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Rules of Origin: World Map and Policy Options

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3

Mapping and measuring Rules of Origin around the world

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3.1 Introduction

Preferential trading agreements (PTAs) have proliferated spectacularly around the world over the past decade.¹ The wave of PTA formation has carried with it a colorful mosaic of trade disciplines—such as provisions on market access for goods and services, standards, safeguards, government procurement, and investment—to govern economic relations between the PTA partners. These various rules dispersed through PTAs are hardly inconsequential given that more than a third of global commerce takes place within PTAs.² Moreover, reverberating to firms' export, outsourcing, and investment decisions around the world, PTA disciplines arbitrate both actual and potential trade and investment flows within PTAs—and between PTAs and the rest of the world (ROW).

Yet, the richness of the PTA universe notwithstanding, there are astonishingly few rigorous efforts to disaggregate PTA agreements in order to analyse the operation and effects of the various rules they carry.³ This,

¹ PTAs include free trade agreements, customs unions, common markets, and single markets. Some 250 PTAs had been notified to the World Trade Organization (WTO) by the end of 2002; of these, 130 were notified after January 1995. The WTO expects the number of PTAs to soar to nearly 300 by the end of 2005.

² When unilateral preferential schemes such as the Generalized System of Preferences (GSP) are accounted for, no less than 60 per cent of world trade is estimated to be conducted on a preferential basis. Importantly, the unilateral preferential programs carry many of the same disciplines as PTAs.

³ The few mappings of PTA disciplines include WTO (1998, 2002a,b), IADB (2002), and Suominen (2004) produced in tandem with this chapter. The few existing rigorous, scholarly studies on the determinants of PTA provisions (beyond the contributions on Rules of Origin

Mapping and measuring Rules of Origin around the world

in turn, implies that (1) very little is known about the compatibility of PTA agreements with one another or with the multilateral WTO Agreements; (2) the political economy sources of the divergent contractual formats of PTAs remain unexplored; and (3) analysts have yet to disentangle the respective economic effects of the different PTA disciplines from each other, let alone from the effects of variables beyond PTAs. The lack of understanding of the various component parts of the rapidly burgeoning PTA universe severely undercuts the credibility and usefulness of the arguments of both those who view PTAs as discriminatory instruments, hostage to protectionist interests that work to obstruct global trade liberalization, and those who regard PTAs as containing a liberalizing logic conducive to multilateral opening.

The purpose of this chapter is to break new ground in dissecting PTAs by focusing on Rules of Origin (RoO), a crucial yet poorly understood market access discipline included in virtually every PTA. The economic justification for RoO is to curb trade deflection—to avoid products from non-PTA members from being trans-shipped through a low-tariff PTA partner to a high-tariff one. As such, RoO are an inherent feature of free trade agreements (FTAs) where the member states' external tariffs diverge and/or where the members wish to retain their individual tariff policies *vis-à-vis* the 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 PTAs contain rules for establishing the origin of goods.⁴ RoO are not only a central facet of preferential trading today, but also at the heart of many ongoing PTA negotiations, such as the 34-country talks to establish the Free Trade Area of the Americas (FTAA), and the European Union-Southern Common Market (Mercosur) negotiations to connect the world's two largest customs unions. In addition, RoO are gaining growing policy attention at the multilateral level: in preparation for the Doha Trade Round, the WTO's Committee on Regional Trade Agreements has for the

in this volume) tend to center on a single PTA and examine intersectoral variation in its market access provisions. See Milner (1997); Kowalczyk and Davis (1998); Olarreaga and Soloaga (1998); and Estevadeordal (2000). For the effects of PTAs' market access provisions, see Estevadeordal and Robertson (2002) and Ghosh and Yamarik (2003).

⁴ The Asia-Pacific Cooperation (APEC) forum is a prominent exception, with its members employing their respective domestic RoO. APEC is based on a principle of open regionalism—extending tariff preferences on an MFN basis—which renders the need for preferential RoO obsolete.

first time raised preferential RoO to a systemic issue in the negotiation agenda.

Since a failure to meet the RoO disqualifies an exporter from the PTA-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. But what renders RoO particularly relevant is that they are hardly 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 considered a trade-policy instrument that can work to offset the benefits of tariff liberalization.⁵ Often negotiated at up to 8- or 10-digit levels of disaggregation, RoO, like the tariff, make a superbly targetable instrument. Moreover, that RoO are generally defined in highly technical terms rather than assigned a numerical value entails that they can be tailored for each individual product differently, and that they are not nearly as immediately quantifiable and comparable across products as the tariff is.

It is the use of RoO as a political-economy instrument that helps account for the choice of RoO to govern preferential economic exchange—for the integrating governments' willingness to expend time and resources on the tedious, technical, and often highly contentious crafting of RoO protocols. After all, governments could completely forego using RoO by entering into a CU or by excluding the potentially trade-deflecting economic sectors from the PTA's coverage. Yet, the bulk of PTAs employ RoO, and RoO of widely different types and combinations.

Notwithstanding RoO's function of refereeing preferential market access, potential uses for distributive purposes, complexity in existing PTAs and centrality in ongoing PTA negotiations, and increasing relevance on the multilateral agenda, the global RoO panorama remains largely unexplored.⁶ It is the task of this chapter is to mend this gap. We present a

⁵ Most prominently, RoO can be employed to favor intra-PTA industry linkages over those between the PTA and the ROW, and, as such, to indirectly protect PTA-based input producers *vis-à-vis* their extra-PTA rivals (Krueger 1993; Krishna and Krueger 1995). As such, RoO are akin to a tariff on the intermediate product levied by the importing country (Falvey and Reed 2000; Lloyd 2001), and can be used by one PTA member to secure its PTA partners' input markets for the exports of its own intermediate products (Krueger 1993; Krishna and Krueger 1995). 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).

⁶ The exceptions are WTO (2002a), Estevadeordal and Suominen (2003), and Suominen (2004) produced in tandem with this chapter.

Mapping and measuring Rules of Origin around the world

global mapping of the existing RoO regimes, and put forth an analytical coding scheme for the types of product-specific and regime-wide RoO employed in these regimes. The most immediate contribution of this chapter is to advance the understanding of the RoO regimes around the world. Except for Suominen (2004) produced in tandem with this chapter, there are no comparable mappings; the contribution here is the first of its kind.⁷ The analytical tools developed here are already employed in empirical work, both in our efforts to capture the global trade effects of RoO,⁸ and in chapter [Estevadeordal, Antoni, José Ernesto López-Córdova and Kati Suominen 2005. *The Impact of NAFTA's Market Access Provisions on the Location of Foreign Direct Investment in Mexico* Mimeo-graph.] of this book that focuses on RoO's effects on investment. This chapter also strives to inspire further work aimed at disaggregating preferential trading arrangements into their component parts—a task that is absolutely crucial for understanding the implications of regionalism for the global economic system, as well as for crafting nuanced, well-informed, and fruitful policy prescriptions concerning PTAs.

The first section of this chapter presents the different types of product-specific and general RoO used in RoO regimes. The second section examines the prevalence of the different types of RoO in a hundred integration schemes in the world. Section three puts forth a methodology for developing analytical measurements 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 as well as over time. The fourth section discusses the RoO innovations. Section five concludes.

3.2 Types of Rules of Origin in FTAs

There are two types of Rules of Origin, non-preferential and preferential RoO. Non-preferential RoO are used to distinguish foreign from domestic products in establishing anti-dumping and countervailing duties, safeguard

⁷ WTO (2002a) does provide a charting of various features of RoO regimes. However, this chapter goes well beyond the WTO's study by including a greater number of regimes, analysing in much greater detail the universe of product-specific RoO, examining a broader range of regime-wide RoO, discussing RoO innovations, and, perhaps most importantly, developing methodologies for capturing the relative restrictiveness of RoO and RoO regimes.

⁸ See Estevadeordal and Suominen (2004a) and Suominen (2004) for trade effects; see Estevadeordal (2000) and Suominen (2004, 2003) for the political economy of restrictiveness of RoO.

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.⁹ The wholly obtained or produced-category applies only to one PTA member, and asks whether the commodities and related products have been entirely grown, harvested, or extracted from the soil in the territory of that member, or manufactured there from any of these products. The rule of origin is met through not using any second-country components or materials. Most countries apply this strict and precise definition.

The substantial-transformation criterion is more complex, involving four main components that can be used as standalone 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).¹⁰

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

⁹ 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.

¹⁰ 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).

Mapping and measuring Rules of Origin around the world

System), heading (4 digits), subheading (6 digits) or item (8–10 digits) in the exporting PTA member.

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

The third criterion is value content (VC), which requires the product to acquire a certain minimum local value in the exporting country. 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 fourth 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 of certain input(s) and/or the realization of certain process(es) in the production of the good.¹¹ 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 standalone or in tandem with other RoO criteria. Also frequently used are the import content (usually ranging from 30 to 60 per cent), 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 in the degree of *de minimis*, the roll-up principle, and the type of cumulation.

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

¹¹ TECH can be highly discretionary given that lack of classification tools to objectively guarantee sufficient transformation in the production of the good.

Mapping and measuring Rules of Origin around the world

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

Thirdly, 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 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 the final country of manufacture. As such, diagonal and full cumulation can notably expand the geographical and product coverage of a RoO regime.¹² Table 3.2 illustrates the frequency of general RoO provisions around the world.

Whereas *de minimis*, roll-up, and cumulation allow for leniency in the application of RoO, there are three provisions that may have the opposite effect and increase the stringency of RoO.¹³

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

Secondly, many PTAs prohibit duty drawback—preclude the refunding of tariffs on non-originating inputs that are subsequently included in a

¹² 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.

¹³ 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.

Mapping and measuring Rules of Origin around the world

final product that is exported to a PTA partner. Many developing countries employ drawback in order to attract investment and to encourage exports; however, drawback in the context of a PTA is viewed as providing a cost advantage to the PTA-based producers who gear their final goods to export over producers selling their final goods in the domestic market.¹⁴ The end of duty drawback entails an increase in the cost of non-originating components for PTA-based final-goods producers. As such, the end of drawback in the presence of cumulation may encourage intra-PTA producers to shift to suppliers in the cumulation area (WTO 2002a).

Thirdly, 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.

3.3 Rules of Origin around the world

This section turns to examining the great variety of combinations of product-specific and regime-wide RoO used in selected PTAs in Europe, the Americas, Asia-Pacific, Africa, and the Middle East, as well as in PTAs between these regions. We subsequently discuss the structure of non-preferential RoO. The latter part of this section presents an analytical, comparative assessment of (1) the relative restrictiveness of the product-specific RoO governing different economic sectors in the different RoO regimes; and (2) the degree of flexibility instilled in the various RoO regimes by the regime-wide RoO.

A. Comparing the structure of RoO regimes in five regions

i. Europe: expansion of the PANEURO system

The RoO regimes employed across the EU's FTAs are highly uniform *vis-à-vis* each other. This is due largely to the European Commission's recent

¹⁴ Cadot *et al.* (2001) show that duty drawback may have a protectionist bias due to reducing the interest of producers to lobby against protection of intermediate products.

Mapping and measuring Rules of Origin around the world

drive to harmonize the EU's existing and future preferential RoO regimes in order to facilitate the operations of EU exporters dealing on multiple trade fronts, and to pave the way for particularly the EU's East European FTA partners to draw greater benefits from the EU-provided preferential treatment via diagonal cumulation—that was previously precluded by the lack of compatibility among the EU's RoO regimes. The harmonization efforts pertained to product-specific and regime-wide RoO alike. They extended to 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 FTAs forged in the early 1990s in the context of the Europe Agreements with Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Romania.¹⁵ The work culminated in 1997 in the launch of the Pan-European (PANEURO) system, which established identical RoO protocols and product-specific RoO across the EU's existing FTAs, thereby providing for diagonal cumulation among the participating countries. The Commission's regulation 46 of January 1999 reiterates the harmonized protocols, outlining the so-called single-list RoO. Overall, the PANEURO RoO are highly complex, combining CTC mainly at the heading level with exceptions, VC, and TECH, and varying markedly across products.¹⁶

Since 1997, the PANEURO model has become incorporated in the EU's newer FTAs, including the Euro-Mediterranean Association Agreements, the Stabilization and Association Agreements with Croatia and the Former Yugoslav Republic of Macedonia, the EU-Slovenia FTA, as well as the extra-regional FTAs with South Africa, Mexico, and Chile. Also, the RoO of the EU's generalized system of preferences (GSP) and the 2000 Cotonou Agreement with the African Caribbean, and Pacific (ACP) developing countries approximate the single-list, PANEURO model. EFTA's recently concluded FTAs with Mexico and Singapore follow the PANEURO model, albeit providing an additional alternative rule in selected sectors—such as plastics, rubber, textiles, iron and steel products, and some machinery product.

¹⁵ See Driessen and Graafsma (1999) for a review.

¹⁶ The harmonized RoO do not represent a dramatic break with those of the pre-1997 era. For example, the RoO in nearly 75 per cent 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 FTA formed in 1973 are strikingly similar to those used today. One notable difference between the older and the newer protocols is that the latter allow for an optional way of meeting the RoO for about 25 per cent 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 standalone import-content criterion.

Mapping and measuring Rules of Origin around the world

Importantly, the EU's eastward enlargement 1 May 2004 terminated the FTAs forged among the 10 new member states and also between them and the EU. The new members became incorporated in the EU customs union; as such, they set out to apply the EU's CET, with their overall external tariffs dropping from nine to four per cent, and also assumed the rights and obligations of the FTAs that the EU has in place with non-member countries.

ii. The Americas: four RoO families

There is much more variation across RoO regimes in the Americas. Nevertheless, distinct RoO families can be identified (Garay and Cornejo 2002). One extreme is populated by the traditional trade agreements such as the Latin American Integration Agreement (LAIA), which uses a general rule applicable across the board for all tariff items (a change in tariff classification at the heading level or, alternatively, a regional value added of at least 50 per cent of the FOB export value of the final good). The LAIA model is the point of reference for RoO used in the Andean Community (CAN) and Caribbean Community (CARICOM). At the other extreme lie the so-called new-generation PTAs such as NAFTA, which is used as a reference point for the US–Chile, US–Central America, Mexico–Costa Rica, Mexico–Chile, Mexico–Bolivia, Mexico–Nicaragua, Mexico–Northern Triangle (El Salvador, Guatemala, and Honduras), Chile–Canada, and Mexico–Colombia–Venezuela (or G-3) FTAs. The 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 NAFTA model, particularly the versions employed in the US–Chile FTA and CAFTA, is also widely viewed as the likeliest blueprint for the RoO of the Free Trade Area of the Americas (FTAA).

Mercosur RoO, as well as RoO in the Mercosur–Bolivia and Mercosur–Chile FTAs fall between the LAIA–NAFTA extremes. They are mainly based on change of heading and different combinations of regional value content and technical requirements. The Central American Common Market's (CACM) RoO regime can be seen as being located between those of the 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. The recently concluded CAFTA will, once ratified, coexist with the CACM's market access mechanisms under the so-called multilateralism principle, which allows

Mapping and measuring Rules of Origin around the world

Central American producers to choose between the CACM and CAFTA market access regimes when exporting to the other Isthmus markets.

Notably, unlike the EU's extra-European FTAs that follow the PANEURO system, US bilateral FTAs with extra-Hemispheric partners—Jordan and Israel—diverge markedly from the NAFTA model, operating on VC alone. However, the RoO of the US–Singapore FTA are again more complex, resembling the NAFTA RoO. Similarly, the RoO of the recently forged Chile–South Korea FTA also feature a high degree of sectoral selectivity à la NAFTA, and, indeed, the US–Chile FTA. Nonetheless, the RoO of the Chile–Korea regime are overall less complex than either NAFTA or US–Chile RoO, and also more reliant on the change in heading criterion than NAFTA, which has an important change in chapter component, and US–Chile FTA, which features an important change in subheading component.

iii. Africa, Asia, Middle East: toward sectoral selectivity?

The relative complexity of RoO in Europe and the Americas stands in contrast to the generality of RoO in many Asian, African, and Middle Eastern PTAs. Some of the main integration schemes in these regions—the ASEAN Free Trade Area (AFTA), Australia–New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), Singapore–Australia Free Trade Agreement (SAFTA), and South Pacific Regional Trade and Economic Cooperation (SPARTECA) in Asia–Pacific; the Economic Community of West African States (ECOWAS), Common Market for Eastern and Southern Africa (COMESA), and Namibia–Zimbabwe FTA in Africa; and the Gulf Cooperation Council (GCC) in the Middle East—are based on an across-the-board VC rule that, when defined as RVC, ranges from 25 per cent (in Namibia–Zimbabwe FTA) to 50 per cent (ANZCERTA). 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 per cent, change in subheading.

However, the more recent RoO regimes in both Africa and Asia-Pacific carry RoO of high degrees of sectoral selectivity. The Southern African Development Community (SADC) RoO approximate 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. On the Asian front, the RoO of the Japan-Singapore Economic Partnership Agreement (JSEPA) are also complex, as evinced by the more than

Mapping and measuring Rules of Origin around the world

200-page RoO protocol. However, much like in the Chile-Korea FTA, nearly half of JSEPA 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.

The intercontinental RoO regimes of the US-Singapore and Chile-Korea FTAs have delivered additional complexity to the Asia-Pacific RoO theater. RoO in these agreements tend to follow the NAFTA model yet be notably less complex overall, featuring a strong change of heading component. The future Mexico-Singapore, Canada-Singapore, Mexico-Korea, Mexico-Japan, and US-Australia FTAs, among others, will likely compound this trend. Meanwhile, further European overtures to the Asian front will likely bring the PANEURO model to accompany the NAFTA model in the region.

B. 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). The harmonization work, propelled precisely by growing concerns about the divergent national RoO's effects on unfettered 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. The Technical Committee's work was concluded in 1999, with about 500 pending issues that could not be solved at the technical level being sent to the CRO in Geneva. As of July 2003, the process at the WTO had yet to reach a solution to 94 core policy issues; these affect an estimated fifth of the tariff subheadings of the entire tariff universe. The General Council at the time extended the deadline for completion of the issues to July 2004, and agreed that following resolution of these core policy issues, the CRO would complete its remaining work by the end of 2004. 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 several issues are still contested at the WTO, the final degree of complexity and restrictiveness of the non-preferential RoO remains to be gauged.

C. Depicting product-specific RoO around the world

Figure 3.1 focuses on the first RoO component, the CTC criterion, in the RoO regimes of 28 PTAs around the world. These are three of the EU's PTAs (PANEURO—where the RoO are basically fully identical to those of the EU–South Africa FTA—and the EU–Mexico and EU–Chile FTAs); EFTA–Mexico FTA where RoO approximate the EU–Mexico RoO model; seven FTAs drawing on the NAFTA RoO model that is gaining prominence in the Western Hemisphere (NAFTA, US–Chile, US–Central America, Group of Three, and Mexico–Costa Rica, Mexico–Bolivia, and Canada–Chile FTAs); CACM–Chile FTA; Mercosur–Chile and Mercosur–Bolivia FTAs; LAIA; seven PTAs in Asia–Pacific (ANZCERTA, SAFTA, SPARTECA, AFTA, Bangkok Agreement, JSEPA, and Chile–Korea FTA); four PTAs in Africa (ECOWAS, COMESA, Namibia–Zimbabwe FTA, and SADC); the Gulf Cooperation Council in the Middle East; and US extrahemispheric FTAs with Jordan and Israel. The two final sets of bars depict two potential outcomes of the harmonization process of the non-preferential RoO (as set to their 'lowest' and 'highest' levels of stringency, which will be discussed in the next section).¹⁷

The change-of-heading criterion dominates EU RoO, whereas the RoO built upon the NAFTA RoO regime are based on change of heading and change of chapter criteria at relatively even quantities. The US–Chile FTA 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 FTA diverges from the NAFTA model due to its marked change in heading-component, as do the Japan–Singapore and Chile–Korea FTAs. The other Asian PTAs considered here stand out for their generality—for using an across-the-board value-content requirement exclusively. Except for the SADC, African RoO regimes are also marked by general, across-the-board CTC RoO, as are LAIA and Mercosur's FTAs with Chile and Bolivia that employ the change-of-heading criteria across the RoO universe. In contrast to the PANEURO and NAFTA models, non-preferential RoO feature also a prominent change-of-subheading component.

¹⁷ The figure is based on the first RoO only when two or more possible RoO are provided for a tariff subheading.

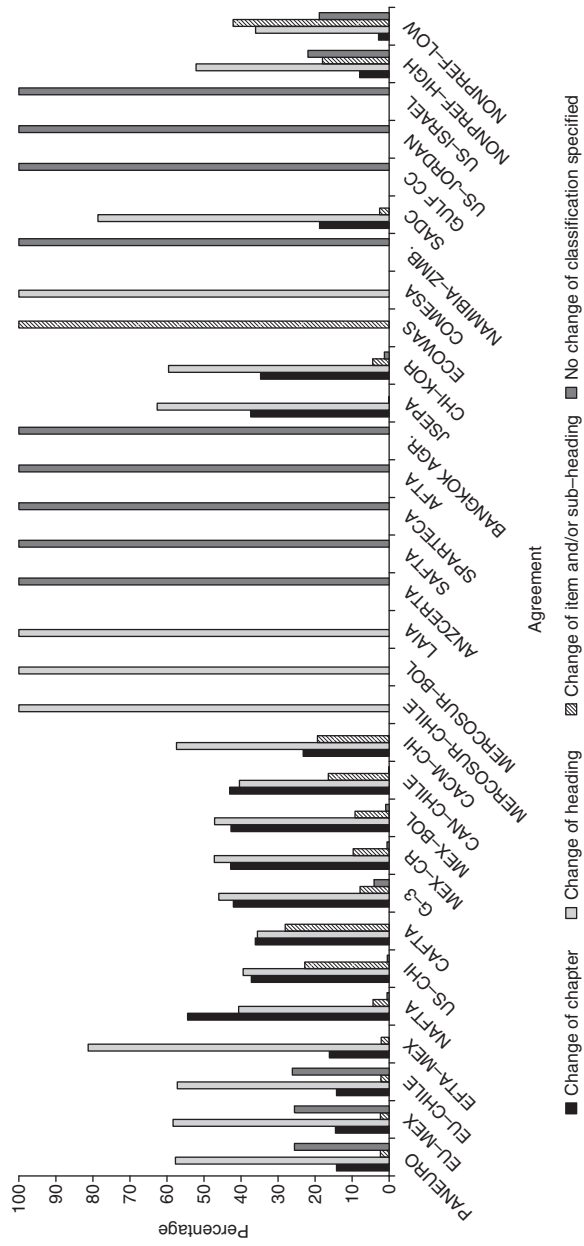


Fig. 3.1 Distribution of CTC criteria by agreement
 Source: Authors' calculations on the basis of PTA texts.

Mapping and measuring Rules of Origin around the world

Another notable difference between the various PTAs is that some, such as ANZCERTA, employ the VC criterion across sectors, completely foregoing the use of the CTC-criterion. The EU does this in about a quarter of its RoO; the bulk (more than 80 per cent) 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 per cent to non-originating components of the ex-works price of the final product. The standalone import content RoO are used particularly frequently for optics, transportation equipment, and machinery and electrical equipment. Another idiosyncrasy of the EU RoO, yet one that escapes the figure here, is the use of the so-called ‘soft RoO’ in more than a quarter of the RoO requiring a change of heading and about a sixth of the RoO requiring a change of chapter. Soft RoO allows the use of inputs from the same heading (or chapter) up to a certain share of the price of the final product even when the RoO requires a change of heading (or change of chapter). The share is generally between 5 and 20 per cent.

Table 3.1 centers on 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, in particular, on the level of the VC criterion. The most usual level of VC is 40–50 per cent, whether defined as MC or RVC. However, in the US–Chile FTA, CAFTA, and Chile–CACM FTA, RVC is generally set at lower levels of 30–35 per cent; 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 per cent. The table also displays the various bases for calculation of the VC. Differences in the method of calculation can have crucial implications to the exporters’ capacity to meet the RoO. The PE model that is separated here for analytical purposes essentially involves the same product-specific RoO as PANEURO, while diverging somewhat from the PANEURO in the regime-wide RoO. It applies to a handful of European FTAs, particularly to those forged by the EU and East European countries with Israel (WTO 2002a).

Capturing the full scale of variation in the RoO regimes requires a look at the various combinations of RoO components. Table 3.2 displays the RoO combinations in selected FTAs around the world. It considers the entire tariff universe in each RoO regime, and shows the percentage shares of all possible RoO types and combinations thereof in each respective regime. Particularly notable is the high degree of selectivity of PANEURO, NAFTA, and non-preferential RoO.

Mapping and measuring Rules of Origin around the world

Table 3.1 VC criteria by agreement

PTA	Value-content criterion (%)		Basis for calculation
	MC	RVC	
PANEURO	50–30		Ex-works price ⁱ
PE	50–30		Ex-works price
EU–South Africa	50–30		Ex-works price
EU–Mexico	50–30		Ex-works price
EU–Chile	50–30		Ex-works price
EFTA–Mexico	50–30		Ex-works price
NAFTA		50–60	50 net cost; 60 transaction value ⁱⁱ
US–Chile		35–45	35 build-up; 45 build-down ⁱⁱⁱ
CAFTA		35–45	35 build-up; 45 build-down
Canada–Chile		50–60	50 net cost; 60 transaction value
G–3		50–55 ^{iv}	Transaction value
Mexico–Costa Rica		41.66–50	41.66 net cost; 50 transaction value
Mexico–Bolivia		41.66–50	41.66 net cost; 50 transaction value
Mexico–Chile		40–50	40 net cost; 50 transaction value
CACM		N/A	Transaction value
CACM–Chile		30	Transaction value
Mercosur	40	60	Fob export value ^v
Mercosur–Chile	40		Fob export value ^{vi}
Mercosur–Bolivia	40		Fob export value
Andean Community	50 ^{vii}		Fob export value
Caricom–Dom. Rep.		N/A	Transaction value
LAIA	50		Fob export value
ANZCERTA		50	Factory cost ^{viii}
SAFTA		30–50	Factory cost
SPARTECA		50	Factory cost
AFTA		40	Value of content
Bangkok Agreement		40	Ex-works ^{ix}
Japan–Singapore	40	60	Export value ^x
US–Singapore		30–65	30–35 build-up; 45–65 build-down
Chile–Korea		30–45	30 build-up; 45 build-down
COMESA	60	35	60 value of materials; 35 ex-factory cost ^{xi}
ECOWAS		30	Factory cost
Namibia–Zimbabwe		25	N/A
SADC	70–35		Ex-works price
Gulf Coop. Council		40 ^{xii}	Ex-works price
US–Jordan		35	Value of materials/processes ^{xiii}
US–Israel		35	Value of materials/processes
Mexico–Israel		35–45	35 net cost; 45 transaction value
Non-preferential RoO	60–40		Ex-works price

Source: Authors' classification based on PTA texts.

D. Regime-wide RoO

Besides sectoral RoO, the different RoO regimes can be compared by their regime-wide RoO. Table 3.3 contrasts the various RoO regimes by their general, regime-wide RoO—*de minimis*, roll-up, cumulation, and drawback.

Mapping and measuring Rules of Origin around the world

First, EU RoO regimes feature a higher *de minimis* (at 10 per cent) than NAFTA and many other FTAs in the Americas; the exceptions are US–Chile FTA and CAFTA, where *de minimis* is the same as in PANEURO. Meanwhile, there is no *de minimis* rule in Mercosur’s FTAs and various FTAs in Asia and Africa. However, the principle does have exceptions in most regimes: for example, EU’s *de minimis* does not apply to textiles and apparel, except for allowing an 8 per cent *de minimis* of the total weight of textile materials in mixed textiles products. In the EU–South Africa FTA, *de minimis* is set at 15 per cent but excludes fish and crustaceans, tobacco products, as well as certain meat products and alcoholic beverages. NAFTA *de minimis* does not extend to the production of dairy produce; edible products of animal origin; citrus fruit and juice; instant coffee; cocoa products, and some machinery and mechanical appliances, such as air conditioners and refrigerators (Reyna 1995: 115–117).

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

Thirdly, the EU’s Pan–European system of cumulation applied since 1997 draws a clear distinction between the EU RoO regimes on the one hand, and most RoO regimes elsewhere in the world, on the other. The foremost diagonal cumulation regime in the world, the Pan–European system incorporated 16 partners and covered no fewer than 50 FTAs prior to the EU’s eastward enlargement.¹⁸ 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. The European Economic Association (EEA) agreement between EU and EFTA permits full cumulation. The EU–South Africa FTA allows both parties to cumulate diagonally with the ACP states. In addition, it incorporates the

¹⁸ The participants in the PANEURO system of cumulation prior to the eastward enlargement were the EU, Bulgaria, Czech Republic, Estonia, Hungary, Iceland, Latvia, Liechtenstein, Lithuania, Norway, Poland, Romania, Slovak Republic, Slovenia, Switzerland, and Turkey. Eight of these countries—Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia—entered the EU in May 2004.

Table 3.2 Distribution of RoO combinations, selected PTAs (1st RoO only)

Requirement	EUROPE				AMERICAS									
	PANEURO	EU-MEX	EU-CHI	EU PRE-97	EFTA-MEX	NAFTA	US-CHI	G3	MEX-CR	MEX-BOL	CAN-CHI	CACM-CHI	MERC-CHI	LAIA
NC	0.39	0.39	0.39	0.20		0.54	0.51	4.05	0.55	0.95	0.04			
NC + ECTC	2.39	2.04	2.39	2.36										
NC + TECH	1.39	1.39	1.39	0.72			0.02							
NC + ECTC + TECH														
NC + VC	11.46	10.91	11.90	11.08					0.02					
NC + ECTC + VC	1.57	1.57	1.57	1.61										
NC + VC + TECH	0.08	0.20	0.20											
NC + WHOLLY OBTAINED CHAPTER	7.62	7.62	7.62	3.24										
NC + WHOLLY OBTAINED HEADING	0.70	0.70	0.70	0.70										
SUBTOTAL	25.60	24.82	26.16	19.91	0.00	0.54	0.53	4.05	0.54	0.95	0.04	0.00	0.00	0.0
CI											0.99			
CI + ECTC						0.02				0.04	0.23			
CI + TECH					2.17						0.02			
CI + ECTC + TECH														
CI + VC														
CI + ECTC + VC						0.02								
CI + VC + TECH														
SUBTOTAL	0.00	0.00	0.00	0.00	2.17	0.04	0.00	0.00	0.04	0.00	1.24	0.00	0.00	0.0
CS	0.20	0.20	0.20	0.12		1.29	16.56	1.54	2.99	2.94	10.52	19.16		
CS + ECTC						2.52	5.57	0.73	2.14	1.32	4.13	0.20		
CS + TECH	1.90	1.90	1.78	1.89		0.04	0.14	0.10		0.02	0.11			
CS + ECTC + TECH						0.40	0.04	0.04	0.23	0.43	0.26			
CS + VC	0.27	0.27	0.27	0.37			0.42	4.60	4.25	4.24	0.06	0.03		
CS + ECTC + VC						0.10	0.04				0.10			
CS + VC + TECH								0.04		0.26				
CS + ECTC + VC + TECH								0.83						
SUBTOTAL	2.37	2.37	2.25	2.38	0.00	4.35	22.77	7.88	9.66	9.21	15.18	19.39	0.00	0.0
CH	32.99	32.99	32.86	38.00	58.79	17.09	23.70	16.45	24.32	17.00	17.42	57.15	46.00	100.0
CH + ECTC	4.60	5.13	4.56	4.10	7.22	19.18	11.19	13.45	19.66	14.27	18.72	0.26		
CH + TECH				0.86		0.02	0.34	0.97		0.22	0.17		20.04	
CH + ECTC + TECH	6.66	6.66	6.66	6.66	9.04	0.14	0.44	0.26		1.74	0.09			
CH + VC	13.01	12.68	12.78	13.56	6.1	3.54	3.25	2.01	2.67	2.17	3.52		9.99	
CH + ECTC + VC	0.37	0.86	0.37	0.42	0.08	0.58	0.48		0.52	0.85	0.52			
CH + VC + TECH						0.10		0.06	0.02	10.01			23.97	
CH + ECTC + VC + TECH	0.02	0.02	0.02	0.02	0.03			4.82		0.89				
SUBTOTAL	57.65	58.34	57.25	63.62	81.26	40.65	39.40	46.02	47.19	47.15	40.44	57.41	100.00	100.0
CC	2.16	2.16	2.16	2.28		30.95	23.18	21.09	31.05	21.80	29.20	22.94		
CC + ECTC	1.02	1.02	1.02	0.74	0.7	17.71	5.83	5.90	5.65	5.67	8.08	0.26		
CC + TECH	0.04	0.04	0.04	0.04	0.05	0.02	0.06	5.43		6.30	0.04			
CC + ECTC + TECH	11.02	11.25	11.02	11.02	15.41	5.76	8.08	6.65	5.81	6.24	5.74			
CC + VC							0.06	0.14	0.26	0.43				
CC + ECTC + VC														
CC + VC + TECH								2.67		1.24				
CC + ECTC + VC + TECH								0.20						
SUBTOTAL	14.24	14.47	14.24	14.08	16.16	54.44	37.21	42.08	42.77	42.68	43.06	23.20	0.00	0.0
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Notes: NC = No change in tariff classification required; CI = Change in tariff item; CS = Change in tariff subheading; CH = Change in tariff heading; CC = Change in tariff chapter; ECTC = Exception to change in tariff classification; VC = Value content; TECH = Technical requirement. Calculations at 6-digit level of the Harmonized System.
 Source: Author's calculations on the basis of PTA texts.

ASIA/PACIFIC					AFRICA					MIDDLE EAST				NON-PREF	
ANZCERTA	SAFTA	SPARTECA	AFTA	BANGKOK	JSEPA	CHI-KOR	ECOWAS	COMESA	NAM-ZIMB	SADC	GULF CC	US-JORDAN	US-ISRAEL	HIGHEST	LOWEST
						0.51									
														0.72	9.62
100	100	100	100	100		0.78			100		100	83.94	100	11.48	0.06
														0.34	0.5
												10.06		9.39	3.7
						0.42									
100.00	100.00	100.00	100.00	100.00	0.42	1.29	0.00	0.00	100.00	0.00	100.00	100.00	100.00	21.93	18.88
														3.54	6.18
														0.12	0.12
										1.39				0.03	3.09
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.00	0.00	0.00	3.84	9.39
						1.68	100			1.16				13.53	30.42
					0.05	0.47								0.64	0.92
															1.41
						2.11									
						0.16									
0.00	0.00	0.00	0.00	0.00	0.05	4.42	100.00	0.00	0.00	1.16	0.00	0.00	0.00	14.17	32.75
					45.81	46.87		100		58.65				40.13	33.88
					14.46	9.12				3.35				11.64	2.22
					0.58	0.17								0.36	
										6.52					
					1.66	2.95				0.13					
					0.10	0.49									
										0.03					
0.00	0.00	0.00	0.00	0.00	62.61	59.57	0.00	100.00	0.00	78.65	0.00	0.00	0.00	52.13	36.10
						22.49				0.68				7.86	2.78
					37.35	4.71								0.1	0.1
						0.08									
						5.67				18.09					
						1.80									
0.00	0.00	0.00	0.00	0.00	37.35	34.75	0.00	0.00	0.00	18.77	0.00	0.00	0.00	7.96	2.81
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 3.3 Regime-wide RoO in selected PTAs

PTA	De minimis (percentage)	Roll-up	Cumulation		Drawback allowed? ^{vi}
			Bilateral	Diagonal	
PAN-EURO (50)	10	Yes	Yes	Yes (full in EEA)	No
PE (15)	10	Yes	Yes	Yes	No ^{xiv}
EU–South Africa	1.5	Yes	Yes	Yes with ACP (full with SACU)	Not mentioned
EU–Mexico	10	Yes	Yes	No ^{xv}	No after 2 years
EU–Chile	10	Yes	Yes	No	No after 4 years
EFTA–Mexico	10 (not chs. 50–63)	Yes	Yes	No	No after 3 years
NAFTA	7 (exceptions in agric. and ind. products; 7% of weight in chs. 50–63)	Yes except automotive	Yes	No	No after 7 years
US–Chile	10 (except. in agric. And processed agr. products)	Yes	Yes	No	No after 12 years
CAFTA	10 (exceptions in agric. and ind. products; 7% of weight in chs. 50–63)	Yes	Yes	Yes (in ch 62 w/Mexico & Canada)	Not mentioned
G3	7 (7% of weight in chs. 50–63)	Yes	Yes	No	Not mentioned
Mexico–Costa Rica	7 (except. in chs. 4–15 and headings 0901, 1701, 2105, 2202)	Yes	Yes	No	No after 7 years
Mexico–Chile	8 (except. in agric. and ind. products; 9% of weight in chs. 50–63)	Yes	Yes	No	Not mentioned
Mexico–Bolivia	7 (not chs. 1–27 unless CS; not chs. 50–63)	Yes	Yes	No	No after 8 years
Canada–Chile	9 (except. in agric. and ind. products; 9% of weight in chs. 50–63)	Yes	Yes	No	Not mentioned
CACM–Chile	8 (not chs. 1–27 unless CS)	Yes	Yes	No	Not mentioned
CACM	10 until 2000; 7 from 2001 on (7% of weight in chs. 50–63)	N/A	Yes	No	Yes

Mercosur	Not mentioned	Yes except automotive	Yes	No	Yes (except automotive imports from Arg. and Braz.)
Mercosur–Chile	Not mentioned	Yes	Yes	No	Not after 5 years
Mercosur–Bolivia	Not mentioned	Yes	Yes	No	No after 5 years
Caricom	Not mentioned	Not mentioned	Yes	No	Possibly ^{xvi}
Caricom–DR	7	Not mentioned	Yes	No	Not mentioned
ANZCERTA	2	Yes	Yes	Yes (full)	Yes
SAFTA	2	Yes	Yes ^{xvii}	No	Not mentioned
SPARTECA	2	Yes	Yes	Yes (full)	Yes
AFTA	Not mentioned	Not mentioned	Yes	No	Yes
Bangkok Agreement	Not mentioned	Yes	Yes ^{xviii}	No	Possibly ^{xix}
Japan–Singapore	To be determined	Yes	Yes	No (OP allowed)	Not mentioned
US–Singapore	10 (except. in various agric. products; 7% of weight in chs. 50–63)	Yes	Yes	No (OP & ISI allowed)	Not mentioned
Chile–Korea	8 (not chs. 1–24 unless CS; 8% of weight in chs. 50–63) 2 ^{xx}	Yes	Yes	No	Not mentioned
COMESA	Not mentioned	Yes	Yes	No	Not after 10 years
ECOWAS	10 (not chs. 50–63, 87, 98)	Not mentioned	Yes	No	Not mentioned
SADC	10 (not chs. 50–63, 87, 98)	Yes	Yes	No	Not mentioned
Gulf CC	Not mentioned	Not mentioned	Yes	No	Not mentioned
US–Jordan	Not mentioned	Not mentioned	Yes	No	Not mentioned
US–Israel	Not mentioned	Yes	Yes	No	Yes
Canada–Israel	10 (except. in agric. and industrial products; 7% of weight in chs. 50–63)	Yes	Yes	Yes (w/ a 3rd party with which both have FTA) ^{xxi}	Not mentioned
Mexico–Israel	10 (except. in agric. and industrial products; 7% of weight in chs. 50–63)	Yes	Yes	No	Not mentioned

Source: Authors' classification on the basis of PTA texts.

Mapping and measuring Rules of Origin around the world

'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).

Other cumulation schemes include the ANZCERTA model, which provides for full cumulation, and the Canada–Israel FTA, which permits cumulation with the two countries' common FTA partners, such as the United States. Singapore's FTAs incorporate the outward processing (OP) concept tailored to accommodate Singapore's unique economic features and its access to low-cost processing in neighboring countries. The US–Singapore FTA also incorporates the integrated sourcing initiative (ISI), which provides further flexibility to outsourcing. OP and ISI will be detailed in Section 3.4. CAFTA stands out in the Americas for providing for diagonal cumulation with Canada and Mexico. However, the clause covers only materials used for producing goods in chapter 62, and so only up to a limited amount of imports to the US market and only after Canada and Mexico agree on the CAFTA cumulation clause.

Fourthly, EU's FTAs and FTAs in the Americas tend to explicitly preclude drawback. Nonetheless, both have allowed for phase-out periods during which drawback is permitted. For instance, the EU–Mexico FTA permitted drawback for the first two years, while the EU–Chile FTA allows drawback through 2007, the fourth year of the FTA. NAFTA allowed for drawback for the first seven years; however, drawback in the bilateral trade between Canada and the United States under the agreement was valid for only two years. Importantly, NAFTA does provide leniency in the application of the no-drawback rule by putting in place a refund system, whereby the producer will be refunded the lesser of the amount of duties paid on imported goods and the amount of duties paid on the exports of the good (or another product manufactured from that good) upon its introduction to another NAFTA member. AFTA, ANZCERTA, SPARTECA, the US–Israel FTA, CACM, and Mercosur's FTAs stand out for not prohibiting drawback. However, in Mercosur *per se*, there is a no-drawback rule governing Argentine and Brazilian imports of intermediate automotive products when the final product is exported to a Mercosur partner; this should help place Paraguay and Uruguay at a par with the two larger economies in attracting investment in the automotive sector.

E. Administration of RoO

The various RoO regimes diverge in their administrative requirements, particularly in the method of certification (Table 3.4).

Mapping and measuring Rules of Origin around the world

Table 3.4 Certification methods in selected PTAs

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

Source: Authors' classification on the basis of PTA texts.

The EU RoO regimes require the use of a movement certificate, EUR.1, that is to be issued in two steps—by the exporting-country government once application has been made by the exporter or the exporter's competent agency, such as a sectoral umbrella organization. However, the EU regimes provide for an alternative certification method, the invoice declaration, for 'approved exporters' who make frequent shipments and are authorized by the customs authorities of the exporting country to make invoice declarations.

Meanwhile, NAFTA and a number of other FTAs in the Americas as well as the Chile–Korea FTA rely on self-certification, which entails that the exporter's signing the certificate suffices as an affirmation that the items

Mapping and measuring Rules of Origin around the world

covered by it qualify as originating. In CAFTA, the importer rather than the exporter claiming preferential tariff treatment is the party ultimately responsible for seeing that the good is originating.¹⁹ In Mercosur, Andean Community, Caricom, AFTA, ANZCERTA, SAFTA, the Bangkok Agreement, JSEPA, and ECOWAS require certification by a public body or a private umbrella entity approved as a certifying agency by the government. However, unlike in the two-step model, the exporter is not required to take the first cut at filling out the movement certificate, but, rather, to furnish the certifying agency with a legal declaration of the origin of the product.²⁰

The self-certification model can be seen as placing a burden of proof on the importing-country producers; as such, it arguably minimizes the role of the government in the certifying process, entailing rather low administrative costs to exporters and governments alike. In contrast, the two-step system requires heavier involvement by the exporting-country government and increases the steps—and likely also the costs—that an exporter is to bear when seeking certification.

3.4 Analytical coding methodology for RoO Rules of Origin in FTAs

This section presents a methodology for measuring (1) the relative restrictiveness of the product-specific RoO governing different economic sectors in the different agreements; and (2) the degree of flexibility instilled in the various RoO regimes by the various regime-wide RoO, such

¹⁹ The CAFTA certification of origin can be prepared by the importer, exporter, or the producer of the good; alternatively, the importer can claim origin through his/her 'knowledge that the good is an originating good'. Verification of origin can be made via written requests or questionnaires to the importer, exporter, or producer, or by visits by an importing-country authority to the exporting-party territory. Similarly, in the US-Chile FTA, the importer is to declare the good as originating and can also certify origin; however, verification can be made by the customs of the importing member 'in accordance with its customs laws and regulations.' In contrast, in NAFTA, the exporter or producer are parties in charge of certifying origin, and verification of origin is conducted through written requests or visits by one NAFTA member to the premises of an exporter or a producer in the territory of another member.

²⁰ The certificate in NAFTA, G3, and CACM-Chile FTA will be valid for a single shipment or multiple shipments for a period of a year; in ANZCERTA and SAFTA, the certificate will be valid for multiple shipments for two years. In ECOWAS, the certificate is not required for agricultural, livestock products and handmade articles produced without the use of tools directly operated by the manufacturer. In ANZCERTA, SAFTA, and Mercosur-Chile, Mercosur-Bolivia, and CARICOM-DR FTAs, the certificate needs to be accompanied by a legal declaration by the final producer or exporter of compliance with the RoO. In CAN and CARICOM, declaration by the producer is required. In CARICOM, the declaration can be completed by the exporter if it is not possible for the producer to fill it.

as *de minimis* and drawback. We subsequently compare RoO regimes by the values yielded by these two analytical measures.

A. A comparative analysis of the levels of restrictiveness of product-specific RoO

The NAFTA RoO family is based on the change of chapter rules, whereas the change of tariff heading component figures prominently in the EU and most Asian and African RoO models. As such, these regimes will entail somewhat divergent demands on exporters. However, understanding the implications of membership in the different types of regimes for an exporter operating in a particular industry requires both (1) a measure of the restrictiveness of RoO that allows for a more nuanced sectoral analysis of the requirements imposed by RoO; and (2) an indicator of the overall flexibility instilled in a RoO regime by the various regime-wide RoO. This section presents two such measures: a restrictiveness index, and a facilitation index.

i. Restrictiveness of RoO

The manifold RoO combinations within and across RoO regimes present a challenge for cross-RoO comparisons. This chapter seeks to draw such comparisons through an index grounded on the plausible restrictiveness of a given type of RoO. Estevadeordal (2000) constructs a categorical index ranging from 1 (least restrictive) to 7 (most restrictive) on the basis of NAFTA RoO. The index can be conceptualized as an indicator of how demanding a given RoO is for an exporter. The observation rule for the index is based on two assumptions: (1) change at the level of chapter is more restrictive than change at the level of heading, and change at the level of heading more restrictive than change at the level of subheading, and so on; and (2) VC and TECH attached to a given CTC add to the RoO's restrictiveness (see Appendix I for details).²¹

Figure 3.2 reports the restrictiveness of RoO as calculated at the six-digit level of disaggregation in selected FTAs. The EU RoO regimes are again strikingly alike across agreements. The RoO regimes based on the NAFTA model, such as the G-3, are also highly alike. The Mercosur model pertinent to Mercosur–Chile and Mercosur–Bolivia FTAs is more general, yet

²¹ Given that the degree of restrictiveness is a function of *ex ante* restrictiveness rather than the effective restrictiveness following the implementation of the RoO, the methodology—much like that of Garay and Cornejo (2002)—is particularly useful for endogenizing and comparing RoO regimes. The methodology allows RoO to be analysed in terms of their characteristics rather than their effects.

Mapping and measuring Rules of Origin around the world

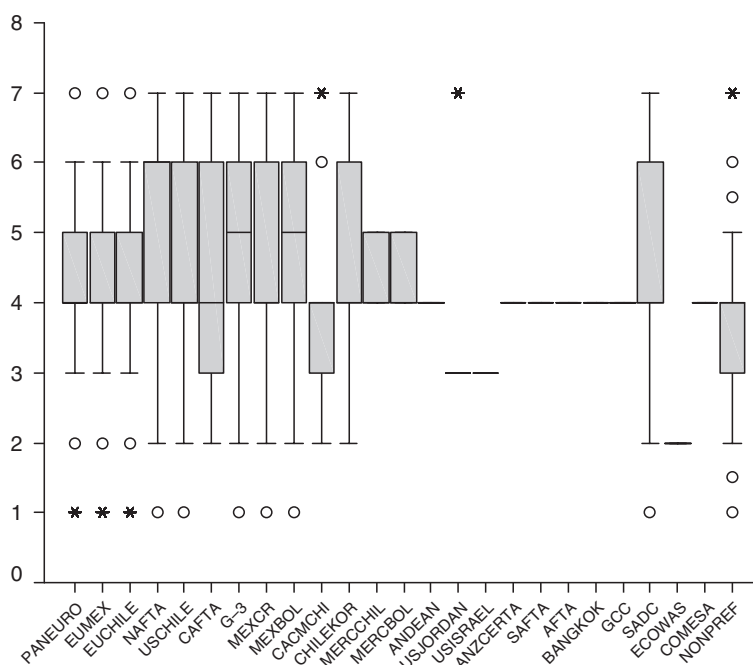


Fig. 3.2 Restrictiveness of RoO in selected PTAs.

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

Source: Authors' calculations on the basis of codes generated per methodology in Appendix I.

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 most Asian and African RoO regimes. However, some newer PTAs—such as Chile–Korea FTA and SADC—feature high levels of cross-sectoral variation in RoO.

iii. Comparing the restrictiveness of sectoral RoO

To what extent does the restrictiveness of RoO vary across economic sectors? Are some sectors more susceptible to the potential negative trade and investment effects of restrictive RoO than others?

We explore these questions by focusing on twelve RoO regimes with intersectoral variation in RoO. Table 3.5 reports the restrictiveness values in these regimes, as aggregated from 6-digit values by section of the Harmonized System. The average restrictiveness and the standard deviation values at the bottom of the table are based on calculations at the 6-digit level.

The data reveal that agricultural products and textiles and apparel are marked by a particularly high restrictiveness score in each regime, which suggests that the restrictiveness of RoO may be driven by the same political economy variables that arbitrate the level of tariffs particularly in the EU and the United States. Non-preferential RoO exhibit similar patterns across sectors, communicating the operation of political economy dynamics also at the multilateral level. 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.²²

B. Comparing regime-wide RoO: a facilitation index

Product-specific RoO in complex PTAs—PTAs not carrying across-the-board RoO—can impose highly divergent requirements to the exporters of different goods. Even an across-the-board rule will undoubtedly have more striking implications in some sectors than in others, depending on the product-specific features. However, as discussed above, RoO regimes employ several mechanisms to add flexibility to the application of the product-specific RoO. We strive to capture the combined effect of such mechanisms by developing a regime-wide ‘facilitation index’. The index is based on five components: *de minimis*, diagonal cumulation, full cumulation, drawback, and self-certification. The maximum index value of 5 results when the permitted level of *de minimis* is 5 per cent or higher and when the other four variables are permitted by the RoO regime in question.

Figure 3.3 graphs the ‘facil index’ values for PTAs. The PANEURO and NAFTA models are nearly on a par; the difference here is produced by coding NAFTA as allowing drawback, as it did for the first seven years. The EU–South Africa and the Canada–Israel are the most ‘permissive’ regimes, the former thanks to drawback and diagonal and full cumulation, and the latter because of self-certification, drawback and cumulation with the United States. Meanwhile, many regimes with an across-the-board RoO

²² See Suominen (2004) for weighted RoO.

Table 3.5 Sectoral restrictiveness of sectoral RoO in selected PTAs

HS Section	PAN- EURO	EFTA- MEX	NAFTA	US-Chile	CAFTA	CR-MEX	G-3	Chile- CACM	JSEPA	Chile- Korea	SADC	Non-pref. avg.
1. Live Animals	7.0	5.3	6.0	6.0	6.0	6.0	5.4	5.9	7.0	6.0	7.0	6.2
2. Vegetable Products	6.6	4.0	6.0	6.0	5.9	6.0	6.7	5.6	7.0	6.1	6.6	6.6
3. Fats and Oils	4.7	4.0	6.0	6.0	6.0	6.0	3.5	3.0	7.0	7.0	7.0	4.0
4. Food, Bev. & Tobacco	5.0	4.4	4.7	5.7	5.7	5.4	4.8	3.7	6.8	5.2	5.4	4.6
5. Mineral Products	3.5	3.5	6.0	3.9	4.0	5.7	5.7	5.3	6.6	5.4	4.0	4.8
6. Chemicals	3.9	3.8	5.3	2.6	2.5	3.8	3.9	2.6	3.7	4.0	4.0	2.5
7. Plastics	4.9	4.9	4.8	3.7	3.6	4.2	4.2	3.2	4.0	4.1	4.7	4.0
8. Leather Goods	3.3	3.5	5.6	5.0	4.5	5.5	5.5	3.7	4.0	4.9	3.8	3.4
9. Wood Products	2.9	2.9	4.0	4.1	4.1	4.7	4.6	3.2	4.0	4.1	4.8	3.3
10. Pulp and Paper	4.4	4.6	4.8	4.9	4.9	6.0	6.2	4.1	4.0	4.3	4.3	3.9
11. Textile and App.	6.1	6.1	6.9	5.9	5.9	5.8	5.8	4.5	6.0	5.5	6.1	3.4
12. Footwear	2.8	4.1	4.9	4.8	3.8	4.8	4.3	3.5	4.3	4.7	2.6	3.7
13. Stone and Glass	3.7	3.7	4.9	4.4	4.4	4.9	5.0	4.2	4.0	5.0	3.7	3.5
14. Jewellery	3.7	3.7	5.3	5.2	4.9	5.4	5.4	4.0	4.0	5.4	3.7	3.4
15. Base Metals	4.2	4.2	4.6	4.6	4.6	4.6	4.7	3.8	4.0	4.5	3.9	3.4
16. Mach. & Elec. Eq.	4.8	4.0	3.2	2.9	2.8	3.7	4.5	4.3	4.0	3.8	4.1	3.6
17. Transportation Eq.	4.7	4.2	4.8	4.2	3.7	4.2	3.3	3.4	4.0	4.3	3.8	3.8
18. Optics	5.0	4.4	4.0	4.5	4.1	3.8	4.8	4.0	4.0	4.3	3.9	3.5
19. Arms & Ammun.	4.0	4.0	4.7	5.5	5.5	5.5	5.9	4.0	4.0	4.8	3.1	4.0
20. Works of Art, Misc.	4.1	4.1	5.1	5.3	5.2	5.8	6.0	3.6	4.6	4.7	4.0	3.3
Average	4.5	4.2	5.1	4.8	4.3	4.8	4.9	4.0	4.9	4.9	4.5	3.9
Complexity (Stand. Dev.)	1.4	1.2	1.2	1.6	1.6	1.3	1.5	1.4	1.4	1.4	1.4	1.4

Source: Authors' calculations on the basis of codes generated per methodology in Appendix I.

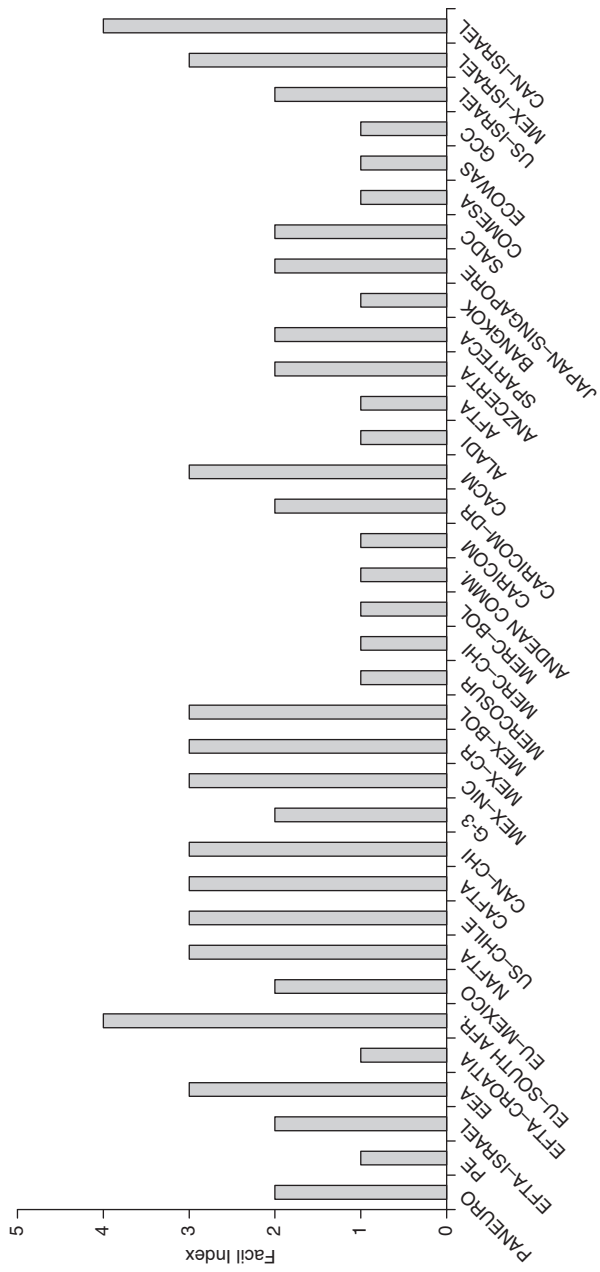


Fig. 3.3 Facilitation index for selected PTAs.
 Authors' calculations on the basis of coding scheme above.

Mapping and measuring Rules of Origin around the world

neither provide for *de minimis* nor feature many regime-wide provisions of flexibility; the most usually occurring regime-wide rule in these PTAs is drawback. Indeed, that regimes with the most stringent RoO and the highest degree of sectoral selectivity in RoO feature the highest facilitation values may evince counterlobbying by producers jeopardized by stringent product-specific RoO.

3.5 RoO 'innovations': *ad hoc* mechanisms for flexibility

This section provides a look at some further dimensions of RoO regimes that go beyond the more traditional and prevalent components included in the restrictiveness and facilitation indices in this study, but that alleviate the impact of stringent RoO: (1) a phase-in period for a stringent value content RoO; (2) permanent deviations for a country or a set of countries from the RoO regime that would otherwise apply; (3) flexibility in the ways of calculating value content; and (4) tariff preference levels (TPLs) employed when the partner lacks intermediate product industries. While most regimes employing these provisions make them applicable to all members, some regimes provide them asymmetrically, for instance to accommodate some country-specific idiosyncrasies in production structures or to provide greater leniency to a developing member country when the parties' development levels differ drastically. These provisions can be of great importance particularly to countries with limited production base and/or in the absence of relatively cheap inputs and production processes in the PTA area.

A. RoO phase-ins

Some regimes have adopted what are in many cases highly detailed product-specific provisions that allow for phasing in of the RoO. Mercosur–Chile FTA provides a seven-year adjustment period for Paraguay to start applying the FTA's import content RoO of 40 per cent in selected headings across a host of sectors such as food products, chemicals, plastics, textiles, apparel, footwear, base metals, and machinery. During the period, Paraguay applies a 60 per cent import content rule. Mercosur–Bolivia FTA allows Bolivia to export to Mercosur some selected goods at 50 per cent import content for the first five years, and others at 60 per cent for three years as opposed to the 40 per cent that will subsequently take effect. For its part, Paraguay can export to Bolivia at 60 per cent import content for the first three years.

Also, the EU's extra-European agreements with Mexico and Chile allow for some product-specific deviations from the PANEURO standard for a certain period of time.²³ In the case of the EU–Mexico FTA, these pertain to one whole chapter (knitted apparel) and to 25 headings (or subheadings) in chemicals, textiles, footwear, machinery, and vehicles, and endure from two to six years prior to converging to the benchmark RoO. In footwear, the RoO is more restrictive for the EU than in its other FTAs: the same RoO applies as in the FTAs with Chile and South Africa up to a certain quota, while the rest of the EU exports to the Mexican market are regulated by much more stringent RoO. The RoO phase-ins are fewer in the case of the EU–Chile FTA, pertaining to textiles and bicycles for the first three years of the agreement.

B. Permanent reductions in the level of RVC

A second means to add leniency to the RoO protocol are permanent deviations for a country or a set of countries from the RoO regime that would otherwise apply. The RoO of the Andean Community allows the less-developed members, Bolivia and Ecuador, to use non-originating components up to 60 per cent of the value of the final good, as opposed to the 40 per cent applicable to the other members. LAIA allows the less-developed partners to use non-originating components of up to 60 per cent of the value of the final good, as opposed to 50 per cent applying to the rest of the members. In COMESA, products of importance to economic development to the partners (selected headings in mineral products, chemicals, machinery, and optical instruments) enjoy a 25 per cent RVC, as opposed to the across-the-board 35 per cent RVC that otherwise applies.

Also, the EU–Mexico and EU–Chile FTAs allow for permanent deviations from the single list, PANEURO model. The deviations are rather minor and apply only to selected industrial products.²⁴ Nonetheless, they indicate that Mexico and Chile did achieve some favorable sectoral outcomes in the RoO bargaining.

C. Options for calculating value content

Some regimes have created innovative optional means of calculating value content. In SADC, the more-developed members may allow the less-developed members to count as originating processes that are usually left outside the value-content calculation. Regimes modelled after NAFTA

²³ For a detailed treatment, see Estevadeordal and Suominen (2003).

²⁴ See Estevadeordal and Suominen (2003).

Mapping and measuring Rules of Origin around the world

provide a number of optional ways of calculating RVC in vehicles when the producer uses pre-defined intermediate goods from chapters 40 and 84, as well as for calculating the RVC for these intermediate goods.²⁵

However, it is Singapore's FTAs that incorporate perhaps the most innovative and comprehensive mechanisms to add flexibility to the calculation of the value content. These are designed to help the many Singaporean industries that have extensive outsourcing ties especially in South-East Asia to qualify for the preferential treatment provided by its FTA partners. The two key mechanisms are outward processing (OP) and integrated sourcing initiative (ISI). OP is recognized in all of Singapore's FTAs, while ISI is incorporated in the US-Singapore FTA. The concept of OP enables Singapore to outsource part of the manufacturing process, usually the lower value-added or labor-intensive activities, to the neighboring countries, yet to count the value of Singaporean production done prior to the outsourcing activity toward local, Singaporean content when meeting the RoO required by the export market. Table 3.6 illustrates the process.

Although the OP concept applies only to products with a value-added rule, it is credited to have encouraged outsourcing of labor-intensive and low-value processes and retaining higher value-activities in Singapore.

For its part, ISI operating in the US-Singapore FTA applies to non-sensitive, globalized sectors, such as information technologies. Under the scheme, certain IT components and medical devices are not subject to RoO when shipped from either of the parties to the FTA partner. ISI is designed to reflect the economic realities of globally distributed production linkages, and to further encourage US multinationals to take advantage of outsourcing opportunities in the ASEAN countries.

D. Tariff Preference Levels

The fourth *ad hoc* mechanism to add leniency to a RoO regime is Tariff Preference Levels (TPLs). TPLs allow goods that would not otherwise

²⁵ The producer of a vehicle can calculate the RVC by averaging the calculation over the fiscal year by using any one of the following categories: (a) the same model line of vehicles in the same class of vehicles produced in the same plant in the territory of a party; (b) the same class of motor vehicles produced in the same plant in the territory of a party; and (c) the same model line of motor vehicles produced in the territory of a party. Meanwhile, the producer can calculate the RVC intermediate goods for vehicles by (a) averaging the calculation over the fiscal year of the motor vehicle producer to whom the good is sold, over any quarter or month, or over its fiscal year, if the good is sold as an aftermarket part; (b) calculating the average separately for any or all goods sold to one or more motor vehicle producers; or (c) calculating separately those goods that are exported to the territory of the other party.

Mapping and measuring Rules of Origin around the world

Table 3.6 Operation of outward processing in Singapore's FTAs

<i>Stage 1</i>	<i>Stage 2</i>	<i>Stage 3</i>
Singapore → Foreign Country → Singapore → Exported		
Conventional RoO → Stage 3 = Local Content		
Recognition of OP → Stage 1 + Stage 3 = Local Content		

satisfy the RoO protocol to qualify for the preferential treatment up to some pre-specified annual quotas. Above these levels, non-originating goods become subject to the importer's MFN tariff. Most commonly applying to textiles and apparel, TPLs are employed particularly in the NAFTA-model RoO regimes. They are generally extended by all parties to all other parties, made available by any given party on a 'first-come, first-served' basis.

NAFTA provides TPLs for such non-originating products as cotton and manmade fiber apparel, wool apparel, manmade fiber fabrics, and fiber spun yarn. Depending on the product category, they reach up to 80 million square meters equivalent (SMEs) for Canadian and 45 million SMEs for Mexican exports to the US market, and 12 million for selected US exports to Mexico. The most recent RoO regime signed by the US, CAFTA, offers TPLs for only two of the Central American countries, Costa Rican and Nicaragua, and phases them out quickly. In the case of Costa Rica, TPLs are set at 500 000 SMEs, limited to wool, and due to expire in two years. Nicaragua's TPLs start at 100 million SMEs and are phased out in equal annual cuts over five years.

Still other regimes employ what could be viewed as a modified form of TPLs, allocating the quotas not fully free of RoO, but against some more lenient product-specific RoO. For instance, SADC provides quotas at more lenient RoO for the textile and apparel exports of Malawi, Mozambique, Tanzania, and Zambia (MMTZ countries) to the SACU region for a period of five years.

3.6 Policy recommendations: counteracting restrictive RoO and the splintering of the global RoO panorama

While RoO are not necessarily bad for sound economic decisions, restrictive RoO can be. Furthermore, the existing differences in the product-specific and regime-wide RoO *across* the different RoO regimes

Mapping and measuring Rules of Origin around the world

can even in a simplified bi- or tripolar RoO world make a difference in economic decisions and limit exporters' opportunities for diversifying markets.

How can the potential frictions created by stringent RoO and cross-regime differences in RoO be reduced? How can entrepreneurs import inputs from the cheapest sources, firms exploit cross-border economies of scale at lowest costs, and multinational companies make sweeping investment decisions based on economic efficiency rather than distortionary policies? What are the best ways to counter the development of trade- and investment-diverting hubs in favor of a globally free flow of goods, services, and investment?

Abolishing RoO altogether would certainly be the best and simplest means to counteract the impact of RoO. Another way to relegate RoO to irrelevance is by bringing MFN tariffs to zero globally. However, since these options are hardly politically palatable in the near future, a third possibility is to harmonize preferential RoO at the global level. A start would be establishing a small set of RoO combinations—a 'RoO band'—that are permitted would be a good start. This would ensure that at least the required production methods in a given sector would remain relatively similar across export markets—and enhance the prospects of linking agreements with each other in the future. Measures to accompany the harmonization work could involve (1) the incorporation of the various mechanisms of flexibility to RoO regimes during the transition to a global RoO regime; and (2) the establishment of a multilateral mechanism to monitor the member states' implementation of preferential and non-preferential RoO.

To be sure, harmonization would not be a simple endeavor given the differences in the types of RoO around the world. Even slight differences can be difficult to overcome due to political resistance by sectors benefiting from 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 US would likely in principle be reluctant to adopt each other's RoO. Both parties would likely also be concerned of the counterpart's striving for a RoO regime that would allow it to trans-ship via the parties' common PTA partners, such as Mexico, to the other party's market.

However, adopting a global regulations for preferential RoO regimes is not necessarily all that daunting. There are five sources of optimism.

First, the WTO members have already been able to sit down and compromise on harmonized non-preferential RoO, which not only evinces a

Mapping and measuring Rules of Origin around the world

reservoir of political will to tackle RoO, but also provides an immediately available blueprint for harmonizing preferential RoO. And not only are non-preferential RoO negotiated and readily available as a model, but they make a good model: overall, they are less restrictive and complex than either the NAFTA- or PANEURO-type RoO.

Secondly, preferential RoO would likely prove easier to negotiate than non-preferential RoO. Non-preferential RoO involve tracking the production process all the way to the country in which the good originates, while preferential RoO simply require a determination that the final exporter country is also the country of origin: the good either originates in the PTA area or it does not, with the 'true' and very initial origin being immaterial. Preferential RoO talks would thus likely engage a smaller number of interested parties to contest a given rule. Moreover, unlike non-preferential RoO that are employed in the application of numerous other trade-policy instruments, preferential RoO have few purposes beyond refereeing the market access of goods to the PTA space. As such, their negotiation would probably not involve as much consideration of the other WTO agreements as the harmonization of non-preferential RoO does.

Thirdly, the growing attention at the WTO on PTAs in general and preferential RoO, in particular, should propel constructive proposals as to the types of RoO that are most conducive to the march toward unfettered global flow of commerce. For the first time in its history, the WTO Committee on Regional Trade Agreements (CRTA) has decided to consider RoO a 'systemic' issue, as opposed to both individual PTA issues such as prior considerations of the PANEURO system, and issues that—whether systemic or individual—are not being prioritized by the CRTA.

Fourthly, advances in Trade-Related Investment Measures (TRIMS) can help advance the harmonization of RoO, if RoO are viewed, as they rightfully can and should be, as policy instruments affecting investment decisions (Thorstensen 2002). Like TRIMS, RoO can be employed strategically as an incentive to attract investment and encourage exports—and exports with high local value. A sturdier multilateral regulatory framework on investment policies could help curb the strategic, trade- and investment-distorting uses of RoO.

Harmonization of preferential RoO—and harmonization toward a flexible-regime model—provides at present the most attainable means to counteract RoO's negative effects on global trade and investment. The negotiators of the Doha Trade Round should decisively tackle RoO as a distortionary trade and investment policy instrument, and do so in four concrete ways.

Mapping and measuring Rules of Origin around the world

First, they should provide a forceful push for completing the task of harmonizing non-preferential RoO. Completing the harmonization process is all the more compelling in the face of the growth of global commerce and the increasing fragmentation of global production, both of which would thrive under a clear and uniform set of rules.

Secondly, the Doha negotiators should launch a process of *de jure* harmonization of preferential Rules of Origin. The relatively high levels of restrictiveness of the main RoO regimes and the differences between regimes pose unnecessary policy hurdles to rational economic decisions, limiting the opportunities for exporters to operate on multiple trade fronts simultaneously, and hampering consumers' access to the best goods at the lowest prices.

Thirdly, the Doha Round should forge in a multilateral mechanism to monitor and enforce the transparent application of both preferential and non-preferential RoO. And fourthly, RoO should be incorporated in the TRIMs negotiations.

Preferential RoO matter only as long as there are MFN tariffs. Thus, the ultimate key to counteracting preferential RoO's negative effects lies in the success of multilateral liberalization. Should multilateral trade rounds result in deep MFN tariff lowerings and the proliferation of PTAs engender a dynamic of competitive liberalization worldwide, the importance of preferential RoO as gatekeepers of commerce would automatically dissolve.

3.7 Conclusion

This chapter has sought to present a novel descriptive and analytical mapping of the global Rules of Origin panorama. We have (1) reviewed the types of RoO used around the world; (2) drawn comparisons between the structure of RoO across a host of PTAs; (3) presented methodologies for constructing generalizable measurements for (a) the degree of restrictiveness and selectivity of product-specific RoO, and (b) the level of flexibility provided by the various regime-wide RoO; and (4) explored the behavior of RoO over time. We have also sought to chart some of the main *ad hoc* measures in RoO regimes, and offer policy recommendations for reducing the actual restrictiveness of RoO and the proliferation of divergent types of RoO regimes around the world.

We have provided precursory evidence that RoO are to an important extent driven by political-economy dynamics. The analytical tools developed here can be employed beyond existing contributions in order

to evaluate the politics behind the definition of RoO as well as the economic effects of RoO. On a broader level, we have striven to help pave the way for further efforts to disaggregate PTAs by the various disciplines they prescribe for drawing cross-PTA comparisons. Such a task is central for developing a full understanding of the contractual diversity in the rapidly proliferating PTA universe. It is also crucial for moving the debate on the effects of PTAs to the multilateral trading system toward PTA-PTA comparisons—and, ultimately, for making recommendations for designing PTAs in ways that are conducive to unfettered global commerce.

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Appendix I

The observation rule yields a RoO index as follows:

$$\begin{aligned}y &= 1 \text{ if } \gamma^* \leq \text{CI} \\y &= 2 \text{ if } \text{CI} < \gamma^* \leq \text{CS} \\y &= 3 \text{ if } \text{CS} < \gamma^* \leq \text{CS and VC} \\y &= 4 \text{ if } \text{CS and VC} < \gamma^* \leq \text{CH} \\y &= 5 \text{ if } \text{CH} < \gamma^* \leq \text{CH and VC} \\y &= 6 \text{ if } \text{CH and VC} < \gamma^* \leq \text{CC} \\y &= 7 \text{ if } \text{CC} < \gamma^* \leq \text{CC and TECH}\end{aligned}$$

where γ^* 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.

We make 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 per cent 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 per cent, as well as when the import content criterion is combined with a technical requirement. Secondly, 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.

To be sure, the observation rule is somewhat crude (1) for accounting for the restrictiveness of a stand-alone TECH RoO, which is likely more demanding than a coding of 1–2 allows; and (2) for capturing subtleties of the EU RoO as it does not account for the ‘soft’ CTC criterion used by the EU. However, it does allow for establishing useful cross-regime comparisons.

Mapping and measuring Rules of Origin around the world

Appendix IIa PTAs around the world, by year of entry into force and full name

PTA	ENTRY YR	FULL NAME/TYPE
EU-ICELAND	1973	PANEURO
EU-NORWAY	1973	PANEURO
EU-SWITZERLAND	1973	PANEURO
BANGKOK AGREEMENT	1976	
LAIA	1981	Latin American Integration Association
SPARTECA	1981	South Pacific Regional Trade and Economic Cooperation Agreement
ANZCERTA	1983	Australia-New Zealand Closer Economic Relations Trade Agreement
GULF CC	1983	Gulf Cooperation Council
US-ISRAEL	1985	
ECOWAS Trade Liberalisation Scheme	1990	Economic Community of West African States
MERCOSUR	1991	Southern Common Market
NAMIBIA-ZIMBABWE	1992	
EFTA-CZECH REPUBLIC	1992	PANEURO
EU-CZECH REPUBLIC	1992	PANEURO
EU-HUNGARY	1992	PANEURO
EU-SLOVAK REPUBLIC	1992	PANEURO
EFTA-SLOVAK REPUBLIC	1992	PANEURO
EFTA-TURKEY	1992	PANEURO
EU-POLAND	1992	PANEURO
EU-BULGARIA	1993	PANEURO
AFTA	1993	ASEAN Free Trade Area
CEFTA	1993	Central European Free Trade Area/PANEURO
EFTA-BULGARIA	1993	PANEURO
EFTA-ISRAEL	1993	PANEURO
EFTA-HUNGARY	1993	PANEURO
EFTA-POLAND	1993	PANEURO
EFTA-ROMANIA	1993	PANEURO
EU-ROMANIA	1993	PANEURO
BAFTA	1994	Baltic Free Trade Agreement/PANEURO
COMESA	1994	Common Market for Eastern and Southern Africa
EEA	1994	European Economic Area/PANEURO
NAFTA	1994	North American Free Trade Agreement
G3	1995	Group of Three
EFTA-SLOVENIA	1995	PANEURO
EU-LATVIA	1995	PANEURO
EU-LITHUANIA	1995	PANEURO
EU-ESTONIA	1995	PANEURO
MEXICO-BOLIVIA	1995	
MEXICO-COSTA RICA	1995	
EFTA-ESTONIA	1996	PANEURO
EFTA-LATVIA	1996	PANEURO
EFTA-LITHUANIA	1996	PANEURO
SLOVENIA-LATVIA	1996	PANEURO
SLOVENIA-FYROM	1996	PE
MERCOSUR-CHILE	1996	
CZECH REPUBLIC-LITHUANIA	1997	PANEURO
POLAND-LITHUANIA	1997	PANEURO
SLOVAK REPUBLIC-ISRAEL	1997	PANEURO
SLOVENIA-ESTONIA	1997	PANEURO
CZECH-ISRAEL	1997	PANEURO
CZECH-LATVIA	1997	PANEURO
SLOVAK REPUBLIC-LATVIA	1997	PANEURO
SLOVAK REPUBLIC-LITHUANIA	1997	PANEURO
SLOVENIA-LITHUANIA	1997	PANEURO
EU-FAROE ISLANDS	1997	PE

Mapping and measuring Rules of Origin around the world

Appendix IIa (Continued.)

PTA	ENTRY YR	FULL NAME/TYPE
TURKEY-ISRAEL	1997	PE
CAN-CHILE	1997	
CAN-ISRAEL	1997	
MERCOSUR-BOLIVIA	1997	
CZECH-ESTONIA	1998	PANEURO
HUNGARY-TURKEY	1998	PANEURO
ROMANIA-TURKEY	1998	PANEURO
SLOVAK REPUBLIC-ESTONIA	1998	PANEURO
SLOVAK REPUBLIC-TURKEY	1998	PANEURO
TURKEY-LITHUANIA	1998	PANEURO
CZECH REPUBLIC-TURKEY	1998	PANEURO
HUNGARY-ISRAEL	1998	PE
POLAND-ISRAEL	1998	PE
SLOVENIA-CROATIA	1998	PE
SLOVENIA-ISRAEL	1998	PE
EU-TUNISIA	1998	
EU-SLOVENIA	1999	PANEURO
POLAND-LATVIA	1999	PANEURO
CHILE-MEXICO	1999	
TURKEY-BULGARIA	1999	
EFTA-MOROCCO	1999	
HUNGARY-LITHUANIA	2000	PANEURO
POLAND-TURKEY	2000	PANEURO
TURKEY-LATVIA	2000	PANEURO
TURKEY-SLOVENIA	2000	PANEURO
HUNGARY-LATVIA	2000	PANEURO
BULGARIA-FYROM	2000	PE
TURKEY-FYROM	2000	PE
EU-ISRAEL	2000	PE
SADC	2000	Southern African Development Community
EU-MEXICO	2000	
EU-SOUTH AFRICA	2000	
MEXICO-ISRAEL	2000	
EU-MOROCCO	2000	
US-JORDAN	2001	
EFTA-MEXICO	2001	
EFTA-CROATIA	2002	PANEURO
EU-CROATIA	2002	PANEURO
CACM-CHILE	2002	
JSEPA	2002	Japan-Singapore Economic Partnership Agreement
SAFTA	2003	Singapore-Australia Free Trade Agreement
EU-CHILE	2003	
EFTA-SINGAPORE	2003	
CHILE-SOUTH KOREA	2003	
US-CHILE	2003	
US-SINGAPORE	2004	
CAFTA	Yet to be ratified	US-Central America Free Trade Agreement

Mapping and measuring Rules of Origin around the world

Appendix IIb Selected PTAs by member states

PTA	MEMBERS
AFTA	Brunei, Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam
ANZCERTA	Australia, New Zealand
BAFTA	Estonia, Latvia, Lithuania
BANGKOK AGREEMENT	Bangladesh, China, India, Republic of Korea, Laos, Sri Lanka
CACM	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua
CAFTA	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, United States
CARICOM	Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago
CEFTA	Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, Slovenia
COMESA	Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe
EEA	EU, Iceland, Liechtenstein, Norway
EFTA	Iceland, Liechtenstein, Norway, Switzerland
ECOWAS	Benin, Burkina Faso, Cabo Verde, Ivory Coast, Gambia, Ghana, Guinea, Guinea Bissau, Mali, Liberia, Niger, Nigeria, Senegal, Sierra Leone, Togo, Namibia, Zimbabwe
FSRs	Belarus, Kazakhstan, Kyrgyz Republic, Russia
G3	Mexico, Colombia, Venezuela
GULF CC	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates
JSEPA	Japan, Singapore
LAIA	Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela
MERCOSUR	Argentina, Brazil, Paraguay, Uruguay
NAFTA	US, Canada, Mexico
SADC	Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe
SAFTA	Singapore, Australia
SPARTECA	Australia, New Zealand, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, Western Samoa

Notes for tables

¹ Ex-works price means the price paid for the product ex works to the manufacturer in the Member States in whose undertaking the last working or processing is carried out, provided the price includes the value of all the materials (the customs value at the time of importation of the non-originating materials used, or the first ascertainable price paid for the materials in the member state concerned) used, minus any internal taxes that are, or may be, repaid when the product obtained is exported.

Mapping and measuring Rules of Origin around the world

ⁱⁱ The transaction method is:

$$RVC = (TV - VNM/TV) \times 100,$$

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

The net cost method is

$$RVC = [(NC - VNM)/NC] \times 100,$$

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

ⁱⁱⁱ The build-down method is

$$RVC = [(AV - VNM)/AV] \times 100;$$

the build-up method is:

$$RVC = (VOM/AV) \times 100,$$

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

^{iv} The initial VC for chs. 28–40 is 40 per cent for the first three years, 45 per cent during the fourth and fifth years, and 50 per cent starting in year six. For chs. 72–85 and 90, VC is 50 per cent for the first five years, and 55 per cent starting year six.

^v The Mercosur RoO is 60 per cent RVC, and, additionally, change in tariff heading (Garay and Cornejo 2002). When it cannot be determined that a change in heading has taken place, the CIF value of the non-originating components cannot exceed 40 per cent of the FOB value of the final good. Special RoO apply to selected sensitive sectors, including chemical, some information technology, and certain metal products.

^{vi} The requirement is that the CIF value of the non-originating materials does not exceed 40 per cent of the of the FOB export value of the final good.

^{vii} A 50 per cent MC rule applies to Colombia, Peru and Venezuela; products from Bolivia and Ecuador are governed by a 60 per cent MC rule.

^{viii} The value-added test and is based on the formula: Qualifying Expenditure (Q/E)/Factory Cost (F/C), where Q/E = Qualifying expenditure on materials + qualifying labor and overheads (includes inner containers); and F/C = Total expenditure on materials + qualifying labor and overheads (includes inner containers). The factory or works cost are essentially the sum of costs of materials (excluding customs, excise or other duties), labor, factory overheads, and inner containers.

^{ix} The agreement requires the value added ensuing from their production in member states be not less than 40 per cent of their final value 'at the termination of

Mapping and measuring Rules of Origin around the world

the production phase'. In addition, the share owned by the citizens of the member states of the producing plant cannot be less than 51 per cent.

^x The MC criterion is calculated from CIF and FOB as follows:

$$\text{NOM} = (\text{MCIF}/\text{FOB}) \times 100,$$

where NOM is the value content of non-originating materials, MCIF is the CIF value on non-originating materials, and FOB is the free on-board value payable by the buyer to the seller.

^{xi} The origin protocol requires that either the CIF value of non-originating materials does not exceed 60 per cent of the total cost of the materials used in the production of the goods; or that the value added (the difference between the ex-factory cost of the finished product and the CIF value of the materials imported from outside the member states and used in the production) resulting from the process of production accounts for at least 35 per cent of the ex-factory cost (the value of the total inputs required to produce a given product) of the goods.

^{xii} Besides the 40 per cent RVC rule, the share of member states' citizens of the plant that produced the product must be at least 51 per cent.

^{xiii} The RVC is calculated as the sum of (i) the cost or value of the materials produced in the exporting Party, plus (ii) the direct costs of processing operations performed in the exporting party. It cannot be less than 35 per cent of the appraised value of the article at the time it is entered into the other party.

The cost or value of materials produced in a party includes: (i) the manufacturer's actual cost for the materials, (ii) when not included in the manufacturer's actual cost for the materials, the freight, insurance, packing, and all other costs incurred in transporting the materials to the manufacturer's plant, (iii) the actual cost of waste or spoilage (material list), less the value of recoverable scrap, and (iv) taxes and/or duties imposed on the materials by a party, provided they are not remitted upon exportation. When a material is provided to the manufacturer without charge, or at less than fair market value, its cost or value shall be determined by computing the sum of: (i) all expenses incurred in the growth, production, or manufacture of the material, including general expenses, (ii) an amount for profit, and (iii) freight, insurance, packing, and all other costs incurred in transporting the material to the manufacturer's plant.

Direct costs of processing operations mean those costs either directly incurred in, or that can be reasonably allocated to, the growth, production, manufacture, or assembly, of the specific article under consideration. Such costs include, for example, (i) all actual labor costs involved in the growth, production, manufacture, or assembly, of the specific article, including fringe benefits, on-the-job training, and the cost of engineering, supervisory, quality control, and similar personnel, (ii) dies, molds, tooling and depreciation on machinery and equipment that are allocable to the specific article, (iii) research, development, design, engineering, and blueprint costs insofar as they are allocable to the specific article; and (iv) costs of inspecting and testing the specific article.

Mapping and measuring Rules of Origin around the world

^{xiv} Drawback is not mentioned in Hungary–Israel, Poland–Israel, Slovenia–Croatia, Slovenia–FYROM FTAs. Drawback allowed for the first two years in EU–Palestinian Authority, two and one half years in EFTA–Palestinian Authority, three years in EFTA–FYROM, one year in Bulgaria–FYROM, three months in Turkey–FYROM, and two years in Israel–Slovenia.

^{xv} Joint Declaration I of the FTA opens the possibility for full cumulation, stating that ‘or that purpose, the Parties will examine the parameters to be considered in evaluating the economic conditions needed to eventually implement full cumulation. This process will begin no later than three years after entry into force of this Decision.’

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

^{xvii} When products from the South Pacific Islands that are exported to New Zealand are cumulated with Australian inputs, a minimum of 25 per cent of ‘qualifying expenditure’ from South Pacific Islands is required.

^{xviii} Requires the expenditure on goods produced and labor performed *within the territory of the exporting* member state in the manufacture of the goods to not less than 50 per cent of the ex-factory or ex-works cost of the goods in their finished state.

The agreement stipulates that ‘With respect to drawbacks within one year from the date of entry into force of this Agreement, the Standing Committee shall consider whether drawbacks on goods imported from third countries should be permitted in relation to products used in the manufacture of finished products for which concessions have been exchanged by the Participating States.’

^{xx} Mentioned in the section on trade remedies. One of the criteria for imposing a countervailing duty is that the targeted subsidy is not less than the 2 per cent *de minimis*.

^{xxi} The FTA stipulates that ‘Where each Party has entered separately into a free trade agreement under Article XXIV of the GATT 1994 with the same non-Party before this Agreement enters into force, a good, which, if imported into the territory of one of the Parties under such free trade agreement with that non-Party, would qualify for tariff preferences under that agreement, shall be considered to be an originating good under this Chapter when imported into the territory of the other Party and used as a material in the production of another good in the territory of that other Party.’