	Yes	Yes	No	Not mentioned
Mexico-Bolivia	7 (not chs. 1-27 unless CS; not chs. 50-63)	Yes	Yes	No	No after 8 years
Canada-Chile	9 (excep. in agric. and ind. products; 9% of weight in chs. 50-63)	Yes	Yes	No	Not mentioned
CACM-Chile	8 (not chs. 1-27 unless CS)	Yes	Yes	No	Not mentioned
CACM	10 until 2000; 7 from 2001 on (7% of weight in chs. 50-63)	N/A	Yes	No	Yes
Mercosur	No	Yes except automotive	Yes	No	Yes (except automotive imports from Argentina and Brazil)
Mercosur-Chile	Not mentioned	Yes	Yes	No	Yes
Mercosur-Bolivia	Not mentioned	Yes	Yes	No	Yes
CARICOM	Not mentioned	Not mentioned	Yes	No	Possibly[vii]
CARICOM-DR	7	Not mentioned	Yes	No	Not mentioned
ANZCERTA	2	Yes	Yes	Yes (full)	Yes
SAFTA	2	Yes	Yes	No	Not mentioned
SPARTECA	2	Yes	Yes[viii]	Yes (full)	Yes
AFTA	No	Not mentioned	Yes	No	Yes
BANGKOK	Not mentioned	Yes	Yes[ix]	No	Not mentioned
Chile-Korea	8 (not chs. 1-24 unless CS; 8% of weight in chs. 50-63	Yes	Yes	No	Not mentioned
COMESA	No	Yes	Yes	No	Not after 10 years
ECOWAS	Not mentioned	Not mentioned	Yes	No	Not mentioned
SADC	10 (not chs. 50-63, 87, 98)	Yes	Yes	No	Not mentioned
GULF CC	Not mentioned	Not mentioned	Yes	No	Not mentioned
US-Jordan	Not mentioned	Not mentioned	Yes	No	Not mentioned
US-Israel	No	Yes	Yes	No	Yes
Canada-Israel	10 (excep. in agric. and industrial prod.; 7% of weight in chs. 50-63)	Yes	Yes	Yes (with US)	Not mentioned
Mexico-Israel	10 (excep. in agric. and industrial prod.; 7% of weight in chs. 50-63)	Yes	Yes	No	Not mentioned

Sources: World Trade Organization (2002); ALADI (2002); FTA texts.

Third, the EU's Pan-European system of cumulation applied since 1997 draws a clear distinction between the EU RoO regimes on the one hand, and most RoO regimes elsewhere in the world, on the other. The foremost diagonal cumulation regime in the world, the Pan-European system covers no fewer than 50 FTAs. These include FTAs between EU and third parties, such as the members of the European Free Trade Agreement (EFTA), the central and eastern European countries, the Baltic states, Slovenia, Turkey, and Israel, and also FTAs forged between the EU's partner countries—such as between Slovenia and Estonia or between EFTA and Israel. In concrete terms, the Pan-European system enables producers to use components originating in any of the participating countries without losing the preferential status of the final product. The EEA agreement between EU and EFTA permits full cumulation. The EU-South Africa FTA also provides for full cumulation. It incorporates the "single territory" concept, whereby goods originating from countries party with South Africa to the Southern Africa Customs Union (SACU) are considered as originating in the EU-South Africa FTA area. Notably, AFTA and ANZCERTA models provide for full cumulation, while the Canada-Israel FTA allows for cumulation with the two countries' common FTA partner, the United States.

Fourth, EU's FTAs and FTAs in the Americas tend explicitly to preclude drawback. Nonetheless, both have allowed for a phase-out periods during which drawback is permitted. For instance, Mexico was allowed to employ drawback for the first two years under the EU-Mexico FTA, while Chile can do so through 2007, the fourth year of the FTA with the EU. NAFTA allowed Mexico to use drawback during the first seven years. NAFTA also provides for leniency in the application of the no-drawback rule by putting in place a refund system, whereby the producer will be refunded the lesser of the amount of duties paid on imported goods and the amount of duties paid on the exports of the good (or another product manufactured from that good) upon its introduction to another NAFTA member. AFTA, ANZCERTA, SPARTECA, the US-Israel FTA, CACM, and Mercosur's FTAs stand out for permitting drawback. However, in Mercosur *per se*, no-drawback rule does govern Argentine and Brazilian imports of intermediate automotive products when the final product is exported to a Mercosur partner.

vii. Administration of RoO

The various RoO regimes diverge in their administrative requirements, particularly the method of certification (table 6).

Table 6 – Certification Method in Selected FTAs

PTA	Certification method
PANEURO	Two-step private and public; limited self-certification
PE	Two-step private and public; limited self-certification
EU-South Africa	Two-step private and public; limited self-certification
EU-Mexico	Two-step private and public; limited self-certification
EU-Chile	Two-step private and public; limited self-certification
NAFTA	Self-certification
G3	Two-step private and public
US-Chile	Self-certification
Mexico-CR	Self-certification
Mexico-Bolivia	Self-certification (two-step private and public during first 4 years)
Canada-Chile	Self-certification
CACM-Chile	Self-certification
CACM	Self-certification
Mercosur	Public (or delegated to a private entity)
Mercosur-Chile	Public (or delegated to a private entity)
Mercosur-Bolivia	Public (or delegated to a private entity)
CAN	Public (or delegated to a private entity)
CARICOM	Public (or delegated to a private entity)
CARICOM-DR	Public (or delegated to a private entity)
LAIA	Two-step private and public
ANZCERTA	Public (or delegated to a private entity)
SAFTA	Public (or delegated to a private entity)
SPARTECA	Not mentioned
AFTA	Public (or delegated to a private entity)
BANGKOK	Public (or delegated to a private entity)
Japan-Singapore	Public (or delegated to a private entity)
Chile-Korea	Self-certification
COMESA	Two-step private and public
ECOWAS	Public (or delegated to a private entity)
SADC	Two-step private and public
US-Jordan	Self-certification

Source: Authors' classification based on the texts of RoO protocols.

The EU RoO regimes require the use of a movement certificate, EUR.1, that is to be issued in two steps—by the exporting country government once application has been made by exporter or the exporter's competent agency, such as a sectoral umbrella organization. However, the EU regimes provide for an alternative certification method, the invoice declaration, for "approved exporters" who make frequent shipments and are authorized by the customs authorities of the exporting country to make invoice declarations. NAFTA and a number of other FTAs in the Americas as well as the Chile-Korea FTA, meanwhile, rely on self-certification, which entails that the exporter's signing the certificate suffices as an affirmation that the items covered by it qualify as originating. The certification method in Mercosur, Andean Community, Caricom, AFTA,

ANZCERTA, SAFTA, the Bangkok Agreement, Japan-Singapore FTA, and ECOWAS require certification by a public body or a private umbrella entity approved as a certifying agency by the government. However, unlike in the two-step model, the exporter is not required to take the first cut at filling out the movement certificate, but, rather, to furnish the certifying agency with a legal declaration of the origin of the product.[17]

The self-certification model can be seen as placing to burden of proof essentially on the importing country producers; as such, it arguably minimizes the role of the government in the certifying process, entailing rather low administrative costs to exporters and governments alike. In contrast, the two-step system requires heavier involvement by the exporting country government and increases the steps that an exporter is to bear when seeking certification. To be sure, the invoice declaration system implemented by the EU facilitates exporting among the frequent traders.

B. A Comparative Analysis of the Levels of Restrictiveness of RoO

The NAFTA RoO family is based on the change of chapter rules, whereas the EU and most Asian and African RoO models feature a strong change of tariff heading-component. As such, these regimes will entail somewhat divergent demands on exporters. However, understanding the implications of membership in the different types of regimes for an exporter operating in a particular industry requires both a measure of the restrictiveness of RoO, and a more nuanced sectoral analysis of the requirements imposed by RoO.

i. Restrictiveness of RoO Regimes

The manifold RoO combinations within and across RoO regimes present a challenge for cross-RoO comparisons. This paper seeks to draw such comparisons through an index grounded on the plausible restrictiveness of a given type of RoO. Estevadeordal (2000) constructs a categorical index ranging from 1 (least restrictive) to 7 (most restrictive) on the basis of NAFTA RoO. The index can be conceptualized as an indicator of how demanding a given RoO is for an exporter. The observation rule for the index is based on two assumptions: (1) change at the level of chapter is more restrictive than change at the level of heading, and change at the level of heading more restrictive than change at the level of sub-heading, and so on; and (2) VC and TECH attached to a given CTC add to the RoO's restrictiveness.[18] While this paper builds on Estevadeordal's index, some

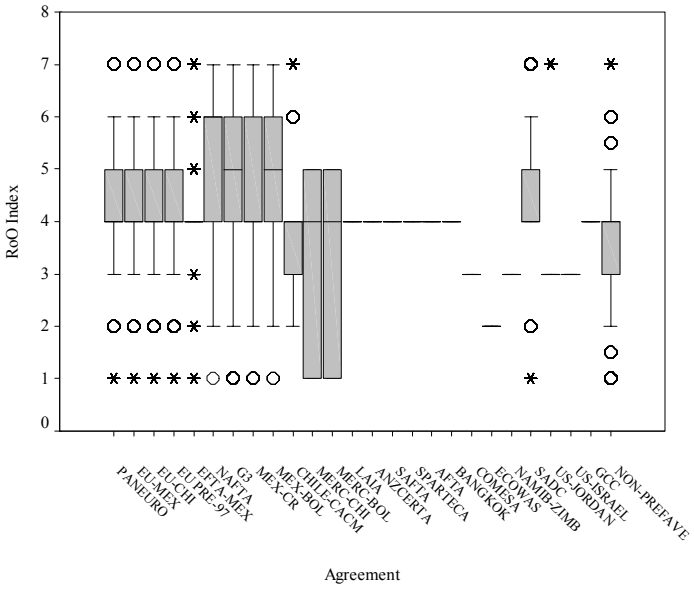
[17] The certificate in NAFTA and G3, CACM-Chile, will be valid for a single shipment or multiple shipments for a period of a year; in ANZCERTA and SAFTA, the certificate will be valid for multiple shipments for two years. In ECOWAS, certificate is not required for agricultural, livestock products and handmade articles produced without the use of tools directly operated by the manufacturer. In Mercosur-Chile, Mercosur-Bolivia, CARICOM-DR, ANZCERTA, and SAFTA, the certificate requires to be accompanied by a legal declaration by the final producer or exporter of compliance with the RoO. In CAN and CARICOM, declaration by the producer is required. In CARICOM, the declaration can be completed by the exporter if it is impossible for the producer to do so.

[18] Given that the degree of restrictiveness is a function of *ex ante* restrictiveness rather than the effective restrictiveness following the implementation of the RoO, the methodology—much like that of Garay and Cornejo (2002)—is particularly useful for endogenizing and comparing RoO regimes. The methodology allows RoO to be analyzed in terms of their characteristics rather than their effects.

modifications are made to the observation rule (specified in appendix I) to account for the structure of EU RoO—in particular the instances where the CTC criterion is not used.

Figure 3 reports the restrictiveness of RoO as calculated at the six-digit level of disaggregation in selected FTAs. The EU RoO regimes are again strikingly alike across agreements; indeed, the similarities are accentuated in comparison to the graphs above as the differences between the pre- and post-1997 RoO regimes in about a fifth of subheadings are too small to alter the restrictiveness code. For instance, in many products the only difference between the two sets of regimes is that a RoO requiring, say, a change of heading for a given product may also impose an ECTC under one regime while not doing so under another; such differences go uncaptured by the index employed here. The RoO regimes based on the NAFTA model, such as the G-3, are also highly alike. The Mercosur model pertinent to Mercosur-Chile and Mercosur-Bolivia FTAs is more general, yet still exhibiting more cross-sectoral variation in the restrictiveness of RoO than the LAIA model marked by the across-the-board change of heading RoO. However, diverging from each other, the NAFTA, Mercosur, and LAIA models evince the distinctive RoO families operated in the Americas. The generality of the LAIA model is replicated by the Asian and African RoO regimes except by the SADC, while the complexity and restrictiveness of PANEURO and NAFTA RoO is carrying over to the non-preferential RoO. To be sure, some of the African RoO regimes are under renegotiation, which may yield greater sectoral selectivity in restrictiveness.

Figure 3 - Restrictiveness of RoO, Selected FTAs



Note: Boxplots represent interquartile ranges. The line in the middle of the box represents the median 50th percentile of the data. The box extends from the 25th percentile to the 75th percentile, or through the so-called inter-quartile range (IQR). The whiskers emerging from the boxes extend to the lower and upper adjacent values. The upper adjacent value is defined as the largest data point less than or equal to x(75) + 1.5 IQR. The lower adjacent value is defined as the smallest data point greater than or equal to x(25) + 1.5 IQR. Observed points more extreme than the adjacent values are individually plotted (extreme values are marked with "o" symbol).
Source: Authors' calculations based on RoO protocols.

ii. Comparing Sectoral RoO

In contrast to the general RoO regimes employed in many of the major FTAs in Asia-Pacific and Africa, economic sectors in the predominant RoO regimes in Europe and the Americas—those based on the EU and the NAFTA models, respectively—as well as the SADC RoO and the non-preferential RoO are governed by different types of RoO and RoO combinations, such as a high domestic value content for agricultural products, technical requirements for textiles products, and change of tariff heading in combination with RVC for automotives. But to what extent does the restrictiveness of RoO vary across economic sectors? Are some sectors more susceptible to the negative trade and investment effects of RoO than others?

We explore this question by focusing on six RoO regimes—the PANEURO, NAFTA, EFTA-Mexico, Chile-CACM, SADC, and non-preferential models. Table 7 reports the restrictiveness values aggregated by section of the Harmonized System that are established on the basis of these regimes.

Table 7 – Sectoral Restrictiveness of RoO, Selected RoO Regimes

HS Section	PANEURO	NAFTA	EFTA-MEX	Chile-CACM	SADC	Non-Pref. Av.
1. Live Animals	7.0	6.0	5.3	5.9	7.0	6.2
2. Vegetable Products	6.6	6.0	4.0	5.6	6.6	6.6
3. Fats and Oils	4.7	6.0	4.0	3.0	7.0	4.0
4. Food, Bev. and Tobacco	5.0	4.7	4.4	3.7	5.4	4.6
5. Mineral Products	3.5	6.0	3.5	5.3	4.0	4.8
6. Chemicals	3.9	5.3	3.8	2.6	4.0	2.5
7. Plastics	4.9	4.8	4.9	3.2	4.7	4.0
8. Leather Goods	3.3	5.6	3.5	3.7	3.8	3.4
9. Wood Products	2.9	4.0	2.9	3.2	4.8	3.3
10. Pulp and Paper	4.4	4.8	4.6	4.1	4.3	3.9
11. Textile and Apparel	6.1	6.9	6.1	4.5	6.1	3.4
12. Footwear	2.8	4.9	4.1	3.5	2.6	3.7
13. Stone and Glass	3.7	4.9	3.7	4.2	3.7	3.5
14. Jewelry	3.7	5.3	3.7	4.0	3.7	3.4
15. Base Metals	4.2	4.6	4.2	3.8	3.9	3.4
16. Machinery and Electrical Equipment	4.8	3.2	4.0	4.3	4.1	3.6
17. Transportation Equipment	4.7	4.8	4.2	3.4	3.8	3.8
18. Optics	5.0	4.0	4.4	4.0	3.9	3.5
19. Arms and Ammunition	4.0	4.7	4.0	4.0	3.1	4.0
20. Works of Art, Misc.	4.1	5.1	4.1	3.6	4.0	3.3
Average	*4.5*	*5.1*	*4.2*	*4.0*	*4.5*	*3.9*

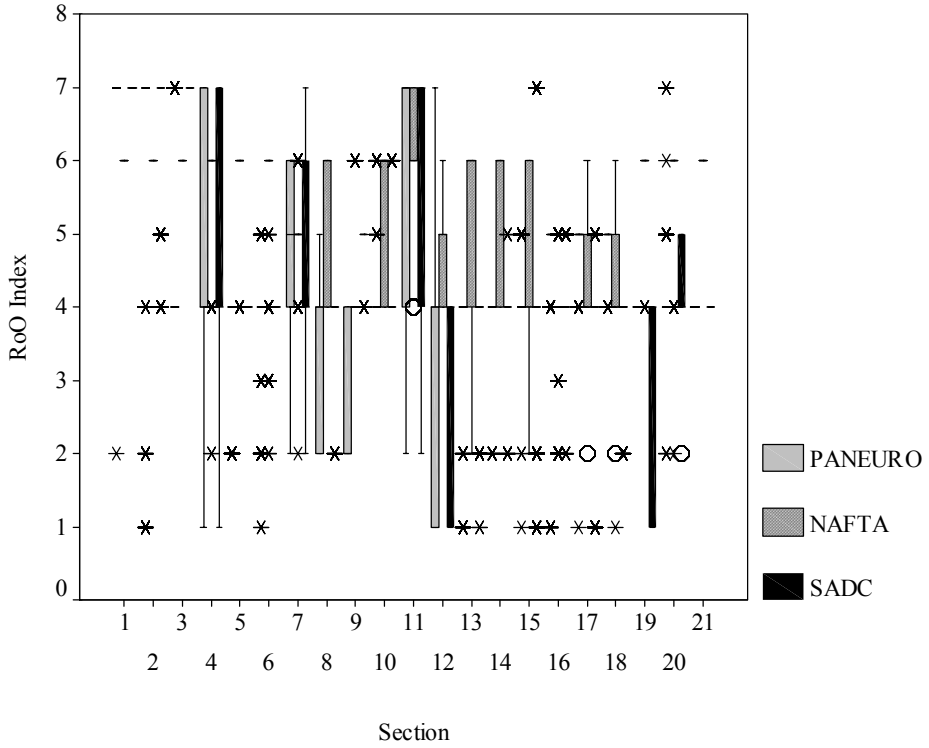
Source: Authors' calculations based on the RoO protocols.

Two issues stand out. First, the average restrictiveness value for the PANEURO RoO falls between 4 and 5, which correspond to the change of heading and change of heading plus regional value content criteria, respectively. As such, the index conveys the same message as the analysis above of the predominance of the change of heading rule in EU's RoO regimes. The average is somewhat higher for NAFTA, reflecting the use of the change in chapter criterion. EFTA-Mexico and Chile-CACM RoO are somewhat more lenient, while the restrictiveness of the SADC RoO is strikingly similar to the PANEURO model. Non-preferential RoO, here set at the average level of restrictiveness of RoO in sectors where agreement on one single RoO has yet to be identified, are less restrictive overall given the downward influence of the change of sub-heading and change of item criteria.

Second, the data reveal important variation in the degree of restrictiveness across economic sectors within the three regimes, as well as striking similarities in the variation of cross-sectoral restrictiveness within each agreement. Agricultural products and textiles and apparel are marked by a particularly high restrictiveness score in each regime, which provides precursory evidence that the restrictiveness of RoO may be driven by the same political economy variables that arbitrate the level of tariffs particularly in the EU and United States. Non-preferential RoO exhibit similar patterns across sectors, communicating the operation of political economy dynamics also at the multilateral level. Yet, most sectors in the non-preferential RoO are less restrictive than their preferential counterparts.

The box-and-whisker plots in figure 4 provide a more nuanced look at the sectoral restrictiveness across three major RoO regimes—the EU, NAFTA, and SADC models. The plots reveal some differences in the range of restrictiveness (or the lack of it) within sectors in each agreement. For instance, while EU RoO are nearly uniform with sections 13-21, NAFTA RoO vary more within these sections—and tend to be more restrictive than the EU RoO. Meanwhile, EU RoO in foodstuffs (section 4) feature a wide range of restrictiveness values, while the NAFTA RoO are highly uniform in the sector. SADC RoO are by and large more similar to the PANEURO than the NAFTA model.

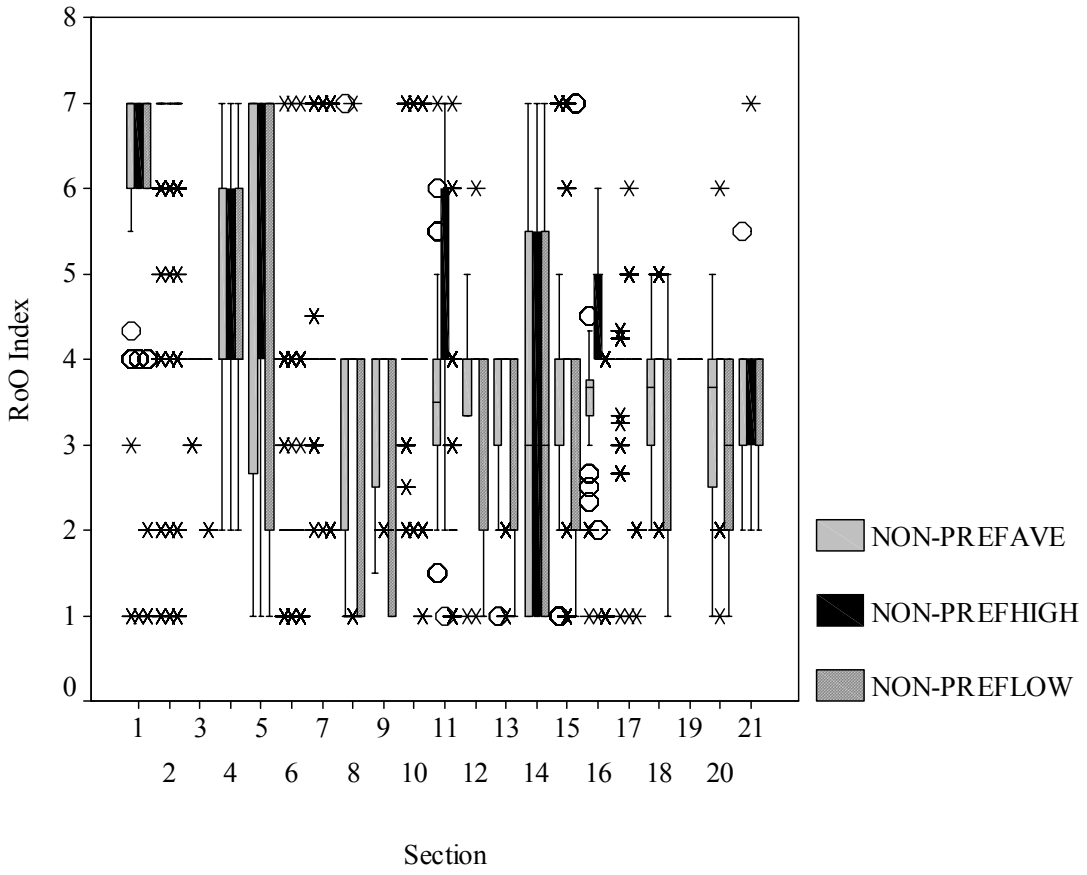
Figure 4 – Profiles of Sectoral Restrictiveness of RoO in EU, NAFTA, and SADC



Note: Observed points more extreme than the adjacent values are individually plotted (outliers and extreme values are marked using "x" and "o" symbols).
Source: Authors' calculations based on the texts of EU and NAFTA RoO protocols and the latest revisions to the non-preferential RoO.

The methodology is replicated in figure 5, which provides a look at the various potential outcomes of the harmonization process for non-preferential RoO—with the RoO set at the average, lowest, highest levels of restrictiveness. The spread of restrictiveness values by sector is rather similar across the possible outcomes; neither are the overall restrictiveness values between the three possibilities are too divergent. Notably, however, unlike in many sectors in the PANEURO, NAFTA, and SADC models, few sectors in non-preferential RoO feature a uniform RoO, but rather display great intra-sectoral selectivity.

Figure 5 – Profiles of Sectoral Restrictiveness of RoO in Three Potential Non-Preferential RoO Regimes



iii. "Weighted" RoO: RoO's Coverage of Actual Trade Flows

A look at RoO's coverage of tariff sub-headings provides an indication of the prevalence of various types of RoO and RoO of different degrees of stringency in and across RoO regimes. However, an analysis of the potential trade effects of RoO benefits from exploring the coverage of actual imports by different types of RoO. Table 8 presents such a "weighted" RoO measure of NAFTA, PANEURO, Chile-CACM, and SADC RoO based on weighting by US imports from NAFTA partners, EU's total imports, Chilean imports from CACM, and South African imports from SADC partners, respectively, in year 2000. The column next to each FTA specifies the deviation of the weighted RoO from the unweighted RoO, operationalized here as the share of the weighted RoO of the unweighted one. When the share is 1, the RoO in the unweighted and weighted exercises are as restrictive; when the share rises above one, the weighted RoO is more restrictive. When the share is zero, the country on whose imports the weights are generated has no incoming flows from the partners, as is the case in many sectors in the Chile-CACM FTA.

The table reveals striking similarity between the weighted and unweighted RoO. Indeed, the weighted RoO tend to be less restrictive than the unweighted RoO; this may in and of itself be an indication that stringent RoO stifle commerce.

Table 8 – Weighted Restrictiveness of PANEURO, NAFTA, Chile-CACM, and SADC RoO

HS Section	PANEURO	as share of unweighted	NAFTA	as share of unweighted	Chile-CACM	as share of unweighted	SADC	as share of unweighted
1. Live Animals	7.0	1.00	6.0	1.00	7.0	1.19	7.0	1.00
2. Vegetable Products	5.5	0.83	5.8	0.96	7.0	1.25	6.3	0.96
3. Fats and Oils	4.2	0.90	6.0	1.00	4.0	1.33	7.0	1.00
4. Food, Bev. and Tobacco	4.9	0.99	5.0	1.06	0.9	0.23	6.4	1.19
5. Mineral Products	2.4	0.68	5.3	0.88	0.0	0.00	4.0	1.00
6. Chemicals	4.1	1.04	4.9	0.93	4.1	1.56	4.0	1.00
7. Plastics	4.8	0.97	4.8	1.00	2.3	0.72	4.3	0.91
8. Leather Goods	3.5	1.06	5.5	0.98	2.0	0.54	4.0	1.05
9. Wood Products	2.5	0.85	4.0	1.00	0.0	0.00	5.0	1.04
10. Pulp and Paper	4.3	0.97	5.6	1.17	4.0	0.98	4.0	0.93
11. Textile and Apparel	6.6	1.09	6.8	0.98	6.9	1.54	4.5	0.74
12. Footwear	2.1	0.74	4.9	1.00	0.0	0.00	1.2	0.46
13. Stone and Glass	3.8	1.03	5.0	1.02	0.0	0.00	2.8	0.76
14. Jewelry	3.6	0.98	5.7	1.08	0.0	0.00	3.9	1.06
15. Base Metals	3.9	0.93	4.8	1.03	4.6	1.22	4.5	1.15
16. Machinery and Electrical Eq.	4.9	1.01	3.8	1.20	4.6	1.07	4.0	0.96
17. Transportation Equipment	4.6	0.98	4.8	0.99	0.0	0.00	3.7	0.97
18. Optics	5.2	1.04	4.1	1.02	5.0	1.25	3.8	0.98
19. Arms and Ammunition	4.0	1.00	4.8	1.02	0.0	0.00	0.0	0.00
20. Works of Art, Misc.	2.9	0.72	5.4	1.05	0.0	0.00	4.9	1.22
Average	4.2	*0.94*	*5.1*	*1.01*	*2.6*	*0.66*	*4.3*	*0.95*

Source: Authors' calculations based on the RoO protocols and UNCTAD TRAINS trade data for 2000.

III. Conclusions and Future Prospects

The world map of RoO regimes is evolving rapidly with the proliferation and expansion of PTAs around the world, as well as with the on-going tailoring of the non-preferential RoO at the WTO. Three developments are particularly likely to affect the shape of the global RoO mosaic in the near future.

First, the PANEURO model will not only consolidate its hold in the European theater, but also expand to FTAs forged between the EU (and other PANEURO adherents) with extra-European partners, most immediately with MERCOSUR and various Southern Mediterranean countries. To be sure, adjustment by many partners to the PANEURO system will be smoothened by the fact that the model already governs EU's GSP,

applying thus to the numerous developing countries that enjoy EU's unilateral preferences. Nonetheless, the "formalization" of the PANEURO model in further, extra-regional and inter-continental PTAs will likely work to entrench the existing supply relations with the EU's partners. The attraction of the model to the EU's partner countries is the possibility for eventual accession to the PANEURO system of cumulation.

Second, the Western Hemisphere will likely become covered by a NAFTA-type RoO regime as a result of the Free Trade Area of the Americas-process. Much like in the EU case, the NAFTA RoO model—which, after all, is not dramatically different from that of the PANEURO model—will undoubtedly affect the shape of RoO regimes in the Asia-Pacific region thanks to the building of cross-Pacific FTAs first and foremost by Canada, Chile, Mexico, and the United States—all of which apply the NAFTA model in their FTAs. The melding of the NAFTA model with the interests of East Asia's thus far foremost engines of inter-continental integration—Japan, Korea, and Singapore—could produce a slightly new brand of RoO regimes alongside the PANEURO and the NAFTA models.

Third, further integration and renegotiation of prior PTAs in Asia, Africa, and the Middle East can well spawn RoO of greater selectivity, as evinced in the Japan-Singapore agreement. Although such selectivity would likely follow the patterns of RoO (and sectoral restrictiveness of RoO) in place in Europe, the Americas, and the SADC, the final outcome could also rise to liken CACM's revised RoO—i.e., with the relatively general change of heading RoO (or VC) being interspersed by some exceptions, combinations with VC (or change of heading), and technical requirements, albeit to a more moderate extent than in NAFTA. The non-preferential RoO, while relying chiefly on the change of heading- or the change of subheading- criteria, appear to be similarly tending toward a combination of RoO to govern the market access of any given product. That the non-preferential RoO continue contested still today, eight years after the harmonization work was launched, attests to the complexity of interests seeking to affect the definition of origin around the world.

The expanding geographical reach of the PANEURO model, the convergence toward a single FTAA RoO regime in the Americas, and rise of the inter-continental FTAs between European and Western Hemisphere partners on the one hand, and partners in other regions, on the other, could be expected to lead to the application of two relatively similar RoO regimes on the global level. This potential *de facto* harmonization dynamic, along with (1) the harmonization of the non-preferential RoO at the WTO, and (2) the fact that many RoO regimes particularly in the Asia-Pacific and African PTA theaters are thus far relatively simple, with the same RoO often applying across the board, could facilitate eventual convergence toward a single global preferential RoO regime. However, the proliferation of intra-Asian FTAs and the potential diversity of the inter-continental agreements might also merely splinter the global RoO panorama further. The former outcome of global RoO convergence would be particularly beneficial to the "spoke" countries that implement divergent RoO regimes across their FTA partners, rather than applying a single, uniform RoO regime in operations across partners, as is done by the EU hub and, within the Americas, by the US and Mexico hubs.
The Doha Trade Round should provide the WTO further momentum to complete the task of harmonizing non-preferential RoO—and also propel multilateral agreements to start

the process of *de jure* harmonization of preferential rules of origin. A further, albeit perhaps more distant, possibility would be to devise a multilateral mechanism to monitor the application of preferential RoO in order to guarantee transparency of RoO and to minimize their uses for distributional purposes. Multilateral approaches to RoO are all the more pressing in the face of PTA proliferation and the potential breach by the various RoO regimes of the tacit prohibition of "other restrictive regulations of commerce" put forth by Article XXIV of the GATT. To be sure, the key to undercutting RoO's negative trade effects lies, however, in the success of multilateral liberalization. Preferential RoO are restrictive only as long as there are MFN tariffs; should the multilateral trade rounds result in further MFN tariff lowerings and the proliferation of PTAs engender a dynamic of competitive liberalization worldwide, the importance of preferential RoO as gatekeepers of commerce would begin to fade.

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APPENDIX I

Estevadeordal's (2000) observation rule yields a RoO index as follows:

$y = 1$ if $y^* \leq CI$
$y = 2$ if $CI < y^* \leq CS$
$y = 3$ if $CS < y^* \leq CS$ and VC
$y = 4$ if CS and $VC < y^* \leq CH$
$y = 5$ if $CH < y^* \leq CH$ and VC
$y = 6$ if CH and $VC < y^* \leq CC$
$y = 7$ if $CC < y^* \leq CC$ and TECH

where y^* is the latent level of restrictiveness of RoO (rather than the observed level of restrictiveness); CI is change of tariff classification at he level of tariff item (8-10 digits), CS is change at the level of sub-heading (6-digit HS), CH is change at the level of heading (4 digits), and CC is change at the level of chapter (2 digits HS); VC is a value content criterion; and TECH is a technical requirement.

There are a number of modifications to the observation rule in the case of those EU RoO for which no CTC is specified. First, RoO based on the import content rule are equated to a change in heading (value 4) if the content requirement allows up to 50 percent of non-originating inputs of the ex-works price of the product. Value 5 is assigned when the share of non-originating inputs is below 50 percent, as well as when an import content criterion is combined with a technical requirement. Second, RoO featuring an exception alone is assigned value 1 if exception concerns a heading or a number of headings, and 2 if the exception concerns a chapter or a number of chapters. Third, RoO based on the wholly-obtained criterion are assigned value 7.

The observation rule is admittedly somewhat crude for accounting for the subtleties of the EU RoO as it does not account for the "soft" CTC criterion used by the EU. However, it does allow for comparing the EU and NAFTA RoO regimes.

In the case of the non-preferential RoO, a RoO that requires change in item or a change in item and an exception and/or TECH is coded as 1. When a change in item plus VC is required, a 2 would be assigned; however, empirically, there are no such cases.

In subheadings where an agreement on the RoO has yet to be reached, up to four RoO proposals are taken into account and the averages formed on the basis of these; in the handful of categories where there are more than four proposals, the four proposals included into the calculations are selected so as to capture the range of different proposals and restrictiveness values.

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[i] The build-down method is
RVC = (AV B VNM)/AV x 100;
the build-up method is:
RVC = VOM/AV x 100,

where RVC is the regional value content, expressed as a percentage;
AV is the adjusted value;
VNM is the value of non-originating materials used by the producer in the production of the good; and
VOM is the value of originating materials used by the producer in the production of the good.

[ii] The initial VC for chs. 28-40 is 40 percent for the first three years, 45 percent during the fourth and fifth years, and 50 percent starting in year six. For chs. 72-85 and 90, VC is 50 percent for the first five years, and 55 percent starting year six.

[iii] Capital goods require 60 percent RVC; other goods are governed by a 40 percent MC.

[iv] 50 percent MC rule applies to Colombia, Peru and Venezuela; products from Bolivia and Ecuador are governed by a 60 percent MC rule.

[v] Besides the 40 percent RVC rule, member states' citizens' share of the plant that produced the product must be at least 51 percent.

[vi] Drawback not mentioned in Hungary-Israel, Poland-Israel, Slovenia-Croatia, Slovenia-FYROM. Drawback allowed for the first two years in EU-Palestinian Authority, two and one half years in EFTA-Palestinian Authority, three years in EFTA-FYROM, one year in Bulgaria-FYROM, 3 months in Turkey-FYROM, and two years in Israel-Slovenia.

[vii] The Revised Treaty of Chaguaramas Establishing the Caribbean Community, including the CARCIOM Single Market and Economy stipulates that any member state needs to justify the need to apply an export drawback Council for Trade and Economic Development (COTED); COTED will review the use of drawback by members on an annual basis.

[viii] When products from the South Pacific Islands that are exported to New Zealand are cumulated with Australian inputs, a minimum of 25 percent of "qualifying expenditure" from South Pacific Islands is required.

[ix] Requires the expenditure on goods produced and labor performed *within the territory of the exporting* Member State in the manufacture of the goods to not less than fifty per cent of the ex-factory or ex-works cost of the goods in their finished state (emphasis added).