

## **Multilateralizing Preferential Rules of Origin around the World**

**Antoni Estevadeordal, Jeremy Harris and Kati Suominen\***

*Prepared for WTO/HEI/NCCR Trade/CEPR Conference  
“Multilateralizing Regionalism”  
10-12 September 2007, Geneva, Switzerland*

---

\* The authors are Manager, Economist, and International Trade Specialist, respectively, at the Integration and Trade Sector Department (INT) of the Inter-American Development Bank in Washington DC. Corresponding author: Suominen ([katis@iadb.org](mailto:katis@iadb.org)). The opinions expressed herein are those of the authors and do not necessarily reflect the official position of the IDB or its member countries. The authors wish to thank Santiago Florez Gomez for outstanding and persistent research assistance and comments.

## Multilateralizing Preferential Rules of Origin around the World

### *Abstract*

In this paper we describe how Rules of Origin (RoO) are defined around the world, and observe that their restrictiveness and complexity are driven by factors specific to each agreement, including economy size and development. Given the powerful political economy forces that generate and determine the origin regime, harmonization, insofar as this means requiring identical rules for unconnected RTAs, is not practical and could be harmful. However, one can imagine rules that, if agreed at the WTO, could serve to limit the distortions caused by the RoO of the ever-increasing number of RTAs (“multilateralizing” preferential RoO). Furthermore, one can posit mechanisms that would allow regions with particularly dense sets of overlapping RTAs (for example the Americas and perhaps Asia) to replace the spaghetti bowl with something more like a plate of lasagna (“convergence” processes). Finally, these two approaches can and should be mutually reinforcing, as convergence regimes should be established within the framework and limitations of multilateral rules, whereas the multilateral rules should be established in a way that promotes and facilitates the negotiation of such regimes.

### **I. Introduction**

The proliferation of regional trade agreements (RTAs) around the world has focused policy attention to preferential rules of origin (RoO). The concerns voiced over RoO are two-fold: restrictiveness and divergence. Restrictive RoO can introduce undue barriers to trade between RTA members and non-members, thus dampening RTAs’ trade-creating potential. Divergences in RoO across regimes can increase the transactions costs for countries and companies dealing on two or more RTA fronts simultaneously, especially as they may not cumulate inputs across agreements. These two issues are intricately linked: divergence matters more when RoO are binding—i.e., when restrictiveness is consequential for economic decisions and shapes firms’ production functions. Non-binding RoO around the world would obliterate the importance of divergence.

The purpose of this paper is to analyze the restrictiveness and divergence in RoO around the world, and to propose concrete ways for reducing them. In particular, we (1) discuss the costs of restrictiveness and divergence on global trade and investment flows and companies’ supply chain strategies; (2) strive to quantify the extent of restrictiveness in and divergences among some 58 RoO regimes around the world (which contain 74 sets of product-specific rules, Appendix I); and (3) put forth a number of policy options—including multilateralizing RoO at the global level, inducing convergence across RoO regimes in the main world regions, and some combination of the two—so as to facilitate trade and efficient production around the world.

We define “multilateralizing” RoO as the establishment of multilateral disciplines on preferential rules within the WTO framework that set guidelines to minimize the systemic harm that can be caused by the current uncoordinated approach. “Convergence” here is a process of establishing a common RoO regime that covers a set of RTAs, and subsequently permits cumulation among their members’ RTAs. Conversely, “divergence” here refers not only to the existence of different rules across agreements, but, in cases of overlapping agreements, also to the absence of cumulation of production across the agreements.

We reach three conclusions:

- RoO following the large, developed country models (PanEuro and NAFTA) are among the most restrictive. The data reveal that agricultural products and textiles and apparel are marked by particularly high restrictiveness scores. However, it is also the case that US agreements have become less restrictive over time. The more recent intra-Asian agreements tend to be less restrictive and complex than their counterparts in Europe and the Americas.
- There are marked divergences across RoO regimes around the world: on average about one third of all agreements’ rules will coincide on any given product. Nonetheless, there are clear RoO families centered around the United States, EU, and Mexico, in particular, which suggests potential for some form of regional RoO convergence. Moreover, there are some signs of a *de facto* cross-regional stylistic harmonization of RoO, as US-style agreements are spreading into Asia via the recent trans-Pacific agreements.
- The most ideal solution to the RoO tangle is a strategy of regional convergence governed by a multilateral agreement: putting in place some global guidelines for preferential RoO that would serve to counteract the tendency of larger cumulation zones to erect higher barriers to extra-zone inputs, while also striving to establish common RoO at megaregional levels in order to promote cumulation of production across the existing RTAs. In simple terms, global “capping” of RoO is important so as to not “converge” into trade-diverting megablocs.

The following section of this paper discusses the political economy and economic effects of RoO. Section three gives a descriptive overview of the general patterns in RoO by region. Section four puts forth various analytical measures of the degree of restrictiveness of product-specific RoO and flexibility provided by regime-wide RoO, and uses these measures to draw comparisons within and across RoO regimes. The fifth section goes to the policy recommendations. Section six concludes.

## **II. What Are RoO and What Do They Do?**

The economic justification for RoO is to curb trade deflection—to avoid products from non-RTA members being transshipped through a low-tariff RTA partner to a high-tariff one. As such, RoO are an inherent feature of free trade agreements (FTAs) where the

member states' external tariffs differ as the members wish to retain their individual tariff policies vis-à-vis the rest of the world (ROW). RoO are also widely used in customs unions (CUs), either as a transitory tool in the process of moving toward a common external tariff (CET), 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. Thus, basically all RTAs contain rules for establishing the origin of goods.

Since a failure to meet the RoO disqualifies an exporter from the RTA-conferred preferential treatment, RoO can and must be seen as a central market access instrument reigning over preferential trade. Notably, the relevance of RoO as gatekeepers of commerce can accentuate over time: RoO remain in place even after preferential tariffs have been phased out. Thus, initially governing access to a small preference, RoO have little capacity for distortion; however, as the tariffs are phased out, the distortionary potential of RoO grows.<sup>1</sup>

What makes RoO particularly relevant is that they are not a neutral instrument: given that RoO can serve as an effective means to deter transshipment, they can tempt political economy uses well beyond the efforts to avert trade deflection. Indeed, RoO are widely described as a trade policy instrument that can work to offset the benefits of tariff liberalization.<sup>2</sup> Often negotiated at up to the 8- or 10-digit level of disaggregation, RoO, like the tariff, make a superbly targetable instrument. Most prominently, RoO can be employed to favor intra-RTA industry linkages over those between the RTA and the ROW, and, as such, to indirectly protect RTA-based input producers vis-à-vis their extra-RTA rivals (Krueger 1993; Krishna and Krueger 1995). As such, RoO are akin to a tariff on the intermediate product levied by the country importing the final good (Falvey and Reed 2000; Lloyd 2001), and can be used by one RTA member to secure its RTA partners' input markets for the exports of its own intermediate products (Krueger 1993; Krishna and Krueger 1995).<sup>3</sup>

Empirical studies provide grounds for believing that RoO are indeed used for political economy purposes. Estevadeordal (2000) and Suominen (2004) focus on the political economy of RoO in the North American Free Trade Agreement (NAFTA) and EU-Mexico RTA, respectively, finding that tariffs and restrictiveness of RoO are driven by the same political economy dynamics, and that RoO play an independent role in arbitrating preferential tariff liberalization. Producers that lobby for the most demanding RoO also lobby for, and obtain, the longest tariff phase-outs. Harris (2007) examines determinants of RoO restrictiveness in a panel of five RTAs in the Americas and finds that restrictiveness respond to the interests of both domestic producers seeking protection and exporters seeking access to protected markets.

---

<sup>1</sup> Throughout this paper, we assume this latter scenario has unfolded.

<sup>2</sup> For example, Hirsch (2002), Estevadeordal and Suominen (2006b), Cadot, Estevadeordal and Suwa-Eisenmann (2006).

<sup>3</sup> Furthermore, given that RoO hold the potential for increasing local sourcing, governments can use RoO to encourage investment in sectors that provide high value added and/or jobs (Jensen-Moran 1996; Hirsch 2002).

The policy implication of these findings are clear: stringent RoO plus long phase-outs are the price integrationist forces will need to pay not only for RTA formation, but for foregoing manifold exclusions and building a meaningful, comprehensive, and liberalizing RTA. Furthermore, while RoO may be a necessary hurdle to unfettered free trade within RTAs, there is evidence that exporter interests also affect restrictiveness. Do RoO, then, distort economic outcomes?

Carrère and de Melo (2006) examine the rates at which US imports from Mexico take advantage of the NAFTA preferences, finding that RoO indeed stifle incentives to qualify for tariff preferences: preference margins of 10 percent would be needed to compensate for the costs of complying with a typical RVC rule of origin. Cadot et al. (2002) disentangle NAFTA's non-RoO and RoO-related administrative costs, finding the latter to approximate two percent of the value of Mexican exports to the US market.

Suominen (2004) and Estevadeordal and Suominen (2006b) examine the trade effects of RoO in some 100 RTAs, finding that restrictive and selective RoO discourage trade flows. At the sectoral level, both restrictive RoO and selectivity in RoO in final goods encourage trade in intermediate goods—which can mean that restrictive RoO engender trade diversion in inputs. However, some regime-wide RoO—RoO that apply similarly to all sectors in a given RTA yet vary across RTAs, such as cumulation and *de minimis*—allow for flexibility in the application of product-specific RoO and thus facilitate trade. As such, various regime-wide RoO provisions can counteract restrictive product-specific RoO's negative effects on trade.

Estevadeordal, López-Córdova and Suominen (2006) analyze the sectoral *investment* effects of NAFTA RoO in Mexico, finding both that foreign direct investment in post-NAFTA Mexico has flowed in sectors with flexible RoO, and that flexible RoO in downstream industries encourage investment upstream. Both findings suggest that NAFTA-era investment in Mexican final and intermediate goods industries has been made by efficient, globally competitive firms thriving on flexible RoO.

Augier, Gasiorek, and Lai-Tong (2005) study of the effects of expanding cumulation within a set of countries already linked by RTAs. They find that the inability to cumulate production across “spoke” economies in a hub-and-spoke arrangement depresses trade among the spokes by 10 to 70 percent. If extending cumulation has such an effect, then the rules were distorting trade after all. The policy implication is that broadening cumulation should be encouraged in further settings.

Less well understood than the trade and investment effects of a given RoO regime or set of regimes are the effects of divergent RoO *across* regimes. Hypothetically, if the various agreements carry widely distinct RoO, they can impose undue transaction costs for traders, investors, and governments dealing in several RTA markets simultaneously (than in the counterfactual case where the rules of the various RTA are exactly the same). IADB (2007) is the first attempt to measure RoO divergence, and IADB (2008) will strive to understand the effects of RoO divergence to companies operating on multiple

RTA theaters. The below exercises are hoped to provide a firmer grasp of RoO divergence—while still not measuring its economic impact.

### **III. Rules of Origin around the World: A Descriptive Mapping**

This section provides a useful prelude to analyzing RoO restrictiveness and divergence by describing the types of preferential RoO used in selected RTAs around the world. Appendix I provides a detailed description of the various types of rules. We subsequently discuss the structure of non-preferential RoO.

#### **A. Product-Specific RoO**

##### ***i. Europe: The Paneuro System***

The RoO regimes employed across the EU's RTAs are highly uniform. This owes largely to the European Commission's drive in the 1990s to harmonize EU's RoO protocols with the European Free Trade Association (EFTA) countries that dated from 1972 and 1973, as well as across the EU's RTAs forged in the early 1990s in the context of the European Agreements with Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Romania.<sup>4</sup> The harmonization work culminated in 1997 in the launch of the Paneuro system, which established identical RoO protocols across the EU's existing RTAs, providing for cumulation among the participating countries. The Commission's regulation 46 of January 1999 reiterates the harmonized protocols, outlining the so-called Single List RoO. These RoO are highly complex, combining change of tariff classification mainly at the heading level with exceptions, value content (VC) rules, and technological requirements, and varying markedly across products. However, the harmonized RoO do not represent a dramatic break with those of the pre-1997 era.<sup>5</sup>

The Single List became incorporated in the Euro-Mediterranean Association Agreements between the EU and the various southern Mediterranean countries, and the system of cumulation operates among the regional countries that have signed bilateral agreements with each other. The so-called Paneuro-Med cumulation zone covers the 27 EU members and is gradually incorporating 17 other countries or territories.<sup>6</sup>

<sup>4</sup> See Driessen and Graafsma (1999) for review.

<sup>5</sup> For example, the RoO in nearly 75 percent of the products (in terms of tariff subheadings) in Paneuro and the original EU-Poland RoO protocol published in 1993 are identical. Both the new and the old versions combine CTC with VC and/or TECH. Indeed, EU RoO feature remarkable continuity: the RoO of the European Community-Cyprus RTA 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 a stand-alone import content criterion.

<sup>6</sup> The system of Paneuro-Med system of cumulation operates between the EU and the member states of the European Free Trade Association (Iceland, Liechtenstein, Norway and Switzerland) and Turkey, and countries which signed the Barcelona Declaration, namely Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Syria, Tunisia and the Palestinian Authority of the West Bank and Gaza Strip. Faroe Islands have been added to the system as well.

The Paneuro RoO model is incorporated also in the EU's RTAs outside the cumulation zone, including EU's Stabilization and Association Agreements with Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia and Serbia and Montenegro, and the EU's extra-regional RTAs with South Africa, Mexico, and Chile.<sup>7</sup> 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 are nearly identical to the Paneuro rules. European Free Trade Association's (EFTA) recently concluded RTAs with Mexico and Singapore also follow the model, albeit providing an additional alternative rule in selected sectors—such as plastics, rubber, textiles, iron and steel products, and some machinery products.

## *ii. The Americas: RoO Poles*

There is more variation across RoO regimes in the Americas. Nevertheless, distinct RoO families can be identified.<sup>8</sup> One extreme is populated by the traditional trade agreements such as the Latin American Integration Association (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 of the final good) plus a handful of specific rules applicable to specific products. The LAIA model is the point of reference for RoO used in the Andean Community (CAN) and Mercosur, as well as the agreements between them and with Chile. The Caricom rules of origin are also based on a general change of heading requirement, though the exceptions to this general rule have a flavor more reminiscent of the Paneuro rules and their predecessors.

At the other extreme lie the so-called new generation RTAs such as NAFTA, which is used as a reference point for subsequent US and Canadian agreements in the hemisphere (US-Chile, US-Colombia, US-Peru, Chile-Canada, Canada-Costa Rica RTAs and US-Central America-Dominican Republic RTA, or CAFTA), as well as many of Mexico's agreements, including the Mexico-Costa Rica, Mexico-Chile, Mexico-Bolivia, Mexico-Nicaragua, Mexico-Northern Triangle (El Salvador, Guatemala, and Honduras), and Mexico-Colombia-Venezuela (or G-3) RTA. The RoO regimes in these agreements may require a change of chapter, heading, subheading 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.

The Central American Common Market's (CACM) RoO regime can be seen as located between those of Mercosur and NAFTA: it uses chiefly change in tariff classification only, but in 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. CAFTA co-exists with the CACM's market access mechanisms under the so-called multilateralism principle, which allows Central American producers to choose between the CACM and CAFTA market access regimes when exporting to the other

<sup>7</sup> See Estevadeordal and Suominen (2003).

<sup>8</sup> See, for example, Garay and Cornejo (2002) and Estevadeordal and Suominen (2005).

Isthmus markets. A third set of RoO will exist as an option for trade between CACM countries and the Dominican Republic.

Notably, unlike the EU's pattern of following the Paneuro system even in extra-regional RTAs, US bilateral RTAs with extra-Hemispheric partners—Jordan and Israel—diverge markedly from the NAFTA model, operating on VC alone. US agreements with Morocco, Bahrain, and Oman also use VC almost exclusively, except for textile products where the tariff-shift NAFTA-style rules are applied.

### *iii. Trans-Pacific Agreements*

RTAs of the Americas are shaping the RoO regimes negotiated between countries of the Americas and Asia. US agreements with Singapore, Australia, and Korea are complex and resemble CAFTA RoO; meanwhile, RoO in the Chile-Korea RTA follow the model of US-Chile RoO. However, these trans-Pacific agreements are less complex overall than their counterparts in the Americas, featuring a strong change of heading component. Peru's agreement with Thailand, and Chile's agreement with Japan and the P4 agreement (Brunei, Chile, New Zealand, and Singapore), as well as Mexico's agreement with Japan all follow the detailed, selective model inherited from their agreements with the United States. Chile's agreement with China stand in contrast to these, applying an across the board VC rule with a handful of exceptions where change of chapter or change of heading are applied.

Meanwhile, further European overtures to the Asian front, such as toward ASEAN and India, will likely bring the Paneuro model to accompany the US model in the region even more.

### *iv. Asia: Multiple Influences*

Some of the main integration schemes in Asia—the ASEAN Free Trade Area, the ASEAN-China and ASEAN-Korea agreements, the Bangkok Agreement, the Australia-Singapore Free Trade Agreement, and South Pacific Regional Trade and Economic Cooperation in Asia-Pacific (SPARTECA)—carry an across-the-board VC rule with relatively few exceptions. However, the proliferation of RTAs in Asia has delivered complexity to the region's RoO theater, especially as these countries have entered into agreements with extra-regional partners.

The RoO of the Japan-Singapore Economic Partnership Agreement are complex, as evinced by the more than 200-page RoO protocol. However, much like in the Chile-Korea RTA, many of the Japan-Singapore RoO are based on a simple change in heading criterion, which makes the regime much less complex when contrasted with the Paneuro and NAFTA models. Furthermore, for many products JSEPA introduces an alternative, usually Paneuro-type, free-standing VC rule, which instills generality and flexibility to the agreement. Japan's agreements with Malaysia and Thailand, on the other hand, repeat the more complex set of rules seen in Japan's agreement with Mexico.

The Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) recently replaced their across-the-board VC rule with a set of rules that are quite similar to the rules established in the US-Australia regime. Australia and New Zealand have also entered into separate agreements with Thailand that carry a similar variety of rules.

#### *v. Africa and the Middle East*

The relative complexity of RoO in Europe, the Americas, and, increasingly, in Asia stands in contrast to the generality of RoO in many African and Middle Eastern RTAs. The Economic Community of West African States (ECOWAS) and the Common Market for Eastern and Southern Africa (COMESA) 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 30 percent (ECOWAS) to 40 percent (COMESA).<sup>9</sup> Some of the agreements allow, or, indeed, require, RoO to be calculated on the basis of import content. Most of these regimes also specify an alternative RoO based on the CTC criterion; most often the alternative involves a change in heading or, in the case of ECOWAS that has a relatively low RVC requirement of 30 percent, change in subheading.

However, the Southern African Development Community (SADC) RoO approximates the Paneuro model both in *types* of sectoral RoO and in sectoral selectivity. Moreover, there have been some initiatives to renegotiate COMESA RoO; such attempts may well eventually lead to regimes of greater complexity.

#### *vi. 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. Unlike preferential RoO that have thus far escaped multilateral regulation, non-preferential RoO have been under a process of harmonization since 1995 as mandated by the Uruguay Round's Agreement on Rules of Origin (ARO). Indeed, the rapid evolution of the preferential RoO panorama stands in contrast to the glacial progress of harmonizing non-preferential RoO. The harmonization work, propelled precisely by growing concerns about the divergent national RoO's effects on trade flows, has been carried out under the auspices of the Committee on Rules of Origin (CRO) of the World Trade Organization (WTO) and the Technical Committee on Rules of Origin (TCRO) of the Brussels-based World Customs Organization. The latter has been responsible for the technical part of the work, including discussions on the RoO options for each product.

The harmonization drive was initially scheduled for completion by July 1998. However, the deadline has been extended several times since then. As of now, the pending product-specific issues involve some 30 products. There are also two major issues that have yet to be resolved—use of the value added vs. change in tariff classification principle in

---

<sup>9</sup> This is the general case, for some products the rule is 35% regional content measured at Factory Cost.

assembly in Harmonized System chapters 84-90, and implementation issues, particularly the use of the harmonized non-preferential RoO in anti-dumping cases.<sup>10</sup>

The non-preferential RoO harmonization process is at least in theory consequential to the future of preferential RoO: ARO's Common Declaration with Regard to Preferential Rules of Origin spells out the intent by the ARO signatories to subject also preferential RoO to harmonization, and to use the harmonized non-preferential RoO as the blueprint in the process.<sup>11</sup>

In their current structure, the non-preferential RoO approximate the Paneuro and NAFTA models in sectoral specificity, yet are less demanding than either of the two main RoO regimes. However, since the final agreements has yet to be reached, the ultimate degree of complexity and restrictiveness of the non-preferential RoO remains to be gauged.

### *vii. Depicting Product-Specific RoO around the World*

This part maps out RoO regimes around the world by their various components discussed above. Figure 1 focuses on the first RoO component and a staple of most RoO regimes, the change of tariff classification (CTC) criterion, in the RoO regimes of 74 RTAs around the world.<sup>12</sup>

Some families emerge. For example, the Andean Community as well as Mercosur and its agreements with other South American countries make very extensive use of the change in heading criterion, whereas US, Mexican, and most Chilean agreements use a mix of CTC criteria. RoO built upon the NAFTA RoO regime are based on change of heading and change of chapter criteria at relatively even quantities. The US-Chile RTA and CAFTA stand somewhat apart from the NAFTA format for requiring only change in subheading for a substantial number of tariff lines. Meanwhile, the Chile-CACM RTA diverges from the NAFTA model due to its marked change in heading-component, as do the Japan-Singapore and Chile-Korea RTAs. In contrast, the change of heading-criterion dominates EU RoO.

The Japan-Singapore agreements relies on a default rule of “Wholly Obtained” for products with no other rule specified in the agreement annex, and then relies heavily on change of Heading. In contrast, ASEAN uses CTC for a very small number of products, and in its agreements with China and Korea not at all, as is the case in COMESA and

---

<sup>10</sup> ARO states that non-preferential rules are to be the basis for antidumping actions. However, some WTO members, such as the United States, Korea, and Japan, have argued that the calculation of the margin of dumping—the wedge between the price of the exported good and its value in the domestic market—is per the Agreement on Anti-Dumping based on the concept of exporting country and not on the country of origin. Many members also resist the application of harmonized RoO in anti-dumping actions because of the changes and constraints this would impose on their respective domestic anti-dumping legislations.

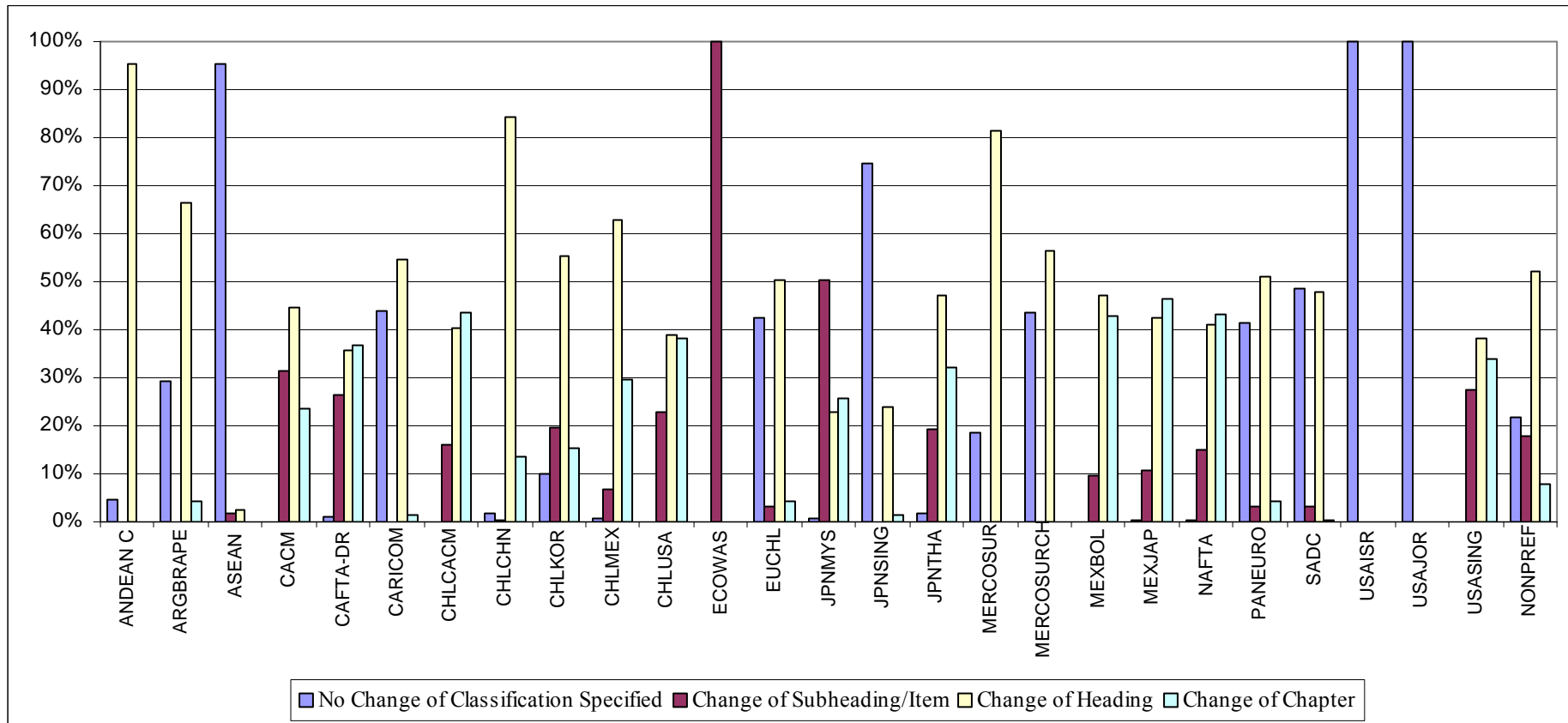
<sup>11</sup> There are some institutional issues that would have to be dealt with. Preferential RoO have fallen under the responsibility of the WTO Committee on Regional Trade Agreements, rather than being dealt with by the CRO. For their part, GSP RoO are the responsibility of the Committee on Trade and Development.

<sup>12</sup> The figure is based on the first RoO only when two or more possible RoO are provided for a tariff subheading.

ECOWAS. SADC and the EU's regimes depend on a fairly even split between change of heading and non-CTC rules.

Table I-1 in the appendix presents a highly disaggregated description of the different criteria combinations used.

**Figure 1 - Distribution of CTC Criteria by Agreement, Selected RTA**



*Source:* Authors' Calculations on the basis of RTA texts.

Another notable difference between the various RTAs is that some, such as the Bangkok Agreement, 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.<sup>13</sup> Table 1 centers on the level of the VC criterion in the tariff subheadings governed by VC (including combinations of VC with CTC, and VC when employed as an alternative to a CTC criterion) in various RoO regimes and the different calculation methods set forth. The most usual level of VC is 40-50 percent, whether defined as maximum import content or as RVC. However, in the US-Chile RTA, CAFTA, and Chile-CACM RTA, RVC is generally set at lower levels of 30-35 percent; conversely, for some products in the Paneuro and SADC regimes, the permitted value of non-originating inputs of the price of the final product is as low as 15-30 percent (roughly equivalent to a 70-85 percent RVC requirement). Differences in the method of calculation can have crucial implications to the exporters' capacity to meet the RoO.

**Table 1 – VC Criteria by Agreement**

	Regional Value Content/ Build-Up	Build-Down	Maximum Imported Content	Factory Cost	Net Cost
Andean Community			50-55		
Argentina-Brazil-Peru			50		
Argentina-Colombia			40-55		
Argentina-Ecuador			40-55		
Argentina-Venezuela			40-55		
ASEAN	40				
ASEAN-China	40		60		
ASEAN-Korea	35-70	40			
Australia - New Zealand	35-55	30-45		45-60	
Australia-Singapore	30-50				
Australia-Thailand	40-55				45
BANGKOK			50		
Brazil-Colombia			40-55		
Brazil-Ecuador			40-55		
Brazil-Venezuela	55		40-50		
CAFTA-Dominican Republic	30-65	25-55			35
Canada-Costa Rica	30-60				20-30
Caricom			30-65		
Chile-Canada	30-65				20-55
Chile-China	40-50				
Chile-Ecuador			50		
Chile-Korea	45-80	30			
Chile-CACM	20-30				
Chile-Mexico	32-50				26-40

<sup>13</sup> 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 imposes 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.

	Regional Value Content/ Build-Up	Build-Down	Maximum Imported Content	Factory Cost	Net Cost
Chile-Peru		50	50		
USA-Chile	40-65	30-55			
Chile-Colombia	30-70				
COMESA			60	35	
ECOWAS				30	
EU-Chile				20-50	
EU-Mexico				20-60	
G-3	35 -60				
Japan-Malaysia	40-60				
Japan-Singapore	40-60				
Japan-Thailand	40				
Mercosur	60		40		
Mercosur-Bolivia	60	40	40		
Mercosur -Chile	60	40			
Mexico-Bolivia	50				40-60
Mexico-Costa Rica	50				40-60
Mexico-Japan	50-90				
Mexico-Nicaragua	50				40-41.66
Mexico-Northern Triangle	50				
Mexico-Uruguay	50-55		50		40-50
NAFTA	30-80				25-70
P4	45-50				
Peru-Thailand	35-60				
Paraguay-Colombia			50		
Paraguay-Ecuador			50-60		
Paraguay-Peru			50		
Paraguay-Venezuela			50		
SADC	40-65				30-65
SAFTA	25-60		60		
Thailand-India	20-40				
Thailand-New Zealand	50				
Uruguay-Colombia			50		
Uruguay-Ecuador			50		
Uruguay-Peru			50		
Uruguay-Venezuela			50		
USA-Australia	45-65	35-50			50
USA-Bahrain	35				
USA-Colombia	35-65	20-65			35
USA-Israel	35				
USA-Jordan	35-60				
USA-Korea	30-60	30-55			35
USA-Morocco	35				
USA-Panama	30-65	20-55			35
USA-Peru	30-65	20-65			35
USA-Singapore	40-65	30-55			

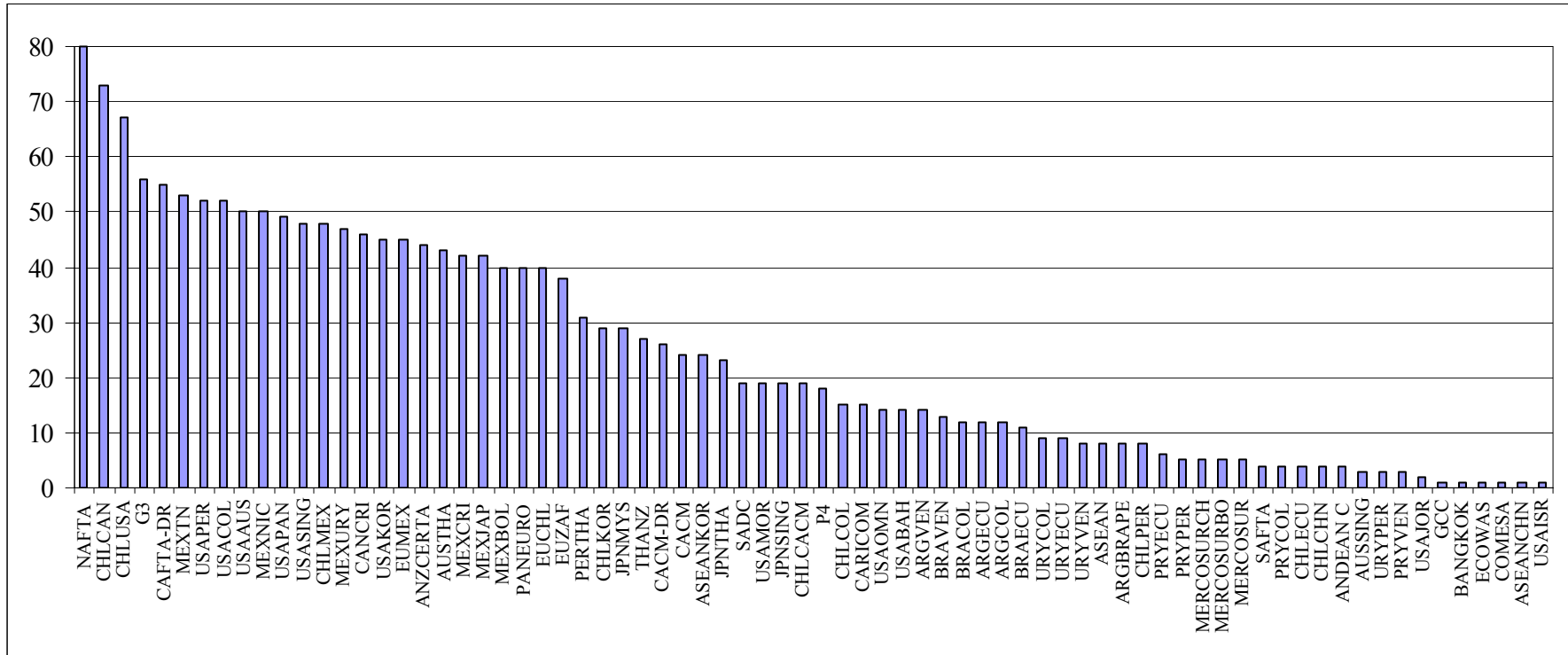
**Source:** Authors' calculations on the basis of RTA texts.

The various RoO employed in regimes around the world give a total of 211 potential combinations of RoO criteria. Figure 2 collapses the number of RoO types by the various regimes, analyzing the number of RoO permutations by regime<sup>14</sup>. NAFTA is the most complex of the agreements in the sample, followed by the two agreements most closely modeled on it, those of Canada and the US with Chile. Other agreements modeled on the NAFTA as well as the EU's agreements are generally the most complex. Agreements within South America, Africa, and Asia are generally the simplest.

---

<sup>14</sup> Permutations are based on Harris (2007) categorizations of Change of Classification, Addition, Exception, Value Test, Technical Requirement, and Alternative criteria components (See Appendix 2).

Figure 2 – RoO Permutations



Source: Authors' calculations on the basis of RTA texts.


## B. Regime-Wide RoO

Besides product level RoO, the different RoO regimes can be compared by their general, regime-wide RoO that apply similarly to nearly all goods with a regime. Table 2 contrasts the various RoO regimes by three key regime-wide RoO—*de minimis*, cumulation, and certification. While we do not analyze these RoO in detail in this paper, the point to keep in mind is that RoO regimes are immensely complex even beyond the product-specific RoO. As such, measures of RoO types, as well as of restrictiveness of product-specific rules, should be used as but one indicator when RoO analyzing regimes.

**Table 2 – Regime-Wide RoO in Selected RTAs**

RTA	De Minimis	Extended Cumulation	Certification Method
Andean Community	None	No	Public (or delegated to a private entity)
ANZCERTA	10%	No	Public (or delegated to a private entity)
ASEAN	None	No	Public (or delegated to a private entity)
ASEAN - China	None	No	Public (or delegated to a private entity)
ASEAN - Korea	10 (10% of weight in chs. 50-63)	No	Public (or delegated to a private entity)
Australia - Thailand	10%	No	Public (or delegated to a private entity)
BANGKOK	None	No	Public (or delegated to a private entity)
CACM	10 (10% of weight in chs. 50-63)	No	Self-certification
CACM - Chile	8% (not chs. 1-27 unless CS)	No	Self-certification
CAFTA - Dominican Republic	10% (Not chs 4 & 15)	Possibly Ch. 62 (w/Canada and Mexico)	Self-certification
Canada - Costa Rica	10% (excep. in chs 10 to 24; 10% of weight in chs. 50-63)	No	Self-certification
Canada - Chile	9% (excep. in agric. and ind. products; 9% of weight in chs. 50-63)	No	Self-certification
Canada - Israel	10% (excep. in agric. and industrial products; 7% of weight in chs. 50-63)	Yes (w/ USA)	Self-certification
Caricom	None	No	Public (or delegated to a private entity)

<b>RTA</b>	<b>De Minimis</b>	<b>Extended Cumulation</b>	<b>Certification Method</b>
Chile - China	8%	No	Public (or delegated to a private entity)
Chile - Colombia	1010% (except in agriculture and processed agriculture products; 10% of weight in textile).	No	Public; limited self-certification
Chile - Ecuador	None	No	Public; limited self-certification
Chile - Korea	8% (not chs. 1-24 unless CS; 8% of weight in chs. 50-63)	No	Self-certification
Chile - Peru	None	No	Public; limited self-certification
COMESA	2%	No	Two-step private and public
ECOWAS	None	No	Public (or delegated to a private entity)
EU - Chile	10% (Except chs. 50 - 63)	No	Public; limited self-certification
EU - Mexico	10% (Except chs. 50 - 63)	No	Public; limited self-certification
EU - South Africa	15% (10 for chs 3 & 24) (not chs. 50 to 63)	Yes with ACP (full with SACU)	Public; limited self-certification
G3	7 (7% of weight in chs. 50-63)	No	Two-step private and public
Gulf CC	None	No	Public (or delegated to a private entity)
Japan - Malaysia	To be determined	Limited products from ASEAN	Public (or delegated to a private entity)
Japan - Thailand	To be determined	Limited products from ASEAN	Public (or delegated to a private entity)
Japan - Singapore	To be determined	No	Public (or delegated to a private entity)
Mercosur	None	No	Public (or delegated to a private entity)
Mercosur - Bolivia	None	Yes (Bolivia may cumulate from LAIA)	Public (or delegated to a private entity)
Mercosur - Chile	None	No	Public (or delegated to a private entity)
Mercosur- COL – ECU – VEN	None	Yes (within Mercosur and Andean Com.)	Public (or delegated to a private entity)
Mercosur - Peru	None	Yes (within Mercosur and Andean Com.)	Public (or delegated to a private entity)
Mexico - Nicaragua	7% (excep. Chs 01 to 27 & 50 to 63)	No	Self-certification
Mexico - Northern Triangle	7% (excep. Chs 01 to 27 & 50 to 63)	No	Self-certification
Mexico - Uruguay	8% (excep. Chs 01 to 27 & 50 to 63)	No	Self-certification

<b>RTA</b>	<b>De Minimis</b>	<b>Extended Cumulation</b>	<b>Certification Method</b>
Mexico - Bolivia	7% (not chs. 1-27 unless CS; not chs. 50-63)	No	Self-certification
Mexico - Chile	8% (except in agric. and ind. products; 9% of weight in chs. 50-63)	No	Self-certification
Mexico - Costa Rica	7% (except in chs. 4-15 and headings 0901, 1701, 2105, 2202)	No	Self-certification
NAFTA	7% (exceptions in agric. and ind. products; 7% of weight in chs. 50-63)	No	Self-certification
P4	10%	No	Self-certification
PANEURO	10% (8 - 10% of weight in textiles)	Yes (full in EEA)	Public; limited self-certification
Peru - Thailand	10%	No	Public (or delegated to a private entity)
SAFTA	None	No	Public (or delegated to a private entity)
SADC	10% (not chs. 50-63, 87, 98)	No	Two-step private and public
Singapore - Australia	2%	No	Public (or delegated to a private entity)
Thailand - New Zealand	10%	No	Self-certification 
USA - Korea	10% (by weight in textiles; except in agriculture and processed agriculture products)	No	Self-certification
USA - Panama	10% (by weight in textiles; except in agriculture and processed agriculture products)	Possibly for Chapter 61 or 62	Self-certification
USA - Colombia	10% (by weight in textiles; except in agriculture and processed agriculture products)	Possibly with Peru	Self-certification
USA - Peru	10% (by weight in textiles; except in agriculture and processed agriculture products)	Possibly with Colombia	Self-certification
USA - Australia	10% (except in agriculture and processed agriculture products)	No	Self-certification
USA - Bahrain	None	Possibly with regional counties	Self-certification
USA - Chile	10% % (by weight in textiles; except in agriculture and processed agriculture products)	No	Self-certification
USA - Israel	None	Yes (West Bank and Gaza)	Self-certification
USA - Jordan	None	QIZ cumulation from Israel	Self-certification

RTA	De Minimis	Extended Cumulation	Certification Method
USA - Singapore	10% (except in various agriculture products; 7% of weight in chs. 50-63)	ISI*	Self-certification

\*Integrated Sourcing Initiative. Primarily ICT products need not meet any rule of origin if shipped directly between the signatories.

*Source:* Authors' calculations on the basis of RTA texts.

### *i. De Minimis*

*De minimis* is a provision that seeks to soften the rough edges of CTC-based rules of origin. CTC rules are a very binary sort of test, with non-originating inputs either meeting the criteria or not, regardless of their real significance in the context of the final product as a whole. What *de minimis* provisions allow then is for goods to qualify as originating despite having some minimal content of non-originating inputs that do not meet the CTC requirements.

EU RoO regimes feature a higher *de minimis* (at 10 percent) than NAFTA and some other RTAs in the Americas; though most of the newer RTAs apply the higher level (US-Chile, CAFTA, US-Colombia, US-Peru) where the *de minimis* level is the same as in Paneuro. Meanwhile, there is no *de minimis* rule in Mercosur's RTAs or in most RTAs in Asia and Africa. However, the principle does have exceptions in most regimes: for example, 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 RTA, *de minimis* is set at 15 percent but excludes fish and crustaceans, tobacco products, as well as certain meat products and alcoholic beverages. NAFTA *de minimis* is also calculated based on weight rather than values for textiles and apparel, and 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). Many of these exceptions also appear in subsequent US, Canadian, and Mexican RTAs.

### *ii. Cumulation*

For purposes of the policy questions we wish to address in this paper, we define a more simplified taxonomy of cumulation types than is generally used in the literature. Bilateral Cumulation we define as provisions that permit goods that are qualify as originating in any one signatory country to be considered as such when incorporated in to a subsequent product in another signatory country. For our purposes, bilateral cumulation can be based either on products or processes (full cumulation).<sup>15</sup> We next define Extended Cumulation as provisions, which allow some use of inputs from non-signatories. This sort of cumulation includes diagonal cumulation as a special case. Extended cumulation is the mechanism by which the spaghetti bowl problem can begin to be ameliorated.<sup>16</sup>

<sup>15</sup> The distinction between cumulation based on products or processes is significant, but it is not essential to our later policy analysis.

<sup>16</sup> See also Cornejo and Harris (2007) for extended discussion of this idea. We discuss these implications in the multilateral context in Section V below.

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. In concrete terms, the system enables producers to use components originating in any of the participating countries without losing the preferential status of the final product. This provision is only available, however, when these countries also have RTAs in force among them, which is not yet true in many cases. The European Economic Association (EEA) agreement between EU and EFTA also permits full cumulation.

The EU's agreements with extra-regional partners do not form part of the Paneuro system, but they do in some cases allow for extended cumulation. The EU-South Africa RTA allows both parties to cumulate diagonally with the ACP states. In addition, it incorporates the "single territory" concept, whereby South Africa can calculate working or processing carried out within the Southern Africa Customs Union (SACU) area as if these had been performed in South Africa (but not in the EU). The EU's agreements with Mexico and Chile, on the other hand, do not contain provisions for cumulation from any countries other than the direct signatories. The hypothetical reasons why these two agreements, despite lacking access to the Paneuro system of cumulation, still adopted the Paneuro RoO include EU's desire to minimize transactions costs for its customs and exporters operating on multiple RTA theaters at once, and/or the parties' hypothetical desire to enable rapid accession to the Paneuro system of cumulation in a future date (as identical RoO would be required for such an accession to occur).

There are various examples of extended cumulation that is not extensive enough to be properly considered diagonal. In the SPARTECA agreement, Australia and New Zealand allow members of the South Pacific Forum islands to cumulate among themselves and still receive preferential treatment. The Forum islands may not, however, cumulate inputs from New Zealand to export to Australia, or vice versa, as trade between Australia and New Zealand is governed by the ANZCERTA agreement (which does not provide for cumulation of Forum country-originating inputs).<sup>17</sup>

For reasons probably more political than economic, cumulation in US agreements with Israel and Jordan is similarly tangled and limited. The US-Israel RTA permits cumulation of inputs from the West Bank and the Gaza Strip, but not Jordan. Prior to the negotiation of an RTA with Jordan, the US established a classification of "Qualifying Industrial Zones (QIZ) with Jordan and also with Egypt. This program allowed for cumulation of inputs from Israel, the West Bank, and Gaza, but not between Jordan and Egypt. The subsequent RTA between Jordan and the US includes rules that permit cumulation only bilaterally, but the QIZ program remains in effect, allowing continuation of the cumulation of inputs from Israel and the Palestinian territories. The QIZ, however, are still a unilateral concession of the US, not a bilateral treaty obligation like the RTA. The Canada-Israel RTA permits cumulation with the two countries' common RTA partners as of the agreement's entry into force, a set of countries which includes the United States and no other. Unlike the political issues that undoubtedly complicate the US agreements, this extension of cumulation most likely accommodates existing integration of Canadian industry with US suppliers.

---

<sup>17</sup> The ANZCERTA rules were completely renegotiated in 2006 with the new rules going into force in 2007.

The DR-CAFTA agreement between the US, Central America, and the Dominican Republic contains provisions for cumulation of inputs from Canada and Mexico in the production of Garments of woven fabric (HS Chapter 62). These provisions are subject to negotiation of origin verification protocols different from those in NAFTA as well as adjustments to the rules in the agreements of the Central American countries with Mexico. Thus far, Mexico has participated actively in the negotiation and implementation of these changes, while Canada has shown less interest. This provision is available to the Dominican Republic for a transition period, by the end of which they must negotiate a RTA with Mexico in order for it to remain in effect<sup>18</sup>.

Elsewhere in Latin America, there are other cases of tangled-up attempts at extended cumulation. One case in point is the recent agreements between Mercosur and the Andean Community. While these agreements share a common origin text, including a provision for cumulation that includes all nine countries (including Bolivia), the product-level rules were negotiated bilaterally, resulting in 16 full sets of rules. Because these rules are not uniform across bilateral relationships, there are many opportunities for “triangulation” wherein minor processes undertaken in one country can confer origin for purposes of export to a given partner when those same processes would not confer origin for the same partner if undertaken in a third member of the group.<sup>19</sup> While there have been some initial attempts to mitigate this problem, no clear solution has yet been seen.

Singapore’s RTAs incorporate the outward processing (OP) concept tailored to accommodate Singapore’s unique economic features and its access to low-cost processing in neighboring countries.<sup>20</sup> The US-Singapore RTA also incorporates the integrated sourcing initiative (ISI), which provides further flexibility in sourcing. Japan’s agreements with Malaysia and Thailand include rules that specifically allow for cumulation of inputs from an ASEAN country. These rules are concentrated in just a few agricultural products and in textiles and apparel.

### *iii. Certification*

The purpose of establishing origin certification procedures is to put in place a mechanism for ensuring that preferences are granted only to originating goods, and to establish a system of checks on the accuracy and veracity of claims for preferential treatment. The method of certifying origin is important insofar as it is effective in achieving these objectives at a minimum possible administrative cost.

The method of certifying origin varies across RTAs. Three fundamental systems can be identified. The official certifying entity can be either an interested party or a third party, and the third party can be the exporting country’s government or a designated private entity. Interested parties include the producer, exporter, or importer (in many cases these three may be one and the same). Designated private entities are generally chambers of commerce or other industry associations.

EU RoO regimes require the use of a movement certificate that is issued by the exporting country government once application has been made by exporter or the exporter’s

<sup>18</sup> The beginning of these negotiations has already been announced.

<sup>19</sup> See Table 8 of Cornejo and Harris (2007) for an analysis of the differences in the product-level rules of these agreements.

<sup>20</sup> See Estevadeordal and Suominen (2006a).

competent agency. However, the EU regimes provide for an alternative method of certification by interested parties, 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. The fact that provision has been made for the authorization of interested party certification implies that there are recognized cost savings in avoiding the governmental certification process. The need to be authorized, however, may in some cases serve as something of a barrier to entry for new exporters.

Meanwhile, NAFTA and a number of other RTAs in the Americas as well as the Chile-Korea RTA rely on certification by interested parties, which entails that the exporter’s signing of the certificate suffices as an affirmation that the items covered by it qualify as originating. In CAFTA, the importer claiming preferential tariff treatment, rather than the exporter, is the party ultimately responsible for declaring that the good is originating. While this system places the burden of proof on importers and is thus the simplest and least costly for exporters, it opens the door to more potential abuse and fraud. As such, the cost to customs of establishing and operating an effective origin verification regime may be more significant.

In agreements based on the LAIA model, such as Mercosur, and the Andean Community, as well as Caricom, ASEAN, ANZCERTA, SAFTA, the Bangkok Agreement, Japan-Singapore, and ECOWAS require certification by a public body or a private umbrella entity approved as a certifying agency by the government. The exporter is required to furnish the certifying agency with a legal declaration of the origin of the product, which is then certified. This method has the advantages of review by a relatively disinterested third party, as well as the potential for certifying entities being more familiar with the production processes than government agents might be, but similar costs to traders as the governmental certification method.

#### **IV. Restrictiveness and Divergence: The Scorecard**

The concerns voiced over RoO are two-fold: restrictiveness and divergence. Restrictive RoO can introduce undue barriers to trade between RTA members and non-members, thus dampening RTAs’ trade-creating potential. Divergence in RoO across RoO regimes can increase the transactions costs for countries and companies dealing on two or more RTA fronts simultaneously. These two issues are intricately linked: divergence matters more when RoO are binding—i.e., when restrictiveness shapes exporters’ incentives.

The manifold RoO combinations within and across RoO regimes present a challenge for cross-regime comparisons—that is, for observing restrictiveness and divergence. This section strives to overcome the complexity by quantifying RoO types and RoO restrictiveness. The first part discusses, and subsequently measures, restrictiveness and variation of restrictiveness across products *within* regimes, or complexity. The second part centers on discussing and measuring differences *across* RoO regimes.

##### **A. Restrictiveness and Complexity**

The capacity of RoO to affect economic decisions depends on the degree to which they restrict the options of economic actors and the size of the tariff preference to which

compliance with these rules gives access. The degree to which RoO restricts the options of producers/exporters we shall call “restrictiveness.”

In order to better understand RoO restrictiveness, two concepts—input pool and geographical pool—are key to grasp about any preferential trade agreement.

In terms of input pool, RoO establish for each product which of its inputs and/or what fraction of its inputs may be “non-originating” in order for the product to retain access to the preferential tariff treatment established by the agreement. The fewer restrictions placed on the use of non-originating inputs, whether qualitative or quantitative, the more “open” the preferential bloc is to ROW. The more open the RoO regime, the bigger the input pool is.

As for the geographical pool, any origin regime (implicitly or explicitly) establishes the list of countries whose originating products can be considered originating for purposes of the agreement (this might also be referred to as the “cumulation zone”). In the case of most RTAs, this list is simple the direct signatories of the agreement. Some agreements, however, will also specify additional countries whose originating products may be used as inputs in one or more direct signatories, and these inputs may be treated as originating. This is the case of the treatment of sub-regional integration groups and the EU’s GSP scheme, and the bilateral agreements that make up the Paneuro cumulation system. The larger the list of countries whose products qualify as originating in the origin regime of a given RTA, the larger the implicit geographical pool. The longer the list of countries and the larger the countries are, the larger the geographical pool.

Rules of origin thus determine both the openness of a bloc and its size, which, in turn, play a role in defining restrictiveness. Increasing the openness or size—input or geographical pool—can be expected to reduce the distortions caused by the origin regime that governs a given bloc.

### *i. Measuring Restrictiveness*

How to measure restrictiveness? A RoO is more restrictive as it permits less use of inputs from outside the cumulation zone, where the cumulation zone is the set of countries whose products can be considered as originating when used as inputs in later production. This concept of restrictiveness is the most easily observed, as it is expressed in the text of the rule itself.

There are two measures based on this idea. The first is Estevadeordal (2000), which constructs a categorical variable 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 subheading, and so on; and (2) VC technical requirements (such as chemical transformations) attached to a given CTC add to the RoO’s restrictiveness. Several other studies have applied variations of Estevadeordal’s index, such as Anson et. al. (2003), Cadot et al. (2006), Suominen (2004), Perez-Portugal (2006), etc.) based on the same underlying logic.

The second measure is Harris (2007). It presents a significant overhaul of Estevadeordal's methodology, applying similar logic but much more precisely capturing details of the variation across products and across agreements in the definition of the rules of origin.<sup>21</sup> Appendix II gives a detailed explanation of the calculation of these indices.

Figure 3 reports the restrictiveness of RoO as calculated at the six-digit level of disaggregation in selected RTAs by using the two measures, while Figure 4 displays the selectivity (standard deviation in RoO) in RoO with regimes by engaging the two measures. EU, Mexican Chilean and US agreements are among the most restrictive. However, it is also the case that US agreements have become less restrictive over time: NAFTA is more restrictive than the US-Chile RTA of 2004, which is more restrictive than CAFTA of 2005, which is more restrictive than US-Peru and US-Colombia RTAs negotiated in 2006. Box 1 discusses these inter-temporal trends in detail.

Except for the Japan-Singapore RTA, where restrictiveness is caused by having set their default rule as wholly obtained (applicable when no rule is specified in the annex), agreements in Asia are less restrictive, in part due to the tendency to set across the board VC rules.

The two different measures produce meaningfully different rankings for the regimes joining Mercosur and Andean Community countries, largely due to the fact that Harris's methodology assigns lower values to rules that present alternative qualification criteria, which is especially prevalent in these agreements, which otherwise have similar rules across products resulting in this methodological decision driving such different results.

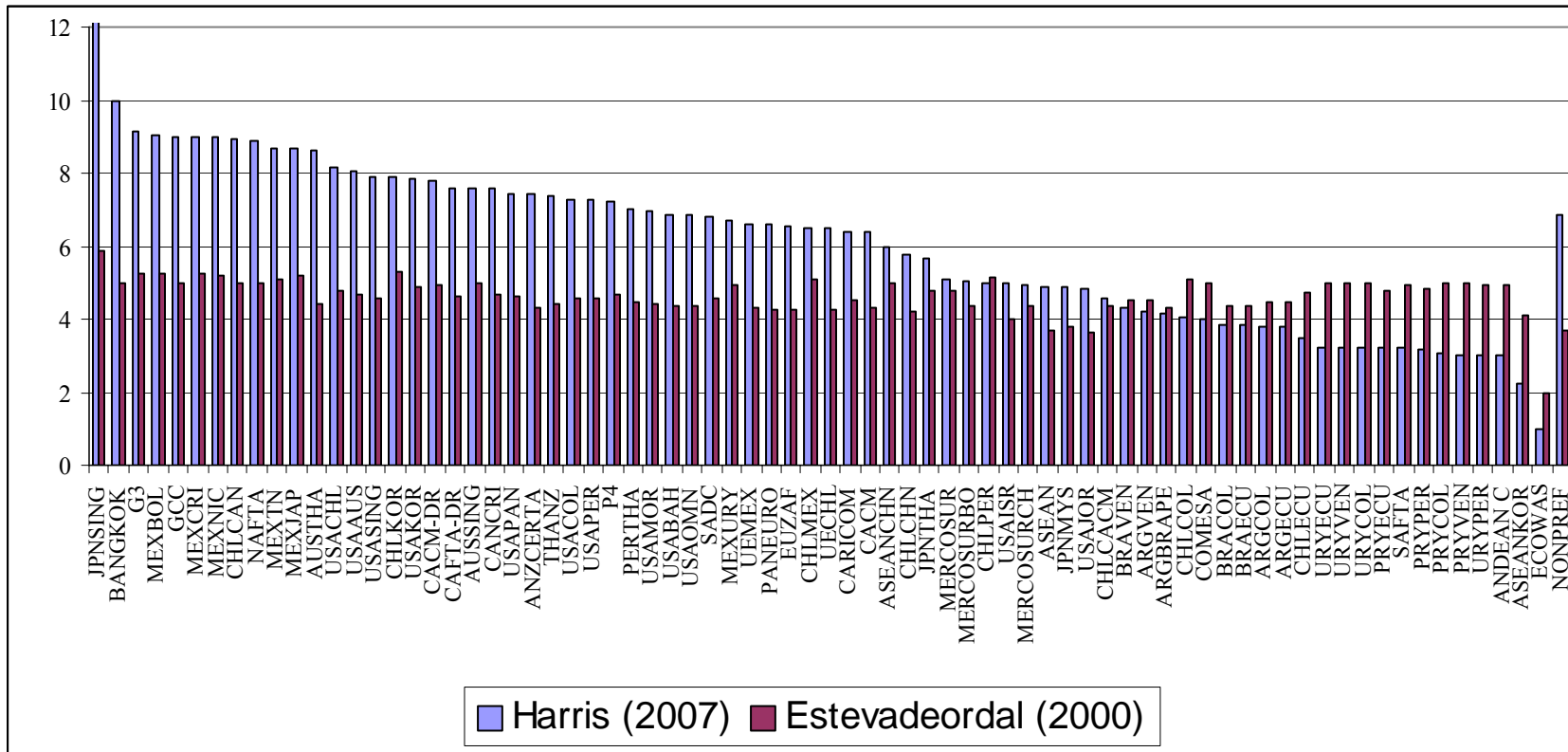
Table 3 catalogues the sectoral restrictiveness by using Harris's measure. The data reveal that agricultural products and textiles and apparel are marked by a particularly high restrictiveness score in each regime, which is consistent with Estevadeordal (2000), Suominen (2004), and Harris (2007) in that the restrictiveness of RoO is driven by the same political economy variables that arbitrate the level of tariffs particularly in the EU and the United States. Non-preferential RoO exhibit similar patterns across sectors, communicating the operation of political economy dynamics also at the multilateral level. Suominen (2004) finds that weighting the sectoral restrictiveness values with trade produces very similar results—which may in and of itself be an indication that stringent RoO stifle commerce.<sup>22</sup>

---

<sup>21</sup> Given that these measures of restrictiveness are 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, that is, their observed rather than their effective restrictiveness.

<sup>22</sup> See Suominen (2004) for weighted RoO.

Figure 3 - Restrictiveness of RoO



Source: Authors' calculations on the basis of RTA texts.

**Table 3 - Average Restrictiveness by HS Section for selected agreements**

Section	ANDEAN C	Argent.-Brazil-Peru	ASEAN	Australia-Singapore	CACM	CAFTA-DR	CARICOM	Chile-China	Chile-Korea	Chile-Mexico	Chile-USA	ECOWAS	EU-Chile	Japan-Malaysia	Japan-Singapore	Japan-Thailand	MERCOSUR	MERCOSUR-Chile	Mexico-Bolivia	Mexico-Japan	NAFTA	PANEURO	SADC	USA-Israel	USA-Jordan	USA-Singapore	Non Preferential
1. Live Animals	3.0	3.0	5.0	7.0	9.2	9.0	13.6	8.0	10.5	8.4	8.7	1.0	13.6	9.9	16.0	9.8	3.2	3.1	8.8	9.9	8.5	13.6	16.0	5.0	5.0	8.6	11.9
2. Vegetable prod.	3.0	3.0	5.0	7.0	8.4	7.8	10.2	8.0	8.4	8.0	8.2	1.0	11.1	8.0	16.0	7.8	3.0	3.0	8.0	8.0	7.8	11.1	12.7	5.0	5.0	7.9	14.2
3. Fats & Oils	3.0	8.3	5.0	7.0	9.0	8.0	4.7	8.0	11.0	8.1	13.6	1.0	5.0	7.8	16.0	8.1	6.9	4.2	13.9	8.5	13.6	5.0	5.5	5.0	5.0	13.6	6
4. Food. Bev. & Tab.	3.0	7.8	5.0	7.0	8.0	8.6	6.0	6.5	8.2	8.5	9.3	1.0	7.0	10.7	15.6	10.5	4.7	4.4	10.4	11.3	8.4	7.3	5.6	5.0	5.0	8.5	7.5
5. Mineral Prod.	3.0	3.0	5.0	7.0	7.6	6.2	5.9	5.7	7.5	8.6	5.3	1.0	5.1	2.8	14.0	6.4	3.1	3.0	8.6	8.7	8.6	5.1	6.0	5.0	5.0	5.4	10.4
6. Chemicals	3.0	4.5	5.0	7.0	5.3	3.1	5.2	5.6	4.0	5.0	3.2	1.0	6.7	2.3	10.3	2.6	7.6	3.7	6.1	5.3	5.8	6.7	6.0	5.0	5.0	3.1	4.8
7. Plastics	3.0	3.0	5.0	7.4	6.7	4.5	4.8	5.6	4.1	8.7	6.9	1.0	5.2	3.0	11.0	3.1	3.0	4.1	8.8	10.1	10.2	5.2	10.7	5.0	5.0	3.6	6.2
8. Leather Godds	3.0	3.0	4.9	9.1	5.6	6.6	6.2	5.0	6.9	9.9	7.9	1.0	6.0	10.8	15.3	9.7	3.0	3.0	8.8	5.0	7.2	4.5	5.8	5.0	4.9	7.5	5.9
9. Wood Prod.	3.0	3.0	4.1	7.0	5.8	6.1	7.4	5.9	6.1	7.0	6.0	1.0	5.4	6.0	14.6	6.6	3.0	3.0	6.7	7.1	6.5	5.4	6.1	5.0	5.0	6.1	5.3
10. Pulp & Paper	3.0	3.0	5.0	7.0	5.3	8.5	6.0	5.9	6.4	7.6	8.6	1.0	6.2	1.0	7.7	5.3	3.7	4.3	8.0	8.0	9.5	6.2	6.1	5.0	5.0	6.2	6.1
11. Textile & App.	3.0	4.5	4.0	9.9	8.0	16.0	6.1	6.0	14.9	3.0	16.1	1.0	4.0	12.9	4.9	12.4	7.4	7.8	16.0	16.0	16.1	4.0	2.9	5.0	4.0	16.3	6.9
12. Footwear	3.0	3.5	4.8	9.2	10.0	8.6	8.6	5.5	12.0	12.3	11.2	1.0	6.8	8.1	13.1	8.7	3.7	5.9	12.3	14.2	14.4	6.8	6.9	5.0	4.8	9.7	6.8
13. Stone & Glass	3.0	3.0	5.0	7.1	6.7	9.2	5.6	5.3	10.0	10.0	9.1	1.0	5.1	3.3	12.6	3.5	3.1	3.3	9.8	9.9	9.7	5.1	5.6	5.0	4.9	9.3	5.6
14. Jewelry	3.0	3.0	5.0	7.6	6.5	7.5	5.8	5.0	9.4	9.4	9.0	1.0	5.7	4.0	14.0	5.5	3.0	3.0	10.6	9.4	9.2	5.7	5.8	5.0	5.0	9.0	6.7
15. Base Metals	3.0	3.3	5.6	7.1	6.3	7.0	6.0	5.3	8.0	9.1	8.4	1.0	5.4	1.1	11.6	3.8	3.3	4.0	9.7	8.7	9.2	5.5	5.2	5.0	5.0	7.6	6
16. Mach & Elec. Eq.	3.0	4.7	5.0	7.1	4.6	5.5	6.0	5.2	6.1	5.8	6.0	1.0	6.8	1.0	16.0	2.1	5.2	6.3	5.9	5.0	6.0	6.9	6.9	5.0	5.0	5.9	5.8
17. Transportation Eq.	3.9	5.3	5.0	7.6	7.1	4.7	6.0	5.2	4.2	4.7	6.0	1.0	3.7	2.3	15.9	3.4	4.9	6.9	7.1	7.9	7.5	5.6	6.8	5.0	5.0	6.4	7.3
18. Optics	2.8	3.2	5.0	7.1	5.0	4.1	6.0	5.0	5.1	6.4	4.8	1.0	6.2	1.1	15.8	2.3	4.4	5.3	6.2	4.9	5.4	6.2	6.7	5.0	5.0	5.3	6.6
19. Arms & Ammun.	3.0	3.0	5.0	7.0	6.0	6.1	6.0	6.0	5.6	6.3	6.1	1.0	6.0	1.0	6.5	3.0	3.0	3.0	6.3	6.1	6.1	6.0	5.0	5.0	5.0	6.5	7.2
20. Div. Merchandise	3.1	3.0	4.8	7.2	5.0	5.8	5.9	5.5	6.0	6.7	6.5	1.0	5.5	1.5	12.0	3.1	3.1	5.2	6.9	6.9	6.4	5.5	5.5	5.0	5.0	6.6	6.3
21. Work of Art	3.0	3.0	5.0	7.0	4.0	5.4	6.0	5.0	6.0	8.0	4.0	1.0	6.0	1.0	16.0	3.0	3.0	3.0	8.0	8.0	8.0	6.0	6.0	5.0	5.0	5.4	6.1

**Source:** Authors' Calculations on the basis of RTA texts.

### Box 1 – Good News on RoO in the Americas

While RoO regimes may carry hidden protectionism, an examination of their evolution over the past few years in the Americas gives reasons for optimism.

First, NAFTA RoO have been under a liberalization process.<sup>23</sup> The Working Group in charge of the rules of origin review process has completed two phases of RoO simplification covering such sectors as alcoholic beverages, petroleum/topped crude, esters of glycerol, pearl jewelry, headphones with microphones, chassis fitted with engines, photocopiers, chemicals, pharmaceuticals, plastics and rubber, motor vehicles and their parts, footwear, and copper. The reforms, once complete, are estimated to extend to more than US\$100 billion in trilateral trade.

Second, US RoO regimes have progressively evolved toward a more liberal framework from NAFTA to US-Chile RTA, CAFTA, and on to US-Colombia and US-Peru. The latter three agreements incorporate simpler, more practical, and less restrictive product-specific rules of origin than NAFTA did.

Third, the various regimes designed after NAFTA are fairly similar vis-à-vis each other, in both the types of rules of origin specified and their level of restrictiveness. This can alleviate any potential transaction costs for NAFTA-model adherents that export under preferential terms to two or more NAFTA-model RTAs.

Fourth, the NAFTA-style regimes contain terms that alleviate the restrictiveness of product-specific RoO. This helps alleviate the compliance costs of the product-specific rules of origin. Even more encouraging is the movement toward somewhat higher de minimis levels and the willingness to experiment with diagonal cumulation. CAFTA stipulates that the member countries can use materials for apparel (Chapter 62) from Mexico or Canada as if they were CAFTA-originating.

Fifth, the NAFTA model has now been adopted in numerous free trade agreements. The current adherents will thus find it fairly easy to negotiate, adopt, and implement future free trade agreements. The costs of adjusting to RoO should thus have been incrementally diminishing for a good part of the hemisphere.

Finally, negotiators on rules of origin throughout the Americas, and particularly in RTAs based on the NAFTA model, have proved their willingness to revise existing RoO regimes to make them more flexible. NAFTA's review of its rules of origin is the clearest example, demonstrating commitment to keeping North America's rules of origin apace with changes in technology and the globalization of production, and potentially marking a growing role of export interests in setting trade policy.

More generally, the precision of the NAFTA-model rules of origin can be viewed as superior to the vaguely defined and subjective rules of origin of the past. Because the NAFTA regime is based on the change in tariff classification, it provides a fairer, more transparent, and more easily verifiable RoO model than regimes based on value content, which paradoxically can be hard to meet in countries with low production costs and are difficult to implement in the face of fluctuations in exchange rates and changes in production costs. Precise rules of origin do not need to be restrictive rules of origin; the NAFTA review process may well yield rules of origin that are both precise and flexible.

<sup>23</sup> The initial set of revised NAFTA rules of origin took effect on 1 January 2003; see "Regulations Amending the NAFTA Rule of Origin Regulations," *Canada Gazette*, 1 January 2003 (available at [canadagazette.gc.ca/partII/2003/20030115/html/sor24-e.html](http://canadagazette.gc.ca/partII/2003/20030115/html/sor24-e.html)). In July 2004, the trade ministers of the NAFTA countries instructed the trilateral Working Group on Rules of Origin to extend the liberalization drive to all items with a zero most-favored-nation tariff for all of the NAFTA members. The August 2007 joint declaration of the Montebello Summit among the three NAFTA countries' heads of state endorsed "an analysis of the free trade agreements that each country has negotiated subsequent to the NAFTA, beginning with those in the western hemisphere, including opportunities for innovative provisions on rules of origin."

## *ii. Restrictiveness Caveats and a Stylized Fact*

It is important to note here that restrictiveness on paper is one thing: a RoO that is restrictive by the above measures may not be so when the “real” input and geographical pools are taken into consideration. There are two key issues that qualify RoO restrictiveness, but that are not incorporated in the calculations above.

The first is the fact that RoO regimes employ several regime-wide mechanisms, such as *de minimis* and cumulation, that can add flexibility to the application of the product-specific RoO and consequently attenuate the restrictiveness of RoO—and even render them non-binding. Suominen (2004) and Estevadeordal and Suominen (2006b) find that many such measures indeed alleviate the negative trade effects of restrictive product-specific RoO. Several regimes have also experimented with innovative mechanisms to alleviate supply shortages and to aid the developing member countries to comply with RoO.<sup>24</sup>

Second, a RoO is “effectively restrictive” to the extent that it limits both the input and geographical pools, thus increasing the cost of production (by requiring firms to use higher-cost regional inputs). This concept of “effective” restrictiveness is less observable, as it requires knowledge of the input-output structure of each product as well as the scale and efficiency of regional production of the relevant inputs in each country within the cumulation zone. However, this is the sense of restrictiveness that matters economically, both for the degree of liberalization achieved within a RTA and for the degree of impact on third parties. As such, it arbitrates the degree to which a producer can globalize production without foregoing the preferential access in an RTA.

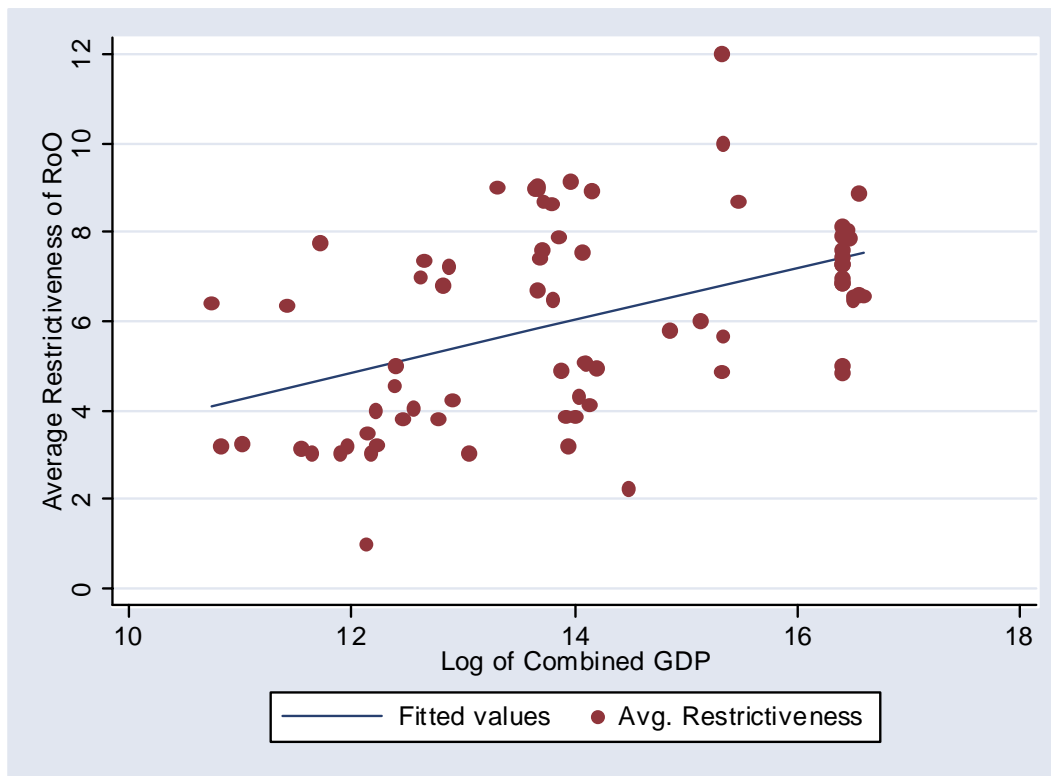
Imagine trade in roasted, ground coffee. In an agreement between the US and Canada, a rule that requires that all coffee products be derived from originating beans would be highly restrictive, effectively canceling any preferential tariff treatment, as there is no significant production in either country of coffee beans. The same rule applied to trade between the US and Colombia, on the other hand, while still binding on producers of specialized blends of coffee, would be significantly less onerous as Colombia is a major global producer of coffee.

As discussed above, “real” or effective restrictiveness thus depends on the availability of efficient input supplies in the RTA member countries, which one would expect to be correlated with size of the integrating economies. This issue of the size of the cumulation zone is of crucial importance when analyzing the utility of connecting or multilateralizing RoO regimes. However, since effective restrictiveness is so difficult to observe, any broad analysis must move forward with measures of observed restrictiveness (that is, restrictiveness as inferred from the text of the rule alone) as a useful proxy, but bearing in mind that it is a proxy and not an ideal measure.

Figure 4 illustrates the relationship between restrictiveness and the size of the cumulation zone, measured as combined GDP of the member countries.

<sup>24</sup> See, for instance, Suominen (2004) or Estevadeordal and Suominen (2006) for details.

**Figure 4 - Restrictiveness vs. Cumulation Zone**



A clear stylized fact is that observed restrictiveness is increasing in the size of the cumulation zone. There are two alternative conclusions that can be drawn from this. One is that large, dominant partners such as the US and the EU tend to dictate more restrictive rules of origin in their RTAs, while developing countries tend to negotiate less restrictive regimes. This interpretation is perhaps the most popular,<sup>25</sup> and it certainly is not difficult to find anecdotal evidence to further support it.

However, it ignores the fact that observed restrictiveness is not strictly linked to effective restrictiveness across agreements. A rule with high observed restrictiveness in an agreement with the US or Europe will still allow a firm to source inputs from the vast partner country in the cumulation zone, and the likelihood of that rule precluding the use of inputs from the global low-cost source is lower (though not necessarily zero) than in the case of a rule with the same observed restrictiveness in a RTA joining two small developing countries.

The alternative conclusion to be drawn is that average *effective* restrictiveness could have no relationship, or even a negative relationship, with the economic size of the cumulation zone. This is because the greater availability of inputs implied by the larger economy of the cumulation zone results in rules with greater *observed* restrictiveness in fact having lower *effective* restrictiveness.

### ***iii. Another Caveat: Complexity of Regimes***

<sup>25</sup> See, for instance, Cadot et al (2006).

Complexity (selectivity across RoO in a regime) presents a further caveat for the analysis of restrictiveness and divergence for a number of reasons.

First, more complex rules will be more difficult to administer. If a country is party to several RTAs that each feature across the board rules (that is, with zero complexity), there will never be a problem of confusion as to what rule applies to a given product, or incentive to misclassify a product to take advantage of a different rule. In short, administration is quite straightforward.

Compare this to a country party to several RTAs that each feature complex sets of rules of origin. Clearly, the opposite will be true. Administering these rules of origin will require customs authorities to take much more care with identification of the correct rule and correct classification of the product (as well as the classification of its inputs if the rule is based on CTC). Reducing these costs and uncertainties should be one goal of multilateralization and/or convergence processes.

Second, when overlapping regimes are more complex, it is more likely that the rules for a given product will vary across regimes, potentially requiring firms to adjust their sourcing strategies to accommodate different export markets. These costs could be significant.<sup>26</sup>

Figure 5 sets out to analyze the complexity of RoO within various regimes. The Mercosur model pertinent to Mercosur-Chile and Mercosur-Bolivia RTAs is more general, yet still exhibits more cross-sectoral variation in the restrictiveness of RoO than the LAIA model marked by the across-the-board change of heading RoO. The generality of the LAIA model is replicated by the most Asian and African RoO regimes. However, some newer RTAs—such as Chile-Korea RTA and SADC—feature high levels of cross-sectoral variation in RoO.

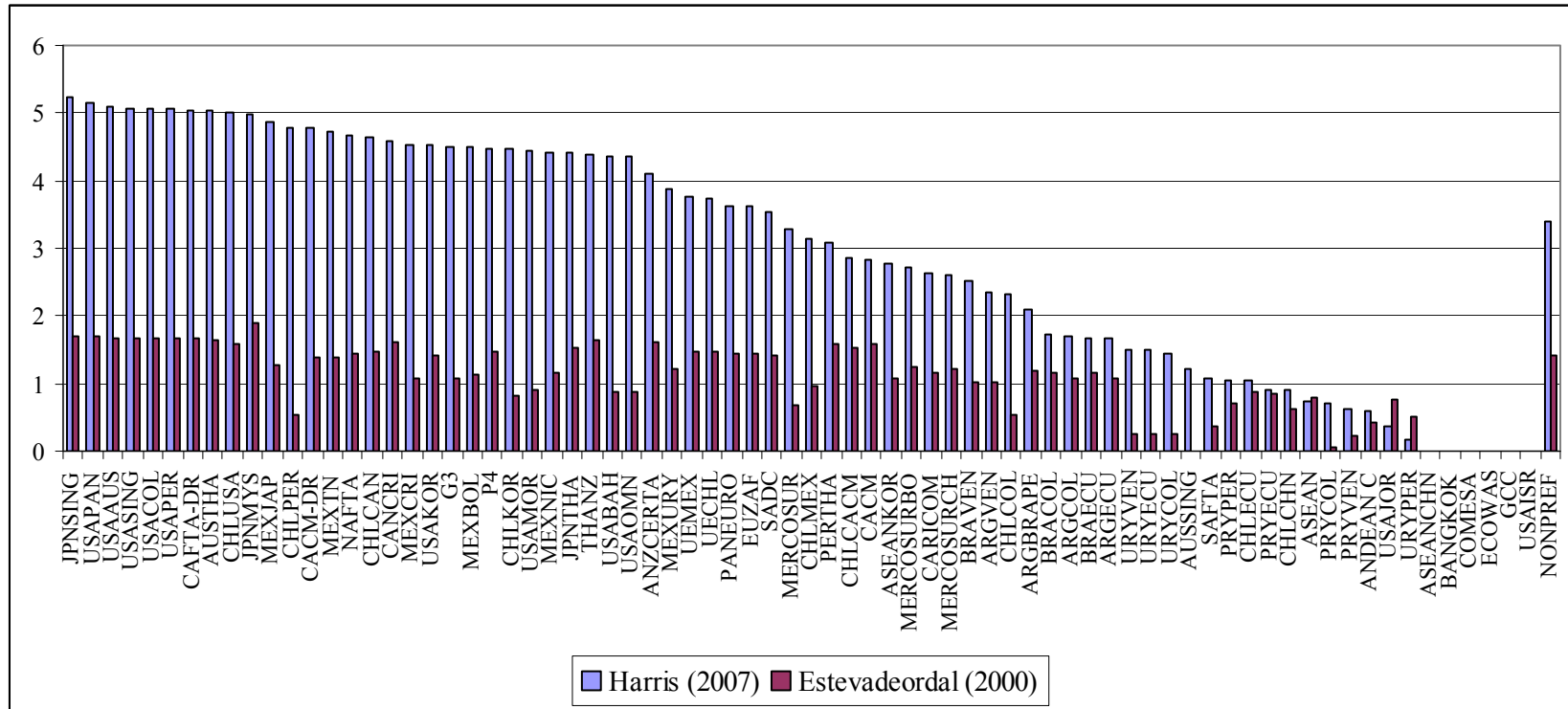
Two interesting points arise from a comparison of Figures 2 and 5. First, regarding US agreements, note that while NAFTA ranks first in Figure 2 based on the number of different combinations of qualification criteria, the more recent US agreements (with Panama, Australia, Singapore, Colombia, Peru, Central America, and Chile) feature higher standard deviations of the restrictiveness index. This implies that NAFTA's 80 permutations all group tightly around a more restrictive mean, while subsequent agreements must feature a significant relaxing of the restrictiveness of many products, resulting in a lower average restrictiveness as well as a higher standard deviation.

Second, note that Japan-Singapore ranks first in standard deviation, but in the middle based on the number of rule combinations. This is due to that agreements specification that all products for which no specific rule is specified in the annex must be wholly obtained.

---

<sup>26</sup> The IDB is currently undertaking a survey of firms in several countries in an attempt to begin to quantify these costs.

**Figure 5 – Complexity (Standard Deviation of RoO) in Selected RTAs**

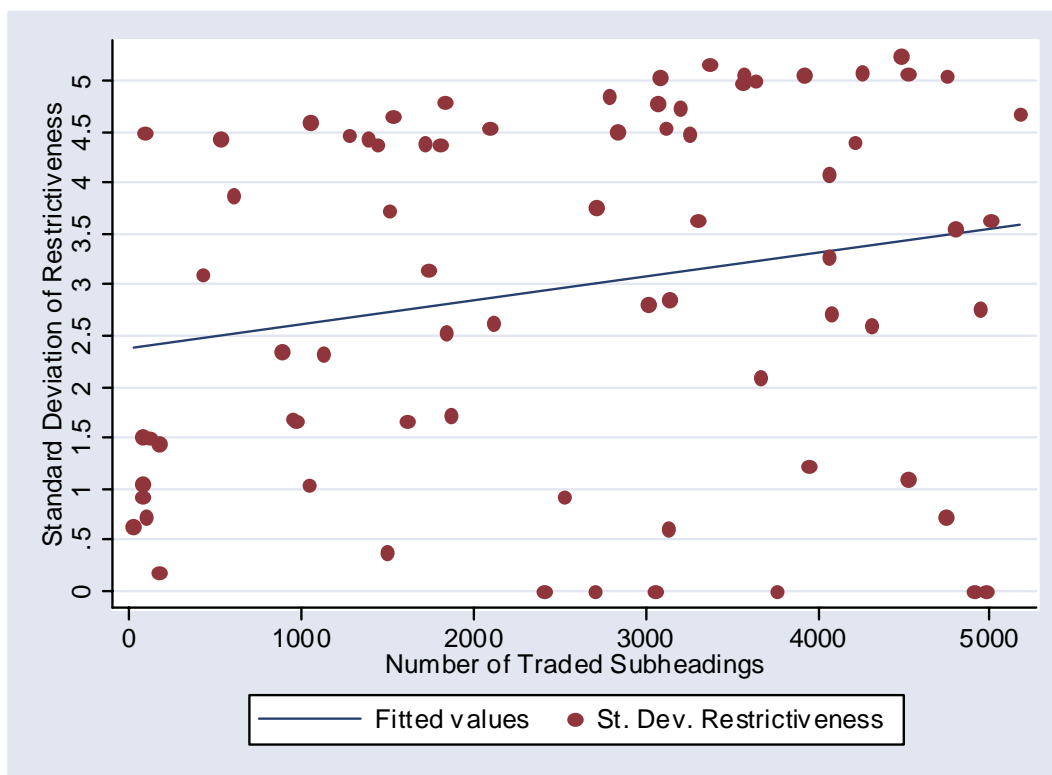


*Source:* Authors' Calculations on the basis of RTA texts.

Complexity of RoO could be hypothesized to be directly related to the complexity of the bilateral trade relationship (Harris 2007). It is broadly recognized that the level of restrictiveness of the rules of origin is generally affected by political economy variables. Regardless of the specific political economy model employed, the variables that will likely determine the rule of origin for a particular product will focus on the levels of its production in the participating countries as well as the scale and efficiency of production of its inputs both within and outside of the cumulation zone. Consequently, the number of products for which the political economy pressures reach some minimum threshold for influencing the negotiations of the product-specific rule will depend on the number of products actively traded among the participating countries.

“Complexity” of the origin regime (as measured by the standard deviation of RoO restrictiveness within an agreement<sup>27</sup>) is thus dependent on the complexity of the pattern of trade among the members of the RTA (as measured by the number of HS subheadings in which products are traded). Figure 6 illustrates the degree to which this is observed in the data.

**Figure 6 - Complexity of RoO and of Trade**



The strong outliers in this relationship are interesting cases. The points with low numbers of traded subheadings and high variation in rules of origin are most notably Mexico-

<sup>27</sup> The same results obtain when complexity is measured by the number of different criteria combinations used in the set of product-level rules as we describe in Figure 2.

Bolivia (85 products), US-Morocco (527 products), and Canada-Costa Rica (1,050 products). The first and third of these are agreements by NAFTA members that were negotiated shortly after the conclusion of the NAFTA negotiations, when those rules seemed the most appropriate (note that both feature net-cost based VC rules, a calculation method that has largely fallen out of use in recent agreements except for automotive products). The US-Morocco agreement features an across the board VC requirement except for textiles and a small set of products that seem to have been of particular interest to Morocco (some fruits and vegetables, coffee, and some auto parts). This large difference in the restrictiveness of the general rule and those identified for special treatment seems to be generating the especially high standard deviation figures.

In the opposite corner, the notable outliers are the larger Asian agreements (ASEAN, ASEAN-China, Bangkok Agreement) and the US-Israel agreement. All of these agreements feature across the board VC rules, except ASEAN which has a relatively small number of specific rules for some products (primarily steel, textiles, and wood). This choice of regime is a bit harder to explain. A possible reason might be that many of these countries maintain relatively low MFN tariffs or very limited preferential tariff liberalization, and so the levels of preference are quite low, necessitating only minimum rules.<sup>28</sup> This is backed up by anecdotal evidence of relatively low utilization rates in ASEAN.

We thus have a second stylized fact that complexity of rules of origin is increasing in the diversity of products traded among RTA members. The more product-specific interests there are to satisfy with the origin negotiations, the more different outcomes we are likely to find.

Restrictiveness and complexity within regimes imply that as regions of overlapping RTAs pursue convergence, forming groups with greater economic size and variety of traded goods, we should expect a tendency towards greater observed restrictiveness and complexity. Both of these are potentially problematic for the international trading system. Greater observed restrictiveness, while not necessarily implying greater effective restrictiveness, still amounts to increasing barriers to trade among regions. Greater complexity of the origin regimes simultaneously implies increasing difficulty of administration and thus greater potential uncertainty, especially in developing countries.

None of this is to say that the benefits of expanded accumulation within a convergence zone would not outweigh these potential problems. All the same, careful consideration of these problems ahead of time can lead to strategies for mitigating their effects.

## ***B. Divergence***

RoO restrictiveness can be consequential to, and even prohibitive of, trade in any one regime. However, RoO also feature a systemic problem of divergence across regimes. To our knowledge, except for IDB (2008) there are no empirical attempts measure the costs of RoO divergence. Yet, besides the distortionary effects of RoO in any given regime, the

---

<sup>28</sup> See, for example, Inama (2005).

divergence can impart economic costs, at least in principle. The most acute costs of divergence are two-fold.

First, the proliferation of RTAs can “balkanize” the global trading system. If the various agreements carry widely distinct RoO, they can impose undue transaction costs for traders, investors, and governments dealing in several RTA markets simultaneously (than in the counterfactual case where the rules of the various RTA are exactly the same). Firms dealing on different RTA fronts may need to alter their production patterns to meet the idiosyncratic rules of origin and other requirements of each of the different RTAs; customs administering imports from numerous RTA partners may have to refer to multiple, divergent sets of rules instead of a single document applicable to all RTAs.

The administration costs for customs are also likely to be relevant for traders. For example, complications for customs can result in delays in shipments clearing customs, which increases time to market for finished goods and can increase inventory costs when the delayed shipments are intermediates. Also, complications in administration increases the chance for error in the application of rules and thus potential denial of preference for originating products or uneven competition from firms that benefit from errors in application of rules. In general, these problems can increase uncertainty for traders, depressing trade. All of these problems will likely hit traders in developing countries disproportionately, as these are the customs services more likely to be unprepared to handle the complicated administrative tasks associated with divergent rules of origin.

Second, RoO divergence risks the rise of *de facto* hub-and-spoke systems centered around a few hub countries, where the potential cost savings from cumulation of production among the spokes remains untapped. While this arrangement may hold some benefits for the hub country, the spokes will be at an increasing disadvantage, as they will be unable to use inputs from other spokes when producing for the hub market. Even in cases where the hub-and-spoke pattern is less clear (i.e., where all bilateral pairs have RTAs, and there are multiple “hubs”), the barriers to cumulation can generate significant inefficiencies and reduced trade.

Again, both balkanization and hub-and-spoke are less relevant when RoO are non-binding—non-restrictive or in the presence of zero MFN tariffs. They become increasingly relevant when RoO are binding *and* when the various RoO regimes differ from each other.

Figures 7a and 7b illustrate these issues. Rules of origin effectively set up walls around RTA members that prevent the use of some inputs in each product. Multiple overlapping RTAs with divergent origin regimes thus entail many such walls to free and efficient sourcing of inputs. When the rules are more restrictive, the walls are higher (as depicted by the heavier lines around each RTA in Figure 7a), and efficient allocation of resources is even more difficult. In this sense, then, more restrictive rules of origin will accentuate the divergence problem for countries that have entered into multiple RTAs, as both the number and height of the walls will be higher.

**Figure 7a – Divergence with High Restrictiveness**

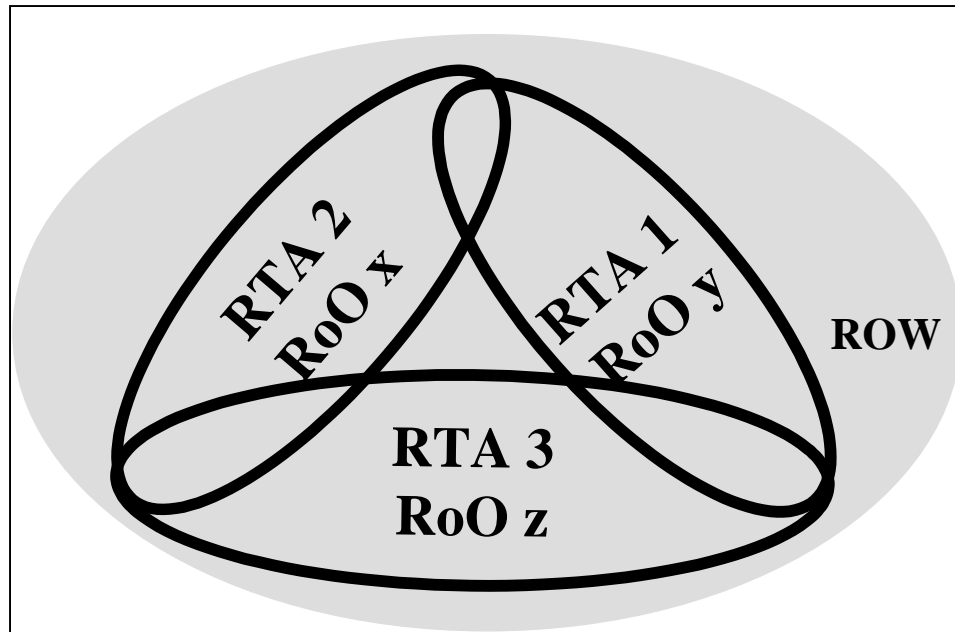
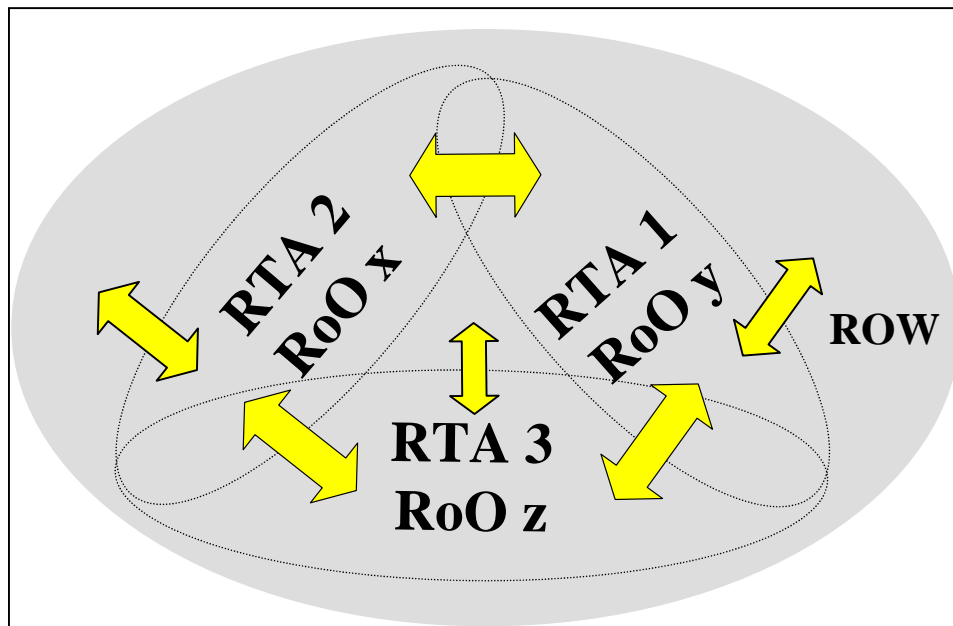


Figure 7b, on the other hand, depicts the same set of RTAs but with lower restrictiveness. In this case the RoO barriers to trade are lower, both across RTAs and between members and ROW. Inputs can be sourced efficiently raising the global gains from trade.

**Figure 7b – Divergence with Low Restrictiveness**



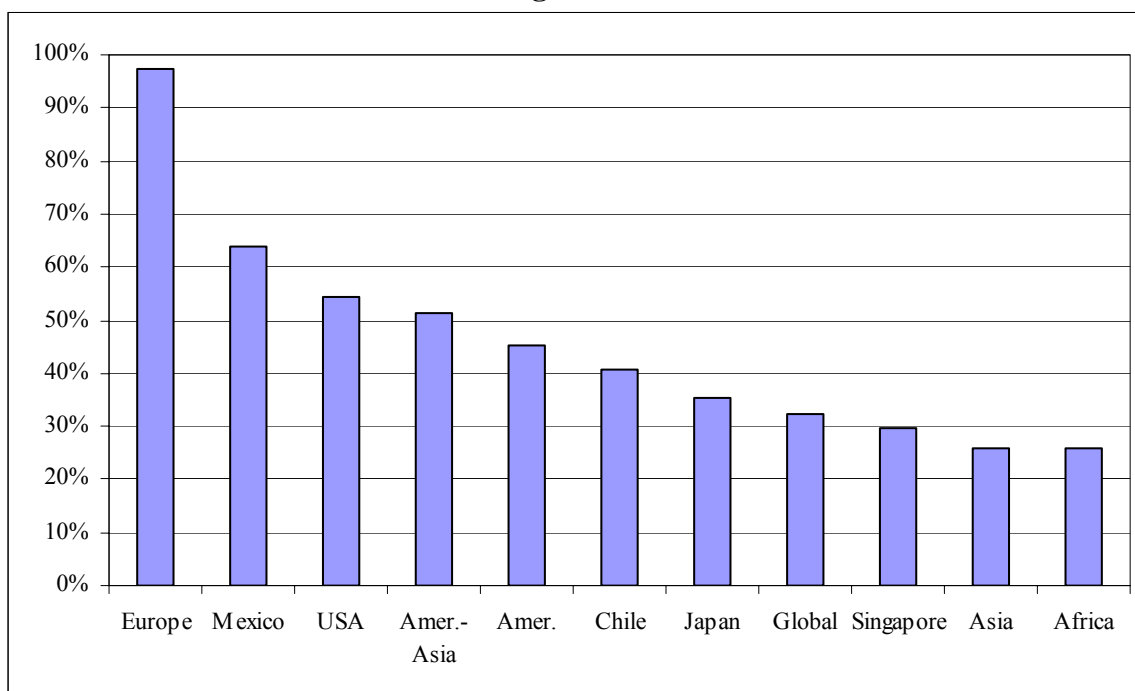
### *i. Measuring Divergence*

Divergence is due to the different needs of different producers in different cumulation zones, not carelessness in negotiation, but can also be expected to generate costs and uncertainty in practice. How divergent are agreements? We strive to answer this question by comparing RoO regimes to each other product-by-product by using Harris's (2007) restrictiveness index.

Figure 8 reports the frequency with which the most common rule for each product within a “family” of agreements is applied across those agreements. In the Paneuro family of agreements, for example, on average nearly all of the agreements apply the same rule<sup>29</sup> for a given product. In the US family, on the other hand, just over half of the agreements will apply the same rule for any given product. In the African agreements, in fact, the 25 percent outcome actually implies complete divergence, as there are only four agreements included in the analysis, and their rules never coincide.

On the other hand, the Americas-Asia family of trans-continental agreements as well as the Mexico family show significant similarities, with over half and nearly two thirds of agreements coinciding on average, respectively. For the full global set of agreements, on average about one third of agreements' rules will coincide on any given product.

**Figure 8 - Divergence within Families: Fraction of Agreements in Each Family Sharing the Mode Rule**



*Source:* Authors' Calculations on the basis of RTA texts.

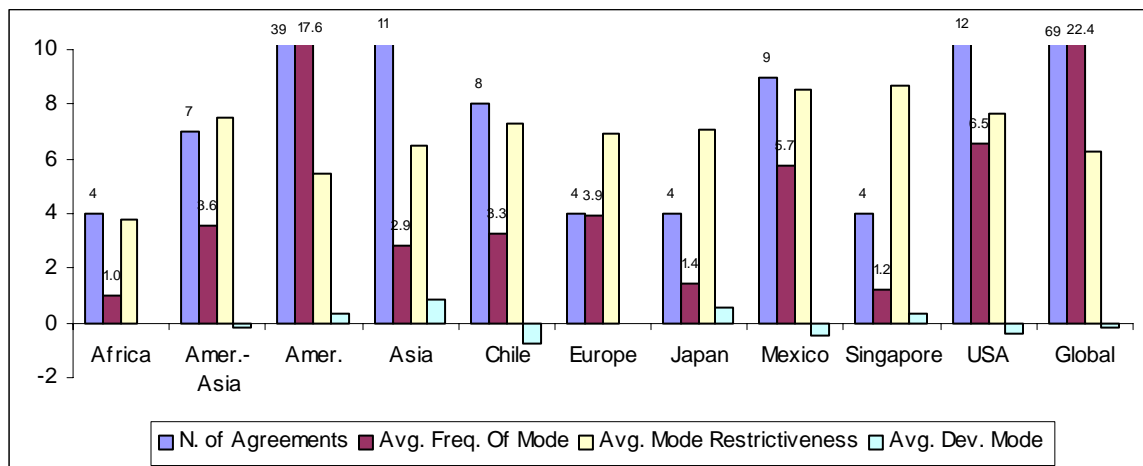
<sup>29</sup> By “the same rule” we thus mean “rules with the same level of restrictiveness”, which is not necessarily the same thing. Containing 28 of different measures for RoO restrictiveness, and thus abstracting from the RoO typology (with 211 RoO), the index provides a solid and in our view sufficiently nuanced basis for capturing cross-regime divergences. See Appendix I for a list of agreements included in each group.

Figure 9 furthers the analysis by showing the number of agreements and the average frequency of the mode rule. It also displays the restrictiveness of the mode rules (a restrictiveness of 6 is equivalent to a change in heading rule or a VC requirement of 50 percent), as well as characterize the deviations from the mode.

This average deviation from the mode gives an indication as to how these rules are negotiated. In the analysis of the complexity of RoO above we showed that countries tend to have more selective rules when they trade more products and hence have more product-specific interests to satisfy internally. Here, we can see whether satisfying these interests tends to lead to more or less restrictive rules on average.

Divergence from the mode rule within a family in the Chilean, Mexican, and US cases is on average towards less restrictive rules. This is also true for trans-Pacific agreements and in the overall global case, though to a lesser degree. The opposite occurs in the Singapore, Japan, Asia and Americas families. In the case of the Asian, Japanese, and Singaporean families, the relatively low frequency of the mode rules makes generalizations even more difficult. The tendency to deviate upwards here may be due to the fact that these countries often have origin regimes that consist of a fixed rule that applies to all products which is generally fairly lax,<sup>30</sup> and apply exceptions to this rule only in cases where additional protection is desired.

**Figure 9 - Families of Agreements: Restrictiveness and Divergence**



*Source:* Authors' Calculations on the basis of RTA texts.

While speculation on explanations for these results is likely to lead to some oversimplifications, it is worth offering an informed hypothesis. The US, Mexican, and Chilean agreements generally follow a NAFTA-like model. Furthermore, negotiation of product-level rules in this model can be quite tedious, as anyone who has even tried to read them can imagine. Thus, when negotiating a new agreement, rules for products of no special interest to either party are likely to simply be copied from one or the other party's previous agreements. Deviations from the rules of previous agreements is likely to occur mainly in the cases of products that are of particular interest to one or the other party. What is interesting here is that these deviations are generally towards less restrictive

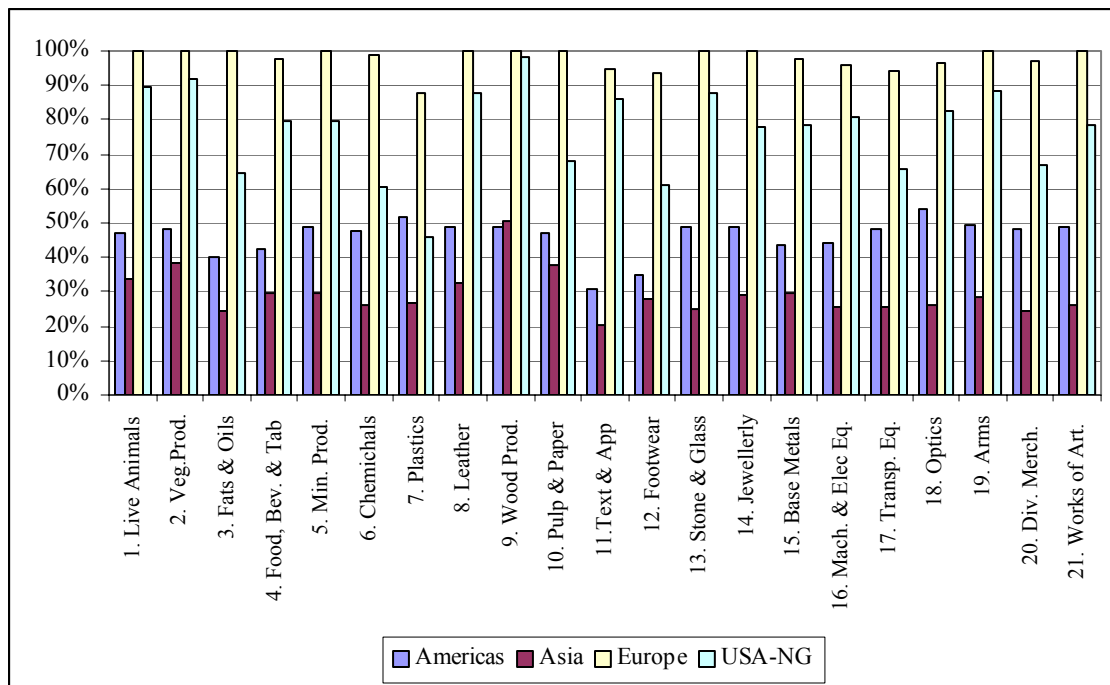
<sup>30</sup> Except Japan-Singapore, where the default rule is effectively a wholly obtained requirement except where otherwise stipulated.

rather than more restrictive rules. While this could be due to the fact that the “default” rules tend to be sufficiently restrictive to begin with, so that no upward deviations are usually necessary, this probably also indicates that in these cases the task of negotiators is geared more to assuring that their exporters will be able to meet the requirements than to seeking extra protection for domestic producers.

## ii. Divergence at the Sectoral Level

What sectors drive the average observed divergences and similarities in RoO *within* families? This is a policy-relevant question: the sectors where divergence within the families is least should be the low-hanging fruit for negotiators of any attempts to bridge differences in RoO across regimes.

**Figure 10 - Similarity by HS Section**  
Percent of Agreements coinciding by HS Section



**Source:** Authors’ Calculations on the basis of RTA texts.

Figure 10 shows the degree to which the averages in Figure 8 vary across HS Sections. What divergence there is in the European family arises in plastics (Section 7), textiles and footwear (Sections 11 and 12) and Machinery and Equipment and Transport (Sections 16-18). The “New Generation (NG)” US agreements (i.e. excluding those with Middle Eastern countries with across the board VC rules) are still rather diverse, with only 8 of the 21 sections seeing more than 80% of agreements coinciding on average. The Americas and Asia are even less homogeneous, rarely exceeding 50% agreements coinciding on average. Table IV-1 in Appendix IV details these patterns further.

Looking for similarities across families (see Appendix IV) we find that generally textiles (Section 11) have the most restrictive rules, though not so much in the case of the European rules, where agricultural products (sections 1-2) have more restrictive rules.

Chilean and Japanese families also have restrictiveness peaks in agriculture. In most agreements, restrictiveness is lower in chemical, plastics, and machinery and equipment.

### ***iii. Comparing US, EU, and Non-Preferential RoO***

Given that the US and the EU are the two global poles in setting RoO in preferential agreements, they would also hold the keys to any effective multilateral process to tackle RoO. In principle, the more similar their RoO regimes are, the more likely would they be to find common ground in any RoO negotiation.

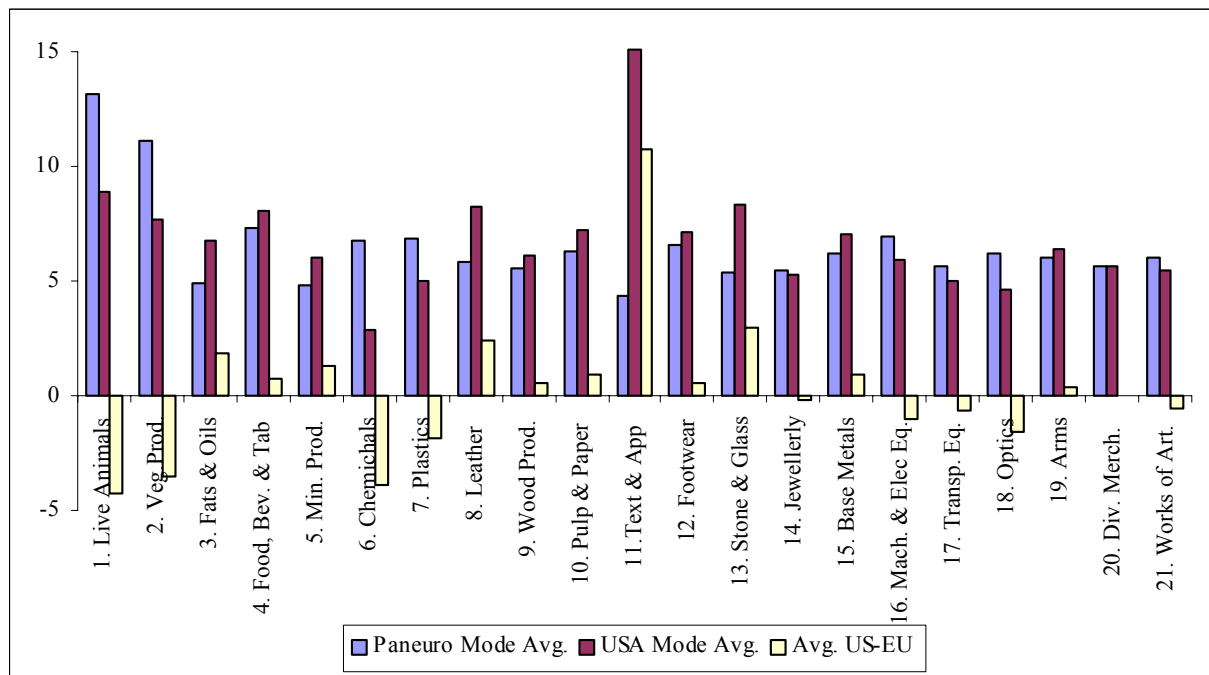
How divergent are US and EU RoO? Figure 11 compares the most common rule for each product within the set of US agreements with the rule for that product in the Paneuro RoO.

The final set of bars reports that the overall average levels of restrictiveness are quite similar (a difference of less than 0.15 using the Harris [2007] scale). This overall average, however, masks some significant differences in certain sectors (indeed the standard deviation of the difference across all products is 5.5).

At the HS Section level, the differences that stand out are in basic animal and vegetable products (1 and 2), animal and vegetable oils (3), chemical products (6), furs and hides (8), wood and paper (10), textile products (11), stone and its manufactures (13), common metals (15), and precision instruments (18).

The most dramatic of these differences (sections 1, 2, and 11) are perhaps overstated by the comparison methodology, as the EU relies heavily in sections 1 and 2 on a “wholly obtained” criteria while the US applies rules based on the change of classification criteria that for these products in fact give a similar effect. In textile products, the differences are somewhat overstated again due to differences in approach to defining the rules, with the US again relying on CTC criteria and the EU relying on specifying production processes. In this case the differences boil down to the US requiring that material inputs be originating starting with yarn, whereas the EU generally requires that material inputs be originating starting with fabric.

**Figure 11 – Comparing US and EU RoO Poles Internally and Across, by Section**  
Average Restrictiveness (Harris 2007)



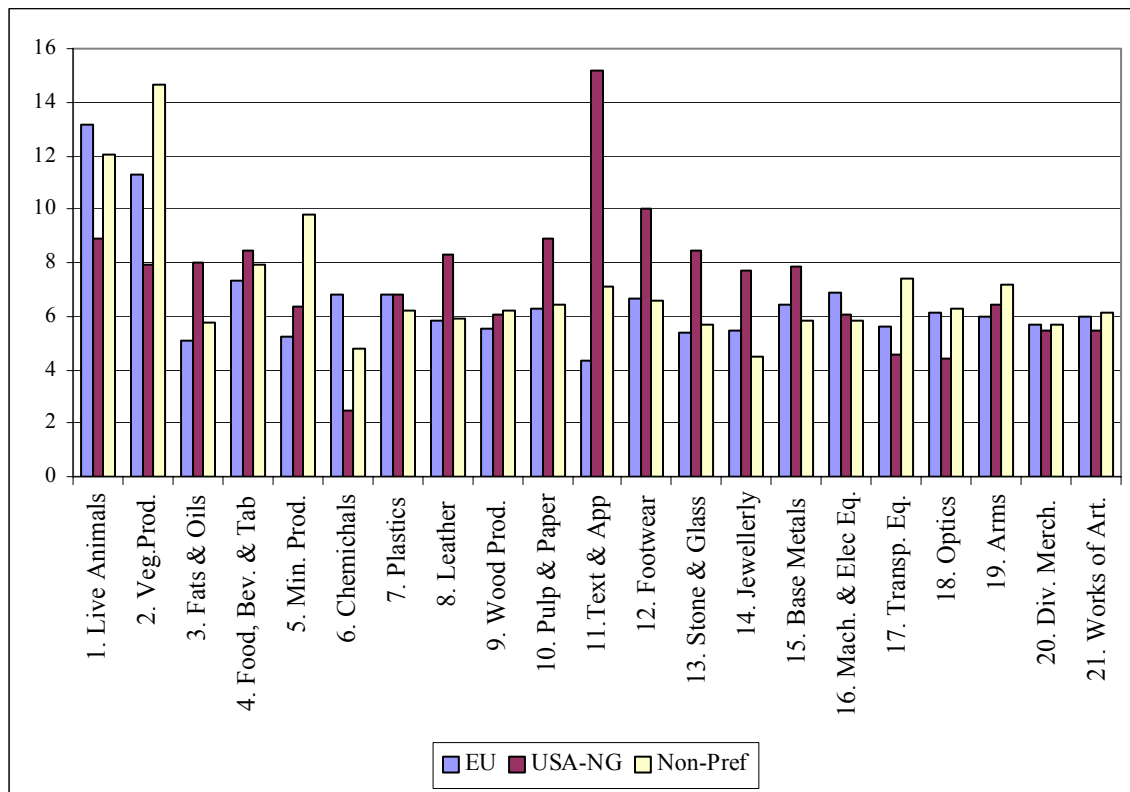
**Source:** Authors' Calculations on the basis of RTA texts.

Of the other HS Sections, 10 of the 21 show a difference of less than one point (equivalent to the difference between an exception to a CTC of a heading and an exception of a subheading).

Despite recognizing that the differences in some sectors are somewhat overstated due to “stylistic” differences in definition of the rules, we must also emphasize the importance of stylistic differences. Agreement of the substance of a matter does not always lead easily to agreement on the particulars of implementation. The fact that the average difference in 10 of the 21 HS Sections is less than one point on the Harris scale, while encouraging in that differences may not be as large as one might think, does not imply that reaching an agreement would necessarily be simple. Recall for example Figure 1, which shows that the most recent approved US agreement (CAFTA) relies on criteria other than CTC for less than 3 percent of products in their first rule, where the Paneuro rules eschew CTC for nearly 15 percent of products. Even if the observed restrictiveness is quite similar in many cases, these stylistic differences, which derive from fundamentally different understandings of the best way to approach these issues, are significant.

Another potentially useful analysis is comparing the US and EU preferential RoO families, respectively, to the non-preferential RoO as they stand to date.

**Figure 12 - Average Restrictiveness of Mode EU, USA(NG) and Non-Preferential Rules by HS Section**



*Source:* Authors' Calculations on the basis of RTA texts.

While the non-preferential rules generally seem to be a compromise position between the US and EU standard preferential positions, there are several sections where this is not the case. There are seven sections where the non-preferential rules are more demanding than either the standard US or EU preferential rules, most notable 4, 5, 17 and 19. There are also four sections where the non-preferential rules are less demanding than either of these, most meaningfully in 7, 14, 15, and 16.

It is important to keep in mind that the ostensible<sup>31</sup> purpose of non-preferential rules is different from that of preferential rules. While preferential rules must simply allow a determination of whether a good is originating in an RTA member or not, the non-preferential rules must allow a determination of the “official” originating country when this is not the country of export. These differing purposes may be the cause of the deviations noted above.

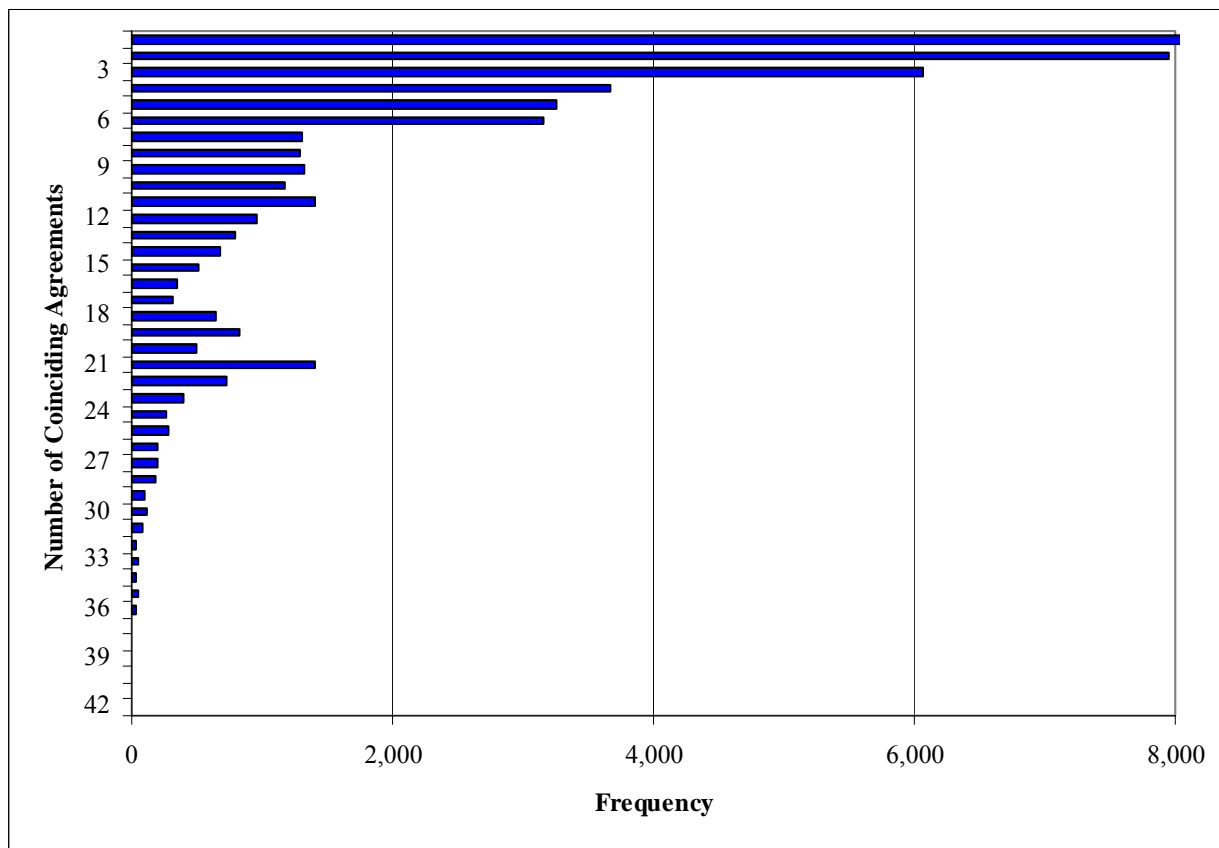
#### *iv. Beyond Geographic Families?*

The above exercises studied RoO hubs and families *ex ante* defined. One could certainly ask whether there are sets of RTAs that frequently coincide in their origin requirements despite not falling in the same families—that is, whether there are families across the

<sup>31</sup> An important outstanding issue in the negotiations of harmonized non-preferential rules is the exact uses to which the agreed rules will be put.

geographical families examined above. Such an exercise could help identify “global RoO coalitions”, or clusters of RTAs sporting common product-specific RoO. In essence, it would help illustrate the divergence within the global bar in figure 8. Figure 13 strives to get at such global families by looking at the frequency with which different numbers of agreements coincide across product.

**Figure 13 - Frequencies of Coinciding Agreements**



*Source:* Authors’ Calculations on the basis of RTA texts.

Unsurprisingly, we find that there are no large unexpected coalitions. The peak at 21 coinciding agreements is due to the large group of agreements in South America that follow the LAIA model with a general rule that gives the alternative of a change in heading or a 50 percent VC.

An alternative approach to this question is to look at which agreements coincide in each product and examine the frequency of these coincidences. Table IV-2 in Appendix IV lists the “revealed families” with frequencies in excess of 200 products. Again, there are no particular surprises. The highest-frequency outcome is for agreements to appear alone. Common groupings are of agreements with across the board low-percentage VC requirements (for examples ASEAN, Chile-China, and US-Middle Eastern agreements). We also frequently see groupings within the families used above.

However, even if unexpected families were to emerge from this analysis, this exercise is likely of more academic than practical interest. For one, RTAs within a group with, say, 200 common RoO may be fully divergent in the rest of the RoO in the tariff universe—

while, in addition, any one of them may coinciding in a larger number of RoO with even a larger number of RTAs. A second and a complementary issue is that if rules are a function of local political and economic factors, any of the members to RTAs in the global RoO clusters may have but a scant motive to work together.<sup>32</sup>

Perhaps the most useful lesson of the exercise is that there are virtually no large global coalitions of RTAs outside the expected families. Nonetheless, in the presence of global “RoO caps” that would limit the number of types of RoO, the number of RTAs with a common RoO should expand.

In sum, the above exercises have yielded three main observations:

- RoO in EU, Mexican, Chilean and US agreements are among the most restrictive. The data reveal that agricultural products and textiles and apparel are marked by a particularly high restrictiveness score in each regime. However, it is also the case that US agreements have become less restrictive over time. The more recent intra-Asian agreements tend to be less restrictive and complex than their counterparts in Europe and the Americas.
- The real, effective restrictiveness depends on factors beyond the RoO regime text, namely on the input pool and the geographical pool of supplies. The wider these are, the less the effective restrictiveness is likely to be.
- There are marked divergences across RoO regimes around the world: on average about one third of all agreements’ rules will coincide on any given product. Nonetheless, there are clear RoO families centered around the United States, EU, and Mexico, in particular, which suggests potential for some form of regional RoO convergence. Moreover, there are some signs of a *de facto* cross-regional stylistic harmonization of RoO, as US-style agreements are spreading toward Asia via the recent trans-Pacific agreements.

## V. Multilateralization and Convergence: Where, When, and How?

Rules of origin are a necessary element of any preferential trading scheme. Indeed, “preferential” and “RoO” go hand-in-hand: by precluding free-riding by outsiders, the latter enables the former. Taking as given that RTAs, either individually or collectively, bring benefits to the multilateral system, it must be recognized that they could not have been agreed to without origin regimes that to a sufficient degree limited the benefits of each agreement to its constituent members. As such, discussion of “eliminating” rules of origin from preferential trading arrangements is non-sense.

Furthermore, if we accept the “building block” hypothesis that successive and overlapping RTAs are the most viable path to global free trade, then the elimination of

---

<sup>32</sup> Furthermore, the exercise here employs not RoO typology but the restrictiveness index, which is an aggregation of the typology, and, as such, overlooks differences in RoO types falling into a particular restrictiveness code. For instance, a restrictiveness value of 10 carries 14 different types of RoO, and thus any one of the RTAs sharing restrictiveness value of 10 in any one RoO may still have divergent RoO types.

preferential origin regimes would itself be stumbling block. Preferential origin regimes are the mechanisms that make RTAs viable by allowing the participating countries to focus on eliminating intra-regional trade barriers without concerns about inadvertently undertaking a broad unilateral liberalization.

We have shown that restrictive and divergent RoO are facts of the RTA universe. We have also described the potential transaction costs implications of a combination of the two, and elaborated on why restrictiveness in essence accentuates the prominence of divergence. While RoO *per se* in any given RoO regime are not necessarily “bad” for sound economic decisions, restrictive RoO can be. Furthermore, the existing differences in the restrictiveness of product-specific RoO and the regime-wide facilitation mechanisms *between* RoO regimes can make a difference in the decisions of economic actors in favor of less efficient outsourcing and investment strategies even in a simplified bi- or tripolar RoO world. The question thus centers on ways to tame the RoO tangle.

One way to relegate RoO to irrelevance is by bringing MFN tariffs to zero globally. However, since this option is unlikely in the near future, there are four further options. The first doing nothing: *status quo* RTA proliferation and a likely *de facto* bipolarization of the global RoO world map. The second and third are multilateralization and convergence. A fourth option is a combination of these two. We discuss the latter three options in turn.

#### **A. *Multilateralizing Preferential Rules of Origin***

“Multilateralizing” preferential RoO would mean establishment of multilateral disciplines on preferential rules within the WTO framework that will set limits on what rules of origin can be established in preferential agreements (while at the same time not raising the restrictiveness of RoO). This would imply a significant change from the Article XXIV *status quo*, and would undoubtedly face opposition (not least from the RTA hubs).

Complete harmonization of preferential RoO would be technically difficult given the differences in the types of RoO around the world. It would also be as politically unfeasible as it would be unpalatable to producers around the world. Third, it could be harmful in that it could force rules on RTAs that prohibit the use of non-originating materials that do not exist within the RTA cumulation zone, effectively canceling liberalization of the affected products in that RTA.

First, even subtle differences could be difficult to overcome due to political resistance by sectors benefiting from the *status quo*. Meanwhile, it is not clear that a strong global exporter lobby would materialize to voice demands for harmonization. Perhaps most importantly, both the EU and the United States would likely be reluctant to adopt each other’s RoO. Both would likely also be concerned of the other’s striving for RoO that would allow it to transship via the parties’ common PTA partners, such as Mexico.

Second, since effective restrictiveness depends not only on observed restrictiveness but also on the size of the cumulation zone, any multilateral negotiations that would place limits on preferential rules of origin would have to recognize up front that a given rule of

origin will have different effects in different RTAs, and thus for the foreseeable future some significant degree of variation across agreements will have to be tolerated.

Nonetheless, there are modalities and mechanisms by which RoO convergence could be negotiated. For example, once agreement is reached on harmonization of the non-preferential rules of origin, these could be taken as a benchmark, as foreseen in ARO. Then some mechanism could be employed for quantifying the net deviation each agreement's preferential rules of origin from this benchmark (perhaps using some variant of the indices employed in this paper). By using the net deviation, agreements could compensate for rules that are more restrictive than the benchmark on some products with rules that are less restrictive than the benchmark on other products (note that the concept here is the observed restrictiveness, not effective restrictiveness). It would also make sense, perhaps, to weigh deviations from the benchmark by the average external tariff of the countries party to the agreement, as more restrictive rules distort more in more protected sectors.

Another, alternative mechanism would place limits on preferential RoO. Such a "RoO cap" would ensure that at least the qualifying production methods in a given sector remained relatively similar across export markets. It would also enhance the prospects of linking agreements with each other in the future.

A negotiation could then seek to have each agreement modify their rules so as to reduce the net deviation from the non-preferential benchmark or cap by an agreed amount. Having established this net-deviation-reduction target, each agreement would be free to negotiate modifications to their rules of origin to meet the target in a way that is mutually acceptable and that respects the availability of inputs within their respective cumulation zones. Note that this mechanism does not aim at harmonizing rules *per se*, but, rather, at reducing the restrictiveness of the rules of origin relative to a fixed benchmark, and thus achieving a greater openness of each bloc to the rest of the world. As blocs become more open to inputs from RoW, the distortionary effects of the RoO would be reduced.

Measures to accompany such capping of RoO could involve the incorporation of the various mechanisms of flexibility to RoO regimes during the transition to a global RoO regime; and the establishment of a multilateral mechanism to monitor the member states' implementation of preferential and non-preferential RoO.

Note that whatever the negotiation methods and modalities, some form of negotiation of preferential rules in the multilateral context would have positive externalities. Rules of origin are not regularly renegotiated for a variety of good reasons (predictability and stability of the trading rules) and bad reasons (inertia, negotiation costs, externalities). One benefit of establishing negotiations to govern preferential rules is that it would generate an opportunity to open such negotiations, thus overcoming the negotiation inertia and creating political will to pay the negotiation and implementation costs. In the context of Baldwin's (2006) "juggernaut effect", such an iterative negotiation is likely to result in falling levels of protection, in this case, less restrictive rules of origin in regional trade agreements.

## **B. Convergence**

The second path to taming the RoO tangle is convergence. Before entering into what is implied by convergence, it is helpful to first discuss what it is not. Simply harmonizing rules of origin across RTAs is not “convergence”, and in fact would not even necessarily be particularly helpful. Recalling that RoO are in part determined by the availability of inputs within the relevant cumulation zone, the imposition of a standardized set of rules would likely result in *increasing* the restrictiveness, both observed and effective, of some rules in some RTAs—which would be counter-productive.

Furthermore, having similar rules would not, of itself, actually result in more openness, except where the harmonization process resulted in rules moving to lower observed restrictiveness. This is because without changing the borders of the cumulation zone(s), there would be little gain in market access.

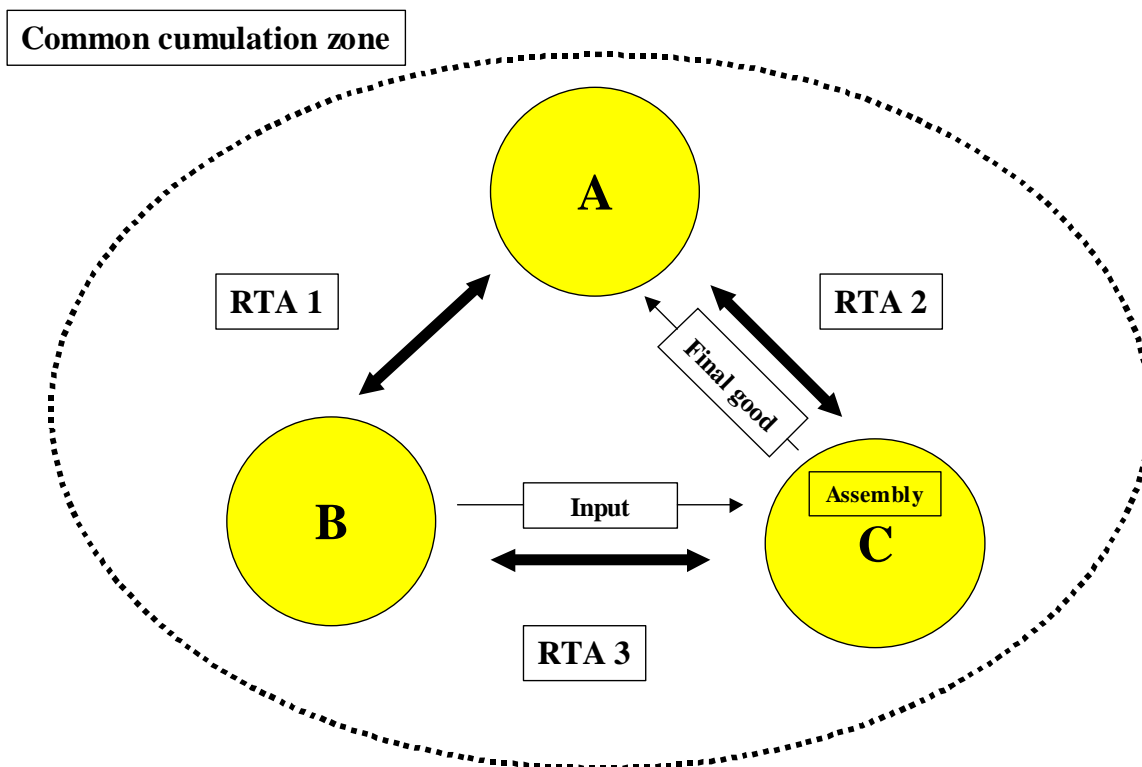
What convergence would have to mean, then, is the unification of multiple overlapping existing RTAs into a single cumulation zone with a new, single list of rules of origin.<sup>33</sup> This would require negotiation of a new list, as well as negotiation of tariff elimination for any bilateral relationship where it has not been established by an existing RTA. The latter is important as cumulation would not be viable if there are residual tariffs on either the final good or the inputs to be cumulated in any of the countries in which these originate: such differences could lead to distortions of trade and production patterns, with trade likely flowing through the lowest-tariff channels and production agglomerating in the hub country that faces lowest tariffs in the other participating countries. In a simple example in figure 14, then, convergence would enable C to import inputs free of duty from B under the B-C RTA, use the inputs for final goods destined to A’s market under the A-C RTA.

However, when seeking to encourage harmonization of RoO across RTAs, it is important to be aware that a rule that establishes the exact same requirement in two different RTAs can have dramatically different effects on firms’ cost structures in the different contexts given the differences in scale and efficiency of production of inputs and sizes of the geographic and input pools. As such, while the analysis of RoO divergence is important in that it highlights the degree to which any kind of coordination is absent from the development of this discipline, the fact that rules differ across RTAs does not mean that they are necessarily sub-optimal in any particular case.

---

<sup>33</sup> See Cornejo and Harris (2007) and IADB (2007) for a detailed treatment.

Figure 14 – Three-RTA Cumulation Zone



In practice, initial interest in expanded cumulation is implicit in recent US agreements (chapter 62 provisions in CAFTA, for example). Though their agenda is still vague, the Pacific Basin Forum of 11 countries in Latin America has formed working groups to study, among other things, trade convergence and integration. EU's new RTAs will likely carry the Paneuro rules, expanding the uniformity conducive to expanded cumulation. Finally, the growing discussion on a Free Trade Area of the Asia-Pacific (FTAAP) might entail some form of convergence rather than a full-blown mega-regional negotiation.

However, bridging RoO regimes is bound to be complex and would require at least five considerations.

First, what should be the country and sectoral coverage of a negotiation aimed at a common regime? Obviously, for any one country, the decision to join such a negotiation is ultimately a political one, but a number of factors can make such a negotiation more useful. These include an existing set of RTAs that cover the majority of the bilateral relationships within a given group of countries, and a similar strategic approach to trade policy among these countries.

Second and fundamentally important, what exact format should the common RoO regime take so as to be agreeable to all countries, *and* not to jeopardize the existing degree of

liberalization in a region?<sup>34</sup> While in this paper we do not address questions of whether CTC rules are preferable to VC rules, or whether self-certification is preferable to public certification, these questions remain important, and worthy of further study, both theoretical and empirical, before any new regional (or global) standard is set.

Third, how would the common regime relate to the existing bi- and plurilateral regimes? Would it replace the existing RTAs altogether, would it coexist with them? Under the former model, traders would be able to use the common regime only; under the latter, they could choose between the common regime (and reap the benefits of cumulation) or the existing bi- or plurilateral RoO (and forego cumulation). In the pasta metaphor, the individual spaghetti noodles of the RTAs would continue to exist, but would be covered also by a large flat piece of lasagna of the convergent origin regime.

Fourth and critically, how would a common regime interface with extra-regional RTAs? A rapidly growing share of the RTAs formed by countries is with extra-regional partners. Most countries should thus have an interest in a common regime that is both compatible with the extra-regional RTAs, and amenable to trading with extra-regional partners, rather than sealing them off from a given region.<sup>35</sup> And surely all extra-regional players have an interest in continuing to see their market access expand rather than be in these new over-arching agreements. This situation would be helped by a globally agreed limits on preferential RoO.

Fifth, who would do the talking? While governments are necessary for forming and redefining international agreements, considerations of cumulation could be wrong-headed without private sector participation, not least given that they are the end users of RTAs and thus hold the best information about the operation of RTAs and the relevance of the hypothetical problems posed by the RTA spaghetti bowl. As such, any process aimed at bridging RTAs should inherently involve public-private sector partnerships.

### ***C. Multilateralism-cum-Convergence: A “Cap-Con” Strategy***

The issue of sequencing of multilateralization and convergence is crucial, should the two concepts mean what they refer to in this paper—“capping” RoO at the multilateral level while establishing single RoO regimes at the regional (or some other group/family) levels to permit the formation of larger cumulation zones. Recall that Figure 4 illustrates the natural tendency for larger cumulation zones to negotiate rules of origin with higher observed restrictiveness. As the formation of convergent origin regimes can be expected to follow this pattern, there is in fact a danger of this leading to greater distortions of global trade flows rather than less.

Thus, in promoting convergence that also leads to more liberal global trade, it is important to first have in place some global guidelines for such preferential RoO. These guidelines would serve to counteract the tendency of larger cumulation zones to erect higher barriers to extra-zone inputs. Note that the argument presented earlier that the

---

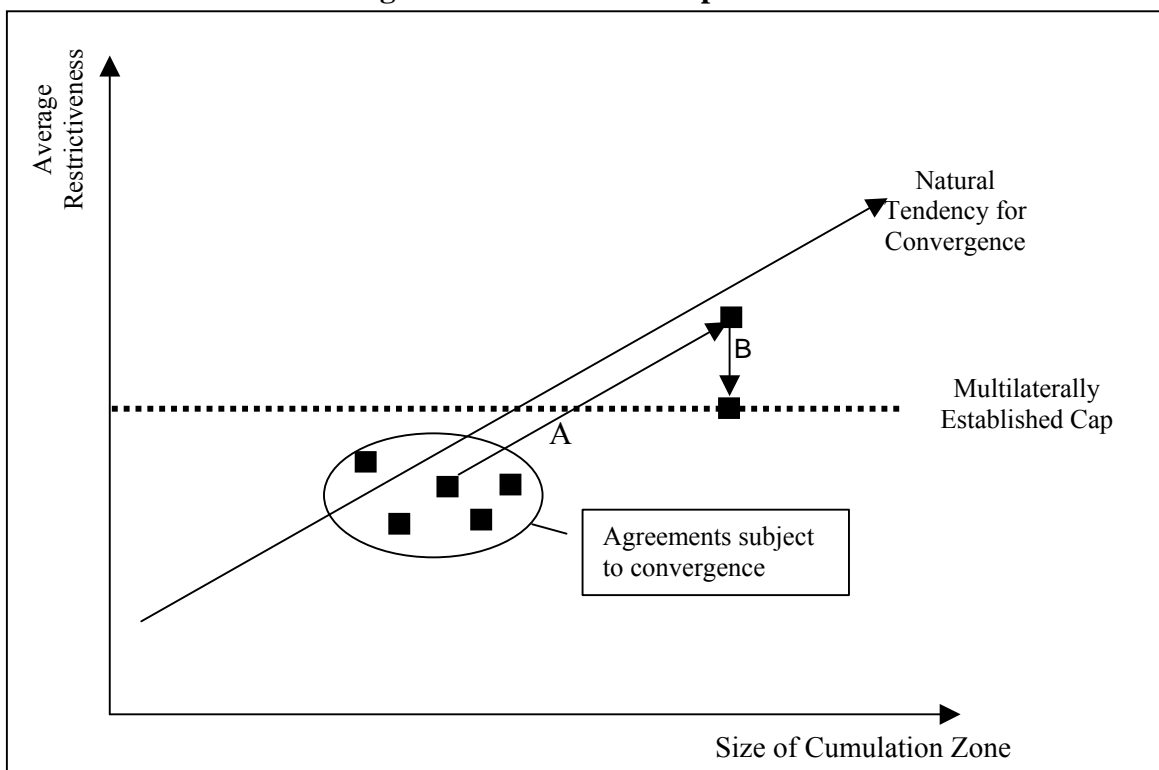
<sup>34</sup> Restrictive and complex RoO regimes have been shown to undercut RTAs’ liberalizing the potential. See Suominen (2004), Estevadeordal and Suominen (2006), and Cadot and de Melo (2007).

<sup>35</sup> For a mapping of RoO in RTAs around the world, see IADB (2006) and Estevadeordal and Suominen (2006a).

effective restrictiveness of such rules is lower in larger blocs applies to the effects that rules have on the production costs of members, as the globally low-cost producer is more likely to be included within the cumulation zone as it becomes larger. This attenuating effect is of no help to suppliers left outside the expanded cumulation zone, and it is this distortion that we seek to minimize through multilateral rules governing preferential origin regimes. Such a “cap-and-con strategy” is based on a notion that global “capping” of RoO is crucial so as to not “converge” into trade-diverting megablocs.

The proposed optimal outcome can be shown in Figure 15. The countries party to a group of overlapping RTAs decide to establish a convergent origin regime that will allow cumulation among all of them under a newly negotiated set of rules of origin. This new origin regime would move them up line A following the natural tendency for larger grouping towards more restrictive regimes. In the presence of a multilaterally agreed guidelines (a cap) on the restrictiveness of preferential origin regimes, this movement would be counteracted with a move down line B.

**Figure 15 - Effects of “Cap-and-Con”**



The form of guidelines not central to this argument. Whether they serve to promote one type of criteria over another (CTC over VC or vice versa, for example) is a distinct question from whether such guidelines function to limit the erection of new barriers to global trade. As discussed above, it is also preferable that the limitations be imposed on some aggregate calculus and not product by product, as flexibility at this level would be indispensable for political economy reasons within each convergent group. Also of relatively less importance is whether such limitations would apply to existing origin regimes, or whether such regimes could be grandfathered in, having to meet the guidelines only when the member countries choose to modify them.

However these multilaterally agreed limitations would work, the result would be greater openness of larger blocs, which would lead to more efficient international allocation of resources and expanded trade. The important danger to keep in mind when establishing such limitations, however, is that they must be set in such a way as to avoid reducing the incentive for convergence. Bringing groups of countries with multiple, overlapping RTAs into a single cumulation zone has the potential to greatly increase trade, especially among those that might be considered “spokes”. Any multilateral regulations on this process should encourage such a process, seeking only to mitigate potential negative effects on excluded countries, not to impede the formation of expanded cumulation zones.

Such regulations should be feasible, especially as many rules of origin may be “legacy” rules – rules that were negotiated in one RTA and simply copied without objection in the parties’ subsequent RTAs despite being unnecessarily restrictive. While the reduction of the restrictiveness of these rules may have minimal effect on intra-RTA trade, the lowering of barriers could increase openness to producers of intermediates in excluded countries.

What matters most for the global trading system is that such guidelines be put in place. While optimally this would happen before the convergence processes begin, that horse seems to have already left the barn, as evinced by the current policy debates on some regional bridging of RTAs in the Americas and Asia, in particular. The Paneuro architecture implies that all EU’s new RTAs will have the potential to continue the expansion of that cumulation zone, though at least in that case the prospect for the increasing restrictiveness of the rules is reduced as these agreements tend to carry identical rules to the previous agreements.

A positive externality from a process to establish global constraints on preferential rules of origin is that it would require the countries of each RTA to reexamine and renegotiate their rules. An important characteristic of RoO in RTAs is that they are modified extremely rarely, and almost never completely overhauled. At most countries will succumb to pressure from very specific industries and modify rules for a handful of products every few years, but the broad architecture of a given RTA origin regime is likely to remain fixed for decades after entry into force. This despite both implicit and explicit recognition of the fact that these rules need to adapt over time.<sup>36</sup> The recent wholesale replacement of the ANZCERTA rules is the exception that proves the rule.

#### ***D. Where Are We Headed?***

Having described what we consider to be the optimal path for both regional and multilateral treatment of rules of origin, let us step back and reengage with reality.

---

<sup>36</sup> “The present framework for determining, managing, and verifying preferential origin no longer seems wholly adapted either to [the needs of the preferential arrangements are designed to satisfy] or to quantitative and qualitative trends in the international economy” European Commission (2003) as cited in Augier et al (2005). More implicitly, the differences between the origin regimes of recent US RTAs and that of the NAFTA are quite significant, suggest that the US, at least, would negotiate a very different regime for its agreements with Canada and Mexico given the opportunity.

Optimal is one thing, but what is likely? We see five potential scenarios, summarized in Table 4.

The first potential scenario is one where nothing changes. Countries continue to negotiate RTAs bilaterally or in small groups, with no convergence of origin regimes and no rules established at a global level to regulate the origin regimes of current or future RTAs. This is the “worst case scenario” described earlier, where many small, overlapping RTAs channel preferential trade in narrow paths that prevent many producers from sourcing inputs efficiently, and prevent others from producing at all as no cumulable inputs are available.

The second possible scenario is one of convergence, whereby groups of countries with overlapping begin to negotiate convergent origin regimes, but absent any multilateral guidelines that would limit the natural tendency of larger cumulation zones to apply more restrictive rules. The gains to be had from allowing expanded cumulation within these groups of countries are likely to be quite significant. However, these groupings are likely to be prejudicial to suppliers in excluded countries as the rules become more restrictive.

The third possible scenario is one where multilateralization of preferential rules occurs, but there is little convergence of existing regimes. This is somewhat better than the “worst case scenario” above, but would still exclude the gains to be had from expanding cumulation.

The fourth potential scenario to consider is the “cap-and-con” outcome we describe in the previous section, where regional convergence is accompanied by multilateral limitations on rules of origin. This would capture the benefits of both expanded cumulation and relatively less restrictive RoO.

The final relevant scenario is where there is successful multilateral tariff liberalization. The conclusion of a round of tariff reductions that results in the binding of MFN tariffs at zero or very low levels for nearly all products would make all preferential origin regimes irrelevant, as there would be no meaningful tariff preferences to qualify for.

Of these five scenarios, the second is probably the most likely. initial movements towards convergence are already visible, as described above. Most of the significant bilateral relationships in world trade are already subject to RTAs already (certainly among countries prone to liberalization) and “juggernaut” forces for liberalization, currently frustrated at the multilateral level, are pushing on regional levers.

This is not the worst case scenario, but it is not optimal either. The outcome is likely to involve multiple overlapping “lasagna plates”, the largest of which would be centered on the US and Europe, with additional Latin American and Asian bits. Bipolar RoO world is likely welfare superior to a fully balkanized RoO world, as larger cumulation zones increase trade, especially among the current spoke countries. But it is not too difficult to imagine that such zones could end up with highly restrictive rules of origin that would serve to isolate production within each zone, with attendant losses for global efficiency.

**Table 4 – Potential Scenarios for the RoO World**

Option	Main Players	Pros and Cons	Current Likelihood
Nothing Changes	Everybody	Pro (or con?): no negotiation costs beyond those of RTAs; potential <i>de facto</i> broad global bipolar convergence under US and EU RoO models Con: potential exacerbation of the spaghetti bowl problem	Medium
Multilateralization	Global RoO Hubs (US, EU, Mexico, Australia, Japan, Chile), plus spokes	Pros: Spaghetti problem is attenuated by global limits on RoO Cons: Negotiation is a time consuming and costly global contest involving cycling; potential straitjacket RoO resulting	Low
Convergence	Each Family Hub and Its Spokes	Pros: Creation of lasagna from spaghetti; regional cumulation bowls Cons: Negotiation is a time consuming and costly regional contest in the absence of a RoO hegemon; opens potential for trade-diverting plates and variety of lasagna	Highest
Cap-and-Con	Main Regional RoO Hubs	Pros: Flexibility-cum-openness at the regional level; simpler lasagna plates Con: potential straitjacket cap RoO that discourages convergence	Low

## VI. Conclusion

The path to global free trade could proceed on several fronts: first, the standard front of multilateral tariff reductions; second, the gradual opening of preferential blocs via reduction of the restrictiveness of preferential rules of origin. This can occur either via regulation at the global level or via autonomous reform. Third, a path may be found through the expansion of the cumulation zones of the preferential blocs in ways that at the same time retain and deepen bloc-to-bloc liberalization. Finally, we may see a some combination of the three mechanisms.

This paper has analyzed the feasibility, utility and mechanics of such paths, focusing in particular on RTA rules of origin. We have described RoO regimes around the world, detailed the degree of restrictiveness within regimes and divergence across regimes, and elaborated why these two dimensions matter for economic outcomes. We have subsequently discussed policy options for reducing restrictiveness and divergence around the world, and found that such a reduction might be most likely at the regional level. Nonetheless, in our view, such processes should be complemented by a multilateral

process of RoO capping, though it is important that such caps do not discourage regional convergence.

To be sure, opening a full renegotiation of an origin regime, or worse, regimes for several RTAs at once and reconciling differences across regimes either at the regional or global levels, certainly feels like opening a Pandora's Box of endless troubles. Nonetheless, the prospect of incorporating lessons learned over the past decade or more of operation of so many RTAs, bringing the regimes up to date with the commercial and technological realities of the 21<sup>st</sup> century, certainly makes such an effort seem worthwhile. The way these issues are addressed, both regionally and globally, will determine how, when, and if we arrive at global free trade.

## References

- Anson, J., O. Cadot, A. Estevadeordal, J. de Melo, A. Suwa Eisenmann, B. Tumurchudur, 2003, "Rules of Origin in North-South Preferential Trading Arrangements with an Application to NAFTA", mimeo, University of Lausanne.
- Augier, P., Gasiorek, M., and Lai Tong, C. 2005 "The Impact of Rules of Origin on Trade Flows", *Economic Policy*, July 2005.
- Baldwin, R., 2006, "Multilateralising Regionalism: Spaghetti Bowls as Building Blocs on the Path to Global Free Trade" NBER Working Paper No. 12545
- Cadot, O., J. de Melo, A. Estevadeordal, A. Suwa-Eisenmann and B. Tumurchudur, 2002, "Assessing the Effect of NAFTA's Rules of Origin", mimeo.
- Carrere, C. and de Melo, J., 2006, "Are rules of origin equally costly? Estimates from NAFTA" in Cadot, O., Estevadeordal, A., Suwa-Eisenmann, A., and Verdier, T. eds. *The Origin of Goods*. Oxford University Press. Oxford..
- Cornejo, R. and Harris, J. 2007 "Convergence in the Rules of Origin Spaghetti Bowl: A Methodological Proposal" Mimeo. IDB/INTAL Working Paper forthcoming.
- Driessen, B. and F. Graafsma, 1999, "The EC's Wonderland: An Overview of the Pan-European Harmonised Origin Protocols", *Journal of World Trade* 33 (4).
- Estevadeordal, A., 2000, "Negotiating Preferential Market Access: The Case of the North American Free Trade Agreement", *Journal of World Trade* 34 (1).
- Estevadeordal, A. and K. Suominen, 2003, "Rules of Origin in FTAs in Europe and in the Americas: Issues and Implications for the EU-Mercosur Inter-Regional Association Agreement", in: Valladão, A. G. A. and R. Bouzas, eds., *Market Access for Goods & Services in the EU-Mercosur Negotiations* (Chaire Mercosur de Sciences Po, Paris).
- \_\_\_\_\_, 2006a, "Rules of Origin: A World Map", in: Cadot, O., A. Estevadeordal, A. Suwa-Eisenmann, and T. Verdier, eds., *The Origin of Goods: A Conceptual and Empirical Assessment of Rules of Origin in PTAs* (CEPR and Oxford University Press).
- \_\_\_\_\_, 2006b, "Trade Effects of Rules of Origin" Mimeograph forthcoming in Estevadeordal and Suominen, eds. *Gatekeepers of Commerce: Rules of Origin in Regional Trade Agreements*.
- Estevadeordal, A., López-Córdova, E. and Suominen, K. (2006) "How do Rules of Origin Affect Investment Flows? Some Hypotheses and the Case of Mexico" INTAL-ITD Working Paper 22. INTAL. Buenos Aires.

Falvey, R. and G. Reed, 2000, "Rules of Origin as Commercial Policy Instruments", Research Paper No. 2000/18 of the Centre for Research on Globalization and Labor Markets, University of Nottingham.

Garay, L. J. and R. Cornejo, 2002, "Metodología para el Análisis de Régimenes de Origen: Aplicación en el Caso de las Américas", INTAL-ITD-STA Documento de Trabajo 8 (Inter-American Development Bank, Washington, DC).

Harris, J., 2007, "Measurement and Determinants of Rules of Origin in Preferential Trade Agreements", Ph.D. Dissertation, University of Maryland, College Park.

Hirsch, Moshe, 2002, "International Trade Law: Political Economy and Rules of Origin" *Journal of World Trade* (2).

IADB, 2007, "Bridging RTAs in the Americas", forthcoming Policy Report.

IADB, *Coping with the Spaghetti Bowl of FTAs in LAC and Asia: Effects of FTAs on Company Strategies*, forthcoming in 2008.

Inama, S., 2005, "The Association of South East Asian Nations-- People's Republic of China Free Trade Area: negotiating Beyond Eternity With Little Trade Liberalization?" *Journal of World Trade* (3).

Jensen-Moran, Jeri, 1996, "Trade Battles as Investment Wars: The Coming Rules of Origin Debate." *The Washington Quarterly* 19, 1 (Winter).

Krishna, K. and A. O. Kruger, 1995, "Implementing Free Trade Areas: Rules of Origin and Hidden Protection", in: A. Deardorff, J. Levinsohn and R. Stern, eds., *New Directions in Trade Theory*, Ann Arbor: University of Michigan Press, 1995.

Krueger, A. O., 1993, "Free Trade Agreements as Protectionist Devices: Rules of Origin", NBER Working Paper No. 4352.

Lloyd, P. J., 1997, "Towards a Framework of Trade and Competition Policy", *Asia-Pacific Economic Review* 3 (2).

Portugal-Perez, A., 2006, "Disentangling the determinants of Rules of Origin in North-South Preferential Trade Agreements. Evidence for NAFTA" Mimeo. Université de Genève.

Reyna, J. V., 1995, *Passport to North American Trade: Rules of Origin and Customs Procedures under NAFTA* (Shepard's/McGraw-Hill, Inc, Colorado Springs).

Suominen, K., 2004, *Rules of Origin in Global Commerce*, PhD Dissertation, University of California, San Diego.





## **Appendix II - Types of Rules of Origin in RTAs**

There are two types of rules of origin, non-preferential and preferential RoO. Non-preferential RoO are used to distinguish foreign from domestic products and to determine the “official origin” for purposes of 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, meanwhile, 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.

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

### ***A. Product-Specific RoO***

The Kyoto Convention recognizes two basic criteria to determine origin: wholly obtained or produced, and substantial transformation.<sup>37</sup> 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 three 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 until the inception of the Canada-US Free Trade Agreement (CUSFTA) in 1989 and, subsequently, the North American Free Trade Agreement (NAFTA) in 1994 (Reyna 1995: 7).<sup>38</sup>

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), subheading (6 digits) or item (8-10 digits) in the exporting PTA member. The CTC can be modified by exceptions (prohibitions of inputs that would have met the CTC requirement) or additions (permitting inputs that would have been proscribed by the CTC requirement).

---

<sup>37</sup> 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.

<sup>38</sup> 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).

The second criterion is value content (VC), which requires the product to acquire a certain minimum local value in the exporting country. 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 to products meeting a minimum percentage of originating parts out of the total.

The third RoO component is technical requirement (TECH), which requires the product to undergo certain manufacturing operations in the originating country. TECH essentially prescribes or prohibits the use certain input(s) and/or the realization of certain process(es) in the production of the good.<sup>39</sup> It is a particularly prominent feature in RoO governing textile products.

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 plus RVC.

### ***B. Regime-Wide RoO***

Besides product-specific RoO, RoO regimes vary by the types of general RoO they employ—including 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 and TECH criteria by making it easier for products with non-originating inputs to qualify.

Second, cumulation allows producers of one PTA member to use 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 the PTA-conferred preferential treatment in that partner. Basically all RoO regimes apply bilateral cumulation. Under diagonal cumulation, countries tied by the same set of preferential origin rules can use products that originate in any part of the common RoO cumulation zone as if they originated in the exporting country. Full cumulation extends diagonal cumulation. It provides that countries tied by the same RoO regime can use goods produced in any part of the common RoO zone even if these were not originating products: any and all processing done in the zone is calculated as if it had taken place in

---

<sup>39</sup> TECH can be highly discretionary given that lack of classification tools to objectively guarantee sufficient transformation in the production of the good.

the final country of manufacture. As such, diagonal and full cumulation can notably expand the geographical and product coverage of a RoO regime.<sup>40</sup>

Whereas *de minimis*, and cumulation allow for leniency in the application of RoO, there are provisions that may have the opposite effect and increase the stringency of RoO.<sup>41</sup>

A complex method of certifying the origin of goods can impose high administrative costs on exporters. The main certification methods are self-certification by exporters, certification by the exporting country government or an industry umbrella group to which the government has delegated the task of issuing the certificate, and a combination of the “private” self-certification and the “public” governmental certification. 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.

---

<sup>40</sup> 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. Full cumulation is more liberal than diagonal cumulation by allowing a greater use of third-country materials. However, it is rarely allowed in RoO regimes.

<sup>41</sup> To be sure, non-members to a cumulation area may view the cumulation system as introducing another layer of discrimination by virtue of its providing incentives to the member countries to outsource from within the cumulation zone at the expense of extra-zone suppliers.









## Appendix III – Methodologies for Measuring Restrictiveness of RoO

### I. Estevadeordal (2000)

The observation rule for 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 the level of tariff item (8-10 digits), CS is change at the level of subheading (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.

Suominen (2004) makes three modifications to the observation rule in the case of RoO for which no CTC is specified in order to allow for coding of such RoO in the PANEURO, SADC, and other regimes where not all RoO feature a CTC component. 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 permitted non-originating inputs is below 50 percent, as well as when the import content criterion is combined with a technical requirement. Second, RoO featuring an exception alone is assigned the value of 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.

## II. Harris (2007)

This index is based on a point system that adds or subtracts points based on different elements used in the definition of the rule of origin. The Change of Classification points are based on the magnitude of the required change, as are Exception Points and Addition Points (Additions are like negative exceptions, where non-originating inputs that would otherwise be prohibited by the change of classification are permitted). Value Test Points are based on the magnitude of the required value content, with adjustments that depend on the method of calculation. The point values were calibrated by observing the relative frequencies of alternative rule combinations in a sample of 13 RTAs in the Americas.

### **Restrictiveness Points:**

#### Change of classification points:

$\Delta I$	+2
$\Delta S$	+4
$\Delta H$	+6
$\Delta C$	+8

#### Exception Points:

exI	+4
>exI and $\leq$ exS	+5
>exS and $\leq$ exH	+6
>exH and $\leq$ exC	+7
>exC	+8

#### Addition Points:

addI	-5
>addI and $\leq$ addS	-6
>addS and $\leq$ addH	-7
>addH and $<$ addC	-8
add without CC <sup>42</sup>	+8

#### Value Test Points:

>0% and $\leq$ 40%	+5
>40% and $\leq$ 50%	+6
>50% and $\leq$ 60%	+7
>60%	+8
Net Cost	+1

#### Technical Requirement Points: +4

#### Alternative Rule Points: -3

#### Wholly Obtained: +16

<sup>42</sup> CC = change of classification.

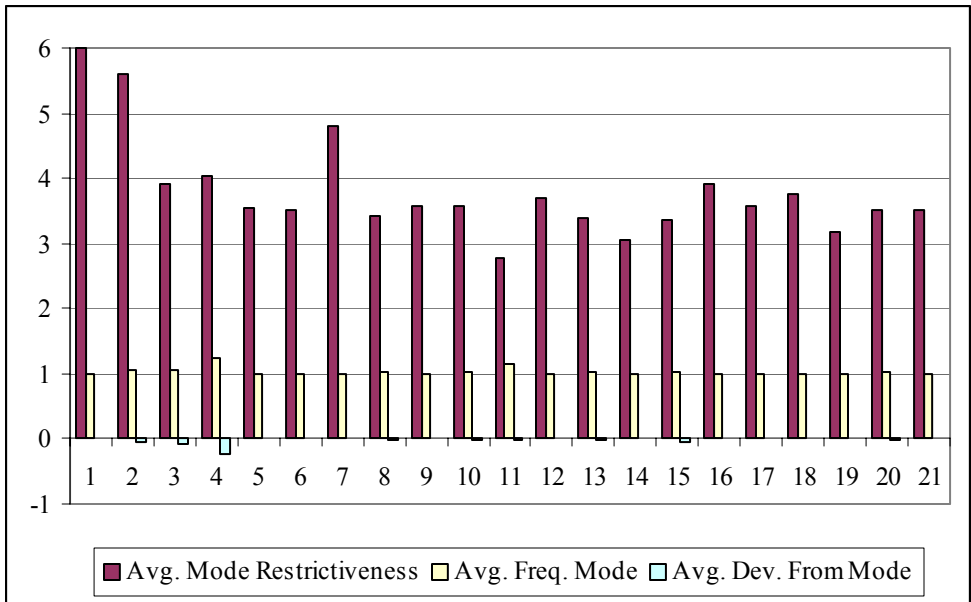
**Appendix IV – Sectoral RoO Restrictiveness in Main RoO Families**

**Table IV-1 Similarity of Rules in Selected Families  
(% of agreements coinciding at the product level)**

Section	Africa	Amer.- Asia	Americas	Asia	Chile	Europe	Japan	Mexico	Singapore	USA	USA-NG	Global
1. Live Animals	25%	67%	47%	34%	56%	100%	74%	69%	39%	55%	90%	31%
2. Vegetable Products	27%	77%	48%	39%	61%	100%	61%	81%	40%	58%	92%	34%
3. Fats and Oils	27%	61%	40%	25%	26%	100%	66%	45%	26%	39%	65%	26%
4. Food, Bev. & Tobacco	31%	36%	43%	30%	43%	98%	55%	56%	29%	51%	79%	28%
5. Mineral Products	25%	55%	49%	29%	43%	100%	35%	88%	40%	49%	80%	29%
6. Chemicals	25%	29%	48%	26%	29%	99%	47%	49%	27%	41%	61%	32%
7. Plastics	25%	30%	52%	27%	29%	88%	45%	46%	30%	32%	46%	35%
8. Leather Goods	25%	54%	49%	32%	37%	100%	54%	46%	32%	56%	88%	30%
9. Wood Products	25%	84%	49%	51%	59%	100%	67%	75%	48%	60%	98%	37%
10. Pulp and Paper	25%	59%	47%	38%	48%	100%	29%	68%	42%	43%	68%	30%
11. Textile and App.	29%	57%	31%	20%	43%	95%	36%	60%	25%	67%	86%	27%
12. Footwear	25%	45%	35%	28%	42%	94%	39%	71%	33%	42%	61%	25%
13. Stone and Glass	25%	57%	49%	25%	48%	100%	27%	88%	35%	53%	88%	31%
14. Jewelry	25%	60%	49%	29%	47%	100%	42%	74%	31%	45%	78%	30%
15. Base Metals	26%	46%	44%	30%	45%	98%	27%	69%	35%	49%	79%	29%
16. Mach. & Elec Eq.	25%	42%	44%	26%	43%	96%	30%	74%	31%	49%	81%	31%
17. Transportation Eq.	25%	41%	48%	26%	40%	94%	28%	64%	27%	52%	66%	34%
18. Optics	25%	50%	54%	26%	53%	96%	31%	69%	30%	56%	83%	37%
19. Arms & Ammun	25%	47%	50%	28%	58%	100%	26%	76%	50%	67%	88%	34%
20. Diversified Merchandise	26%	42%	48%	25%	42%	97%	29%	81%	29%	55%	67%	32%
21. Works of Art, Misc.	25%	46%	49%	26%	25%	100%	25%	89%	25%	48%	79%	30%

**Figure IV-1-12: Average Mode Restrictiveness, Frequency of Mode, and Deviation from Mode in 12 Families**

**Figure IV -1 Africa (4 Agreements)**



**Figure IV -2 America - Asia (7 Agreements)**

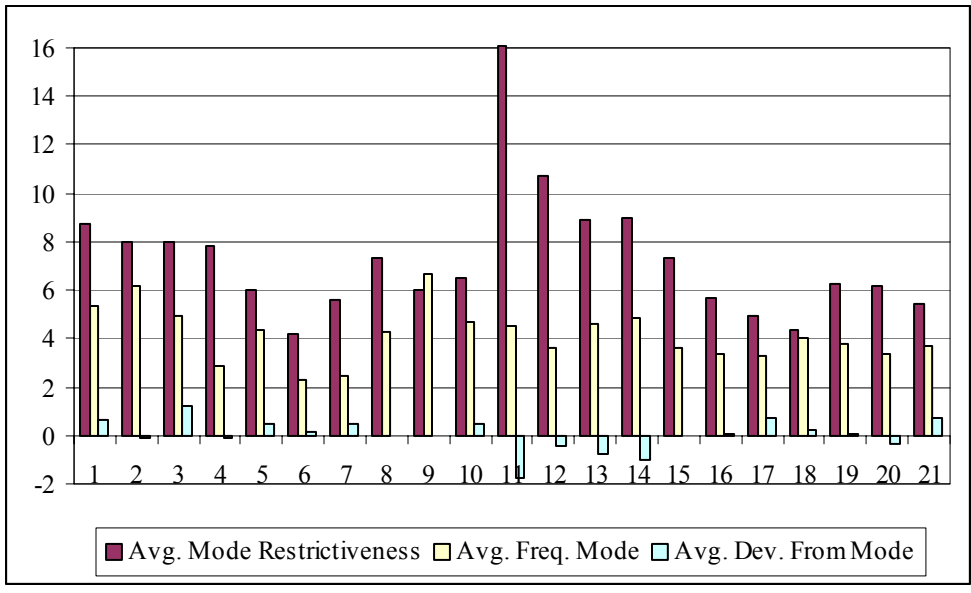


Figure IV -3 America (39 Agreements)

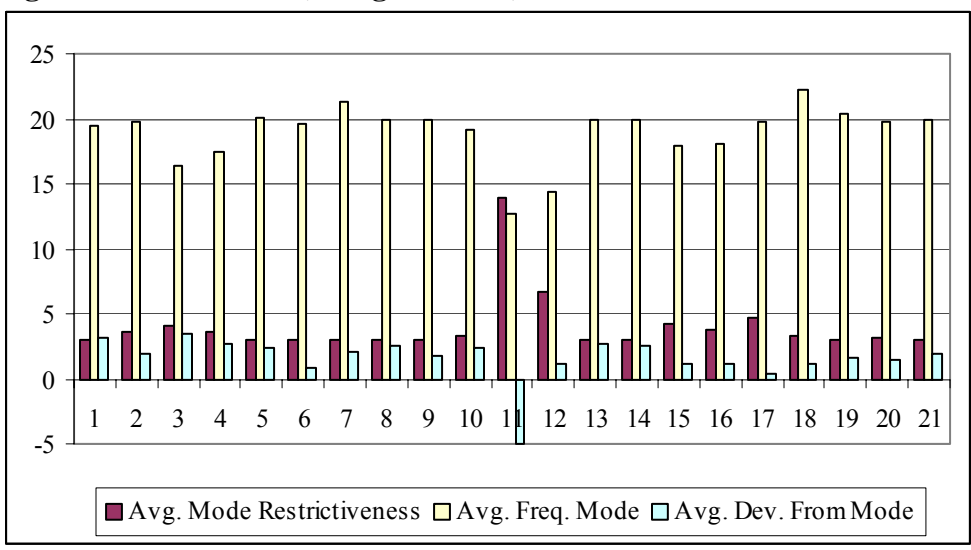
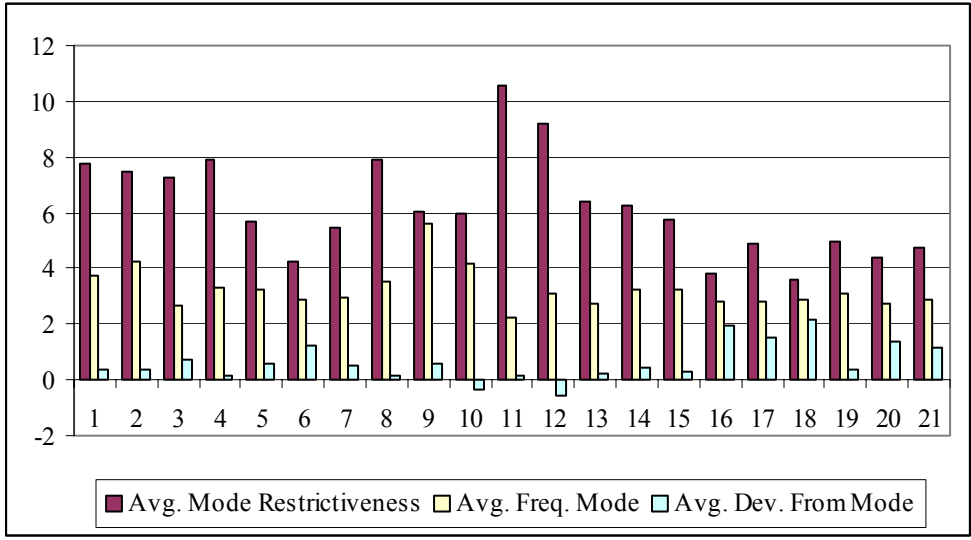
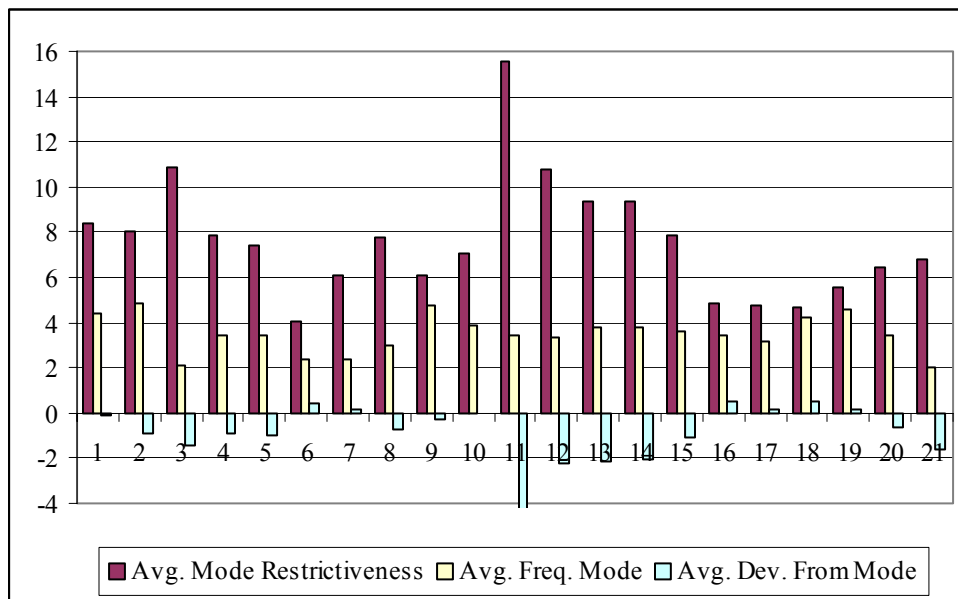


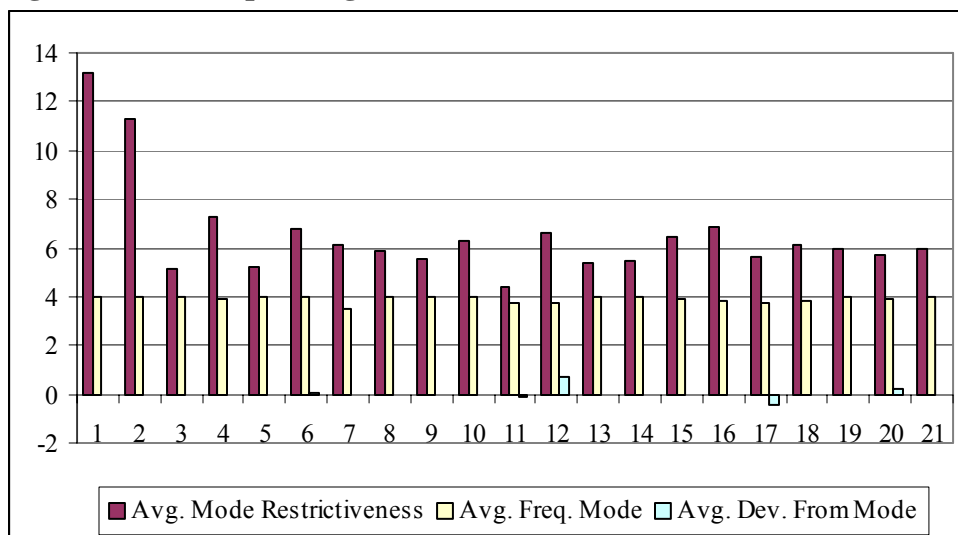
Figure IV -4 Asia (11 Agreements)



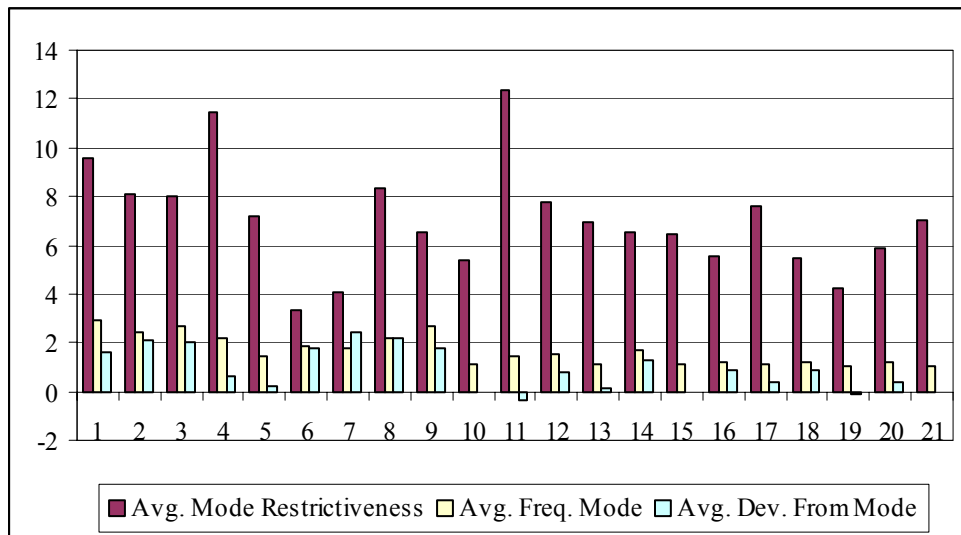
**Figure IV -5 Chile (8 Agreements)**



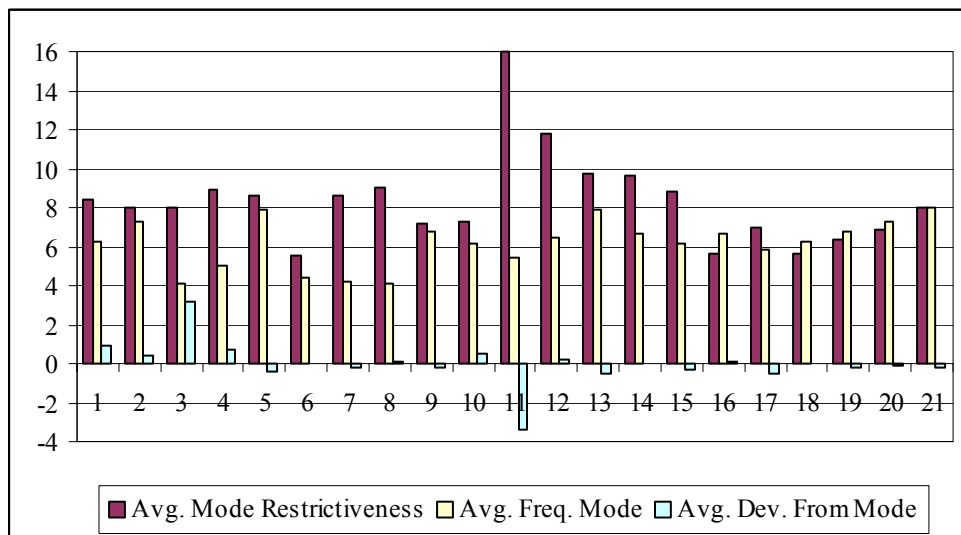
**Figure IV -6 Europe (4 Agreements)**



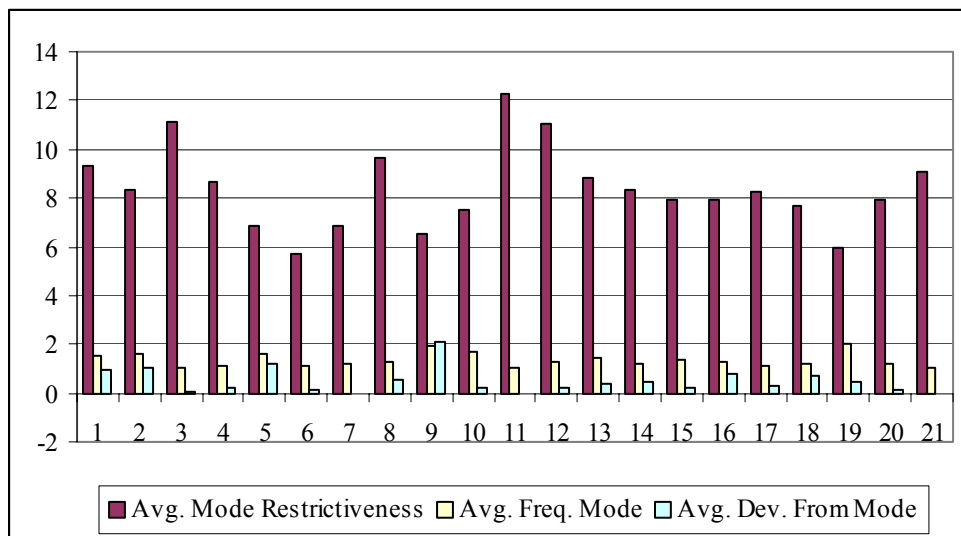
**Figure IV -7 Japan (4 Agreements)**



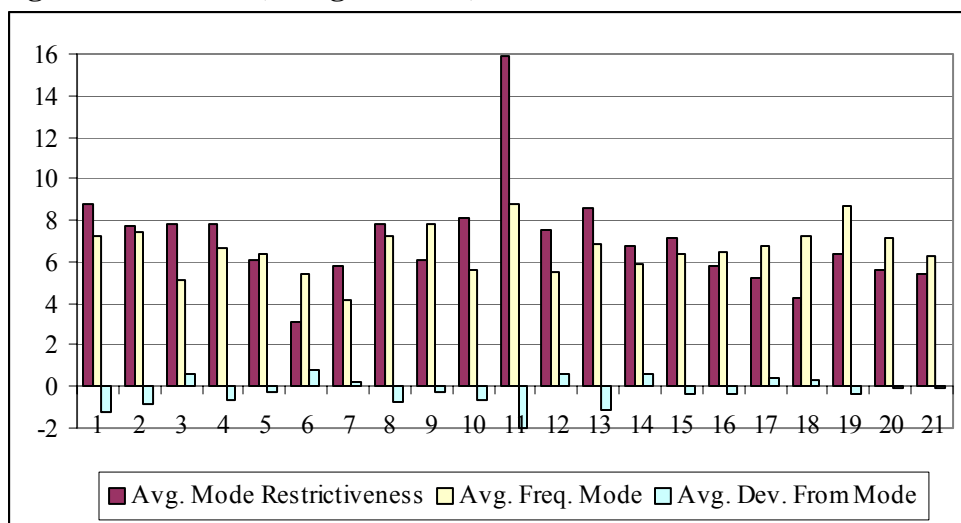
**Figure IV -8 Mexico (9 Agreements)**



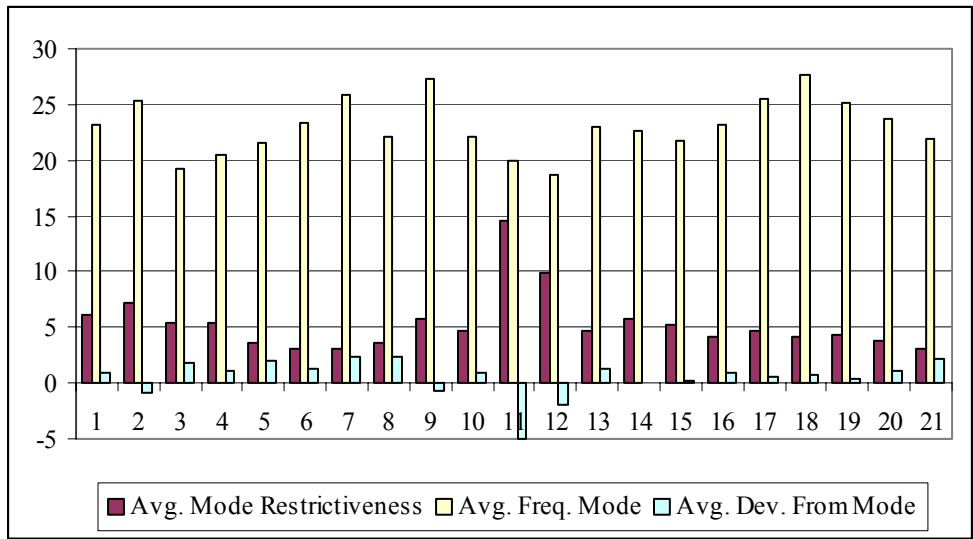
**Figure IV -9 Singapore (4 Agreements)**



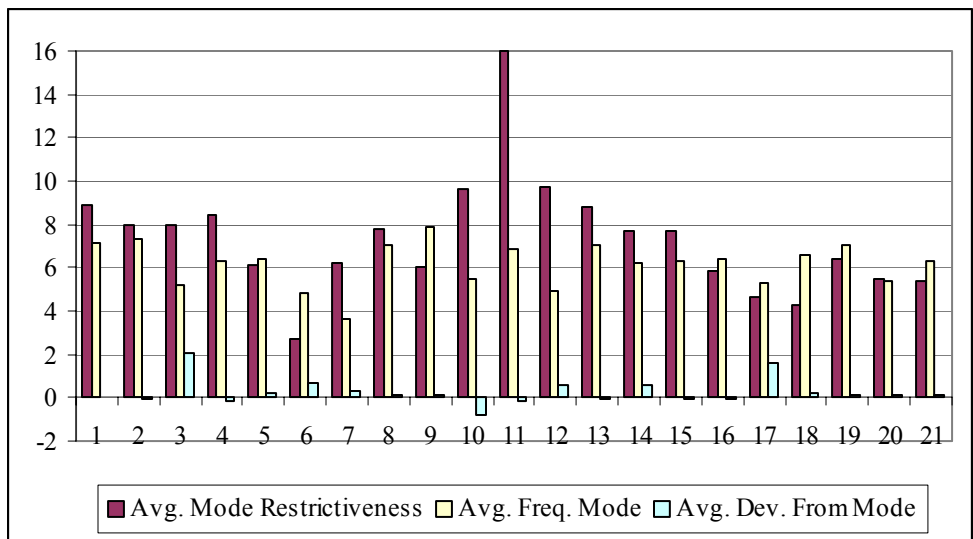
**Figure IV-10 USA (13 Agreements)**



**Figure IV -11 Global (69 Agreements)**



**Figure IV-12 USA-NG (10 Agreements)**



**Table IV-2 - Revealed Families**  
(With frequency Greater than 200)

Revealed Family	Frequency
BANGKOK	2,227
JPNSING	1,822
AUSSING	1,650
ASEANKOR, ECOWAS, JPNMYS	1,148
ASEAN, CHLCHN, USABAH, USAISR, USAJOR, USAMOR	1,028
ASEAN, USABAH, USAISR, USAJOR, USAMOR	952
COMESA	828
ASEANKOR, ECOWAS	741
ARGBRAPER, PRYPER, URYPER, ARGCOL, ARGECU, ARGVEN, BRACOL, BRAECU, BRAVEN, PRYCOL, PRYECU, PRYVEN, URYCOL, URYECU, URYVEN, CANDINA, CHLPER, MERCOSUR, MERCOSURBOL, MERCOSURCHL, SAFTA	708
ECOWAS	708
AUSSING, BANGKOK	574
USAISR	547
ASEANKOR, ECOWAS, JPNMYS, JPNTHA	458
MERCOSURBOL, MERCOSURCHL	409
AUSTHA	401
PANEURO, EUCHL, EUMEX, EUZAF	383
PRYPER	346
ASEANCHN, CARICOM, CHLCHN	334
AUSSING, MERCOSUR, MERCOSURBOL, MERCOSURCHL, SADC	307
P4, THANZ	294
AUSSING, PANEURO, EUCHL, EUMEX, EUZAF	276
CACM-RD	275
ARGBRAPER, PRYPER, URYPER, ARGCOL, ARGECU, ARGVEN, BRACOL, BRAECU, BRAVEN, PRYCOL, PRYECU, PRYVEN, URYCOL, URYECU, URYVEN, CANDINA, CHLPER, JPNTHA, MERCOSUR, MERCOSURBOL, MERCOSURCHL, SAFTA	272
AUSTHA, USACOL, USAPER	259
BANGKOK, MERCOSUR	242
CHLKOR	236
ASEANKOR	233
ARGVEN	229
CHLMCCA, ECOWAS	218
AUSNZ, P4, THANZ	211
JPNMYS	202