

Rules of origin and the use of free trade agreements: a literature review

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Abstract

One of the key reasons for countries to enter into bilateral or regional free trade agreements (FTAs) is to eliminate tariff and non-tariff barriers between or among them. Despite their proliferation, however, many companies elect not to utilise FTAs due to the regulatory burdens imposed by the core provisions of those agreements, that is, the rules of origin (RoO). Research on RoO, however, is in its infancy and very little has been done to assess their regulatory and administrative influence. The objective of this paper is to provide a brief overview of research conducted on RoO to introduce prospective researchers to the issues and research methodologies used. The paper briefly considers the broader historical context of the proliferation and the underutilisation of FTAs, including how RoO came to attract researchers' attention. It then examines studies on RoO and the aspects of RoO that have been the subject of research. An analysis of the different methodologies employed in related study areas follows. These studies suggest an obvious interconnection between the design and administration of RoO and the use of FTAs. In this respect, this paper proposes that a new framework of research will complement the existing work in helping us to understand the interconnection from an administrative perspective. In constituting this framework, it also suggests adopting the methodologies of trade facilitation studies or tax compliance studies.

1. Introduction

One of the key reasons countries enter into bilateral or regional free trade agreements (FTAs) is to eliminate tariff and non-tariff barriers between or among them. The number of FTAs has increased rapidly since the mid-1990s. As of January 2012, the World Trade Organization (WTO) reported that 319 FTAs were in force and a further 511 FTAs were under negotiation. However, despite this proliferation, many companies either underutilise FTAs or neglect entirely to use them. For example, the average utilisation ratio of the North American Free Trade Agreement (NAFTA) was around 64% in 2000, and in the case of the ASEAN FTA (AFTA), below 10% was utilised in 2002 (Baldwin 2006). Researchers have argued that the underutilisation of FTAs diminishes the impact of such agreements on worldwide free trade and, as a consequence, undermines the incentive for unaffiliated nations to form new agreements (Baldwin 2005).

The rules of origin (RoO)² are often identified as the primary reason why FTAs are underutilised. FTAs liberalise trade on the basis of a product's origin using RoO which designate a product's origin in order to determine its eligibility for preferential tariff rates (Brenton & Imagawa 2005). As FTAs continue to proliferate, these rules are becoming increasingly complex, much like a 'spaghetti bowl' in which tariffs and rules vary according to a product's origin (Bhagwati 1995, p. 4). Because of the costs

of administering and complying with such complex RoO companies often elect not to use FTAs. In addressing the underutilisation of FTAs, therefore, it is imperative to understand the detailed regulatory and administrative aspects of the RoO.

Research on RoO, however, is in its infancy. Studies on RoO in the early 1990s were undertaken primarily by researchers from political economic backgrounds and, consequently, the RoO were viewed mostly in terms of their being instruments of commercial policy (Falvey & Reed 1998; Krishna & Krueger 1995; Krueger 1993). Since then, studies have been conducted to explore the administrative impact of RoO but these have exclusively emphasised the trade policy aspects of RoO such as the trade-restricting legal criteria of the rules (Anson et al. 2003; Estevadeordal & Suominen 2008; Harris 2007; Piermartini & Budetta 2006). As a result, very little has been done in the way of assessing and measuring the regulatory and administrative influences of RoO.

The principal objective of this paper is to make available in a single source a brief overview of research conducted on RoO. This paper also includes literature on trade facilitation and taxation in order to explore other possible methodologies that could be applied to future research on the administration of RoO. In so doing, this work will introduce prospective researchers in this area to the issues and research methodologies used.

The paper focuses on studies that have been undertaken on RoO. The first section briefly considers the broader historical context of the proliferation and underutilisation of FTAs, including how RoO came to attract researchers' attention. The second section examines studies on RoO and is followed by a third section which focuses on aspects of RoO that have been the subject of research. An analysis of the different methodologies employed in related study areas are dealt with in section four. The concluding section summarises the major outcomes of these studies and anticipates the future direction of research and research design in this area.

2. Historical context: RoO and the underutilisation of FTAs

The primary focus of FTA studies has been on the debate over the desirability of FTAs as instruments of trade liberalisation (Panagariya 1999). Proponents of FTAs often assert that FTAs are intended to be 'WTO-plus' arrangements that seek freer trade among like-minded trading nations. Conversely, multilateralists contend that FTAs are a major departure from the Most-Favoured-Nation (MFN) principle of the *General Agreement on Tariffs and Trade* (GATT) and detract from true liberalisation (Krueger 1997, p. 10).

Bhagwati (1993) and Bhagwati and Panagariya (1996) describe the proliferation of FTAs as having occurred in two phases: initially, in the first regionalism in the 1960s and, subsequently, in the second post-1980s regionalism. Panagariya (1999) explains that until the European Community (EC) and the US started a race towards regionally-based trade liberalisation in the early 1980s, effective preferential trade agreements, including FTAs, were regarded as limited to the EC. Since then, the race between the two economic giants has initiated the proliferation of FTAs in Africa, Latin America, South and Central Asia, Central and Eastern Europe, and the Baltic Republics.

Bhagwati, Greenaway and Panagariya (1998) note that studies of the first regionalism have focused principally on analysing the immediate effect FTAs have on welfare, using the approaches established by Viner. Viner (1950) concluded that FTAs (or Customs Unions) are more trade-diverting than trade-creating and that, overall, they are harmful to the world's welfare. However, Lipsey (1960), Wonnacott and Lutz (1989) and Kemp and Wan (1976) who reworked the Vinerian approach suggest that for certain countries or in certain types of preferential arrangements, such as in Customs Unions, preferential arrangements can be welfare-enhancing.

Studies on the second regionalism focus on estimating whether the long-term consequences of FTAs should be considered ‘stumbling blocks’ or ‘building blocks’ towards multilateral trade liberalisation (Bhagwati 1993). Krishna (1998), Limão (2006), McLaren (2002) and Piermartini and Budetta (2006) contend that FTAs are a stumbling block in the way of multilateral trade liberalisation. They suggest that the sway of vested interests, the abuse of bargaining power, or the costs of adjusting the standards under FTAs might lock countries into regional preferential arrangements and thwart further progress into multilateral liberalisation. An opposing view is presented by Baldwin (1993) who suggests that the ‘spaghetti bowl’ of proliferating FTAs will ultimately contribute to multilateral liberalisation, and that this most likely will result in the rise of incompatible RoO within a fast-changing and fragmented production environment. The costs of complying with such rules, he contends, will motivate business to force governments to harmonise the rules based on the rules of already existing FTAs. Thus, he asserts that the currently proliferating FTAs can be building blocks for harmonisation and multilateral trade liberalisation.

Studies featuring both the ‘building-block’ and ‘stumbling-block’ views suggest that the underutilisation of FTAs is the primary hurdle in the realisation of freer trade. Baldwin (2005) contends that underutilisation reduces the incentives for non-members to enter into new FTAs and thereby delays the expansion of FTA membership. Bhagwati et al. (1998) and Panagariya (1999) argue that, as FTAs proliferate, the mechanism of FTAs in liberalising trade, which is based on the origin of product, will become more and more complex, à la the ‘spaghetti bowl’ (Bhagwati 1993). They explain that the spaghetti bowl of FTAs increases the cost of cutting trade barriers and thereby stymies the full realisation of freer trade under FTAs.

Interestingly, despite growing concern over the underutilisation of FTAs, studies on FTA usage are very limited in scope (Hayakawa, Kim & Lee 2012). Such studies typically exploit the utilisation ratio of FTAs. This ratio represents ‘the share of exports from the party countries to the other party countries that are actually granted the preferential tariff rate’ (Augier, Gasiorek & Lai Tong 2005, p. 576). However, the primary difficulty in studying the use of FTAs is that this ratio is not always available for every FTA (Manchin & Pelkmans-Balaoing 2007a). To assess utilisation, therefore, some researchers have used trade data or customs records (Athukorala & Kohpaiboon 2011; Hayakawa et al. 2012; Manchin & Pelkmans-Balaoing 2007a). Others have conducted firm-level surveys (Hiratsuka, Isono, Sato & Umezaki 2008; Kawai & Wignaraja 2009). For the most part, this research has been undertaken to study the underutilisation of Asian FTAs and the General System of Preference (GSP).

From the political economic context, Baldwin (2005) provides a general overview of the factors that have resulted in the underutilisation of FTAs in Asia. The high degree of inter-regional trade in parts and components characterises the manufacturing climate of Asian countries. Due to their high degree of inter-dependence, in the 1990s Asian countries acted unilaterally to cut tariffs on certain parts and components. This voluntary tariff cut has marginalised the attractiveness of preferential tariffs under the AFTA. Additionally, Baldwin suggests that the cost of complying with RoO further marginalised the AFTA by making utilising it less preferable. Manchin and Pelkmans-Balaoing (2007a) also suggest that the preference margin under the AFTA is not sufficient to cover the costs required to generate the preference. Furthermore, even if the AFTA’s RoO are generally very flexible, they are still very restrictive in terms of the local content ratio of the products that are manufactured in ASEAN countries.

Kawai and Wignaraja (2009), Katsuhide and Shujiro (2008), Athukorala and Kohpaiboon (2011), and Hayakawa et al. (2012) also suggest that insufficient information on FTAs, small preference margins, delays, and costs associated with the RoO are the most common reasons for the non-use of FTAs.

Studies on the utilisation of the GSP scheme suggest similar reasons for the low utilisation. Brenton and Manchin (2003), Francois, Hoekman and Manchin (2006), and Bureau, Chakir and Gallezot (2007) have investigated the utilisation of the GSP, and contend that the administrative burden of LDCs in proving the origin of products is the major hurdle for realising the full benefit of the preference. They

conclude, 'what matters is not just the level of border barriers but the rules that govern the way they are administered' (Brenton & Manchin 2003, p. 756). Appendix 1 summarises studies on underutilisation of the preferential tariffs mentioned in this section.

Although the evidence from the studies suggests various reasons for the underutilisation of FTAs, RoO are most often named as the primary factor responsible for this outcome. Such arguments have contributed to increased interest in RoO, both by independent researchers and governments. The degree of coverage has varied. Some political and economic aspects of RoO have received near comprehensive coverage while other administrative aspects are currently under-researched. This analysis will now turn to the scope and outcomes of studies that have been conducted on RoO.

3. The scope and outcomes of studies on RoO

Studies of RoO have been undertaken by researchers largely from political and economic backgrounds, and these typically support the 'building-block' view of FTAs (for example, Estevadeordal, Harris and Suominen 2007). Other researchers have noted that approaches to trade facilitation studies can be used to address certain administrative issues of RoO (Harris & Staples 2009; Izam 2003; James 2006; Messerlin & Zarrouk 2000). However, there has been no serious study utilising such approaches, and the administrative issues of RoO have received less attention from researchers than have the political issues.

Estevadeordal et al. (2007) summarise two key aspects of the RoO that were the subject of their research: restrictiveness and divergence. While 'restrictiveness' refers to the aspect of RoO that restrict trade under FTAs, 'divergence' denotes the divergent RoO that differ across FTAs and products within an FTA. Though few studies embrace other issues concerning RoO, most studies have been devoted to assessing these two aspects.

Where the research has been on the restrictiveness of RoO, studies emphasise the ways RoO function as discriminatory trade regimes and the influence they exert in this capacity. Vermulst (1992) and Krishna and Krueger (1995) state that RoO employ different methodological discriminations and that these have varying degrees of stringency. Ju and Krishna (1998) contend that restrictive RoO require firms to use ineffective members' input for the production of finished goods. Falvey and Reed (1998, p. 219) postulate the requirements of RoO as content protection, which means the 'constraints imposed on a foreign firm; that it use a certain proportion of domestic input in its total input in order to sell in the domestic market'. LaNasa III (1993) argues that countries and trade blocs are exploiting such RoO as new mechanisms to protect domestic industries and promote the relocation of manufacturing processes within the trade area. As Krueger (1993, p. 21) contends, RoO are found to extend protection to the exporters and producers of finished goods 'in avoiding competition from producers with access to cheaper intermediate goods' from non-party countries. Estevadeordal (1999) and Estevadeordal and Suominen (2004) argue that tariffs and the restrictiveness of RoO are the result of the same political economy. Thus, the greater the preference margin, the stricter the requirements imposed by RoO.

The complexity that results from the diversity of RoO has been examined frequently based on the estimated cost of complying with such rules (Anson et al., 2003; Anson et al. 2005; Carrère & De Melo 2004; Estevadeordal et al. 2007). Anson et al. (2003, p. 514) suggest that the compliance costs of RoO largely negate preferential access under FTAs, and that the compliance costs of RoO amount to 6% of a product's export value, which is higher than the average preferential margin of 4%. Carrère and De Melo (2004) argue that, to compensate for the production and compliance costs caused by the restrictiveness of RoO, about 10% of the preference margin would be needed for NAFTA. Cadot, Carrère, De Melo and Portugal-Pérez (2005) estimate that the border price of Mexican apparel product has risen 12% to compensate for the cost of complying with NAFTA's RoO. Cadot, Carrère, De Melo and Tumurchudur (2006) estimate the trade-weighted compliance costs at approximately 8.0% for the PanEuropean Union (PANEURO) and 6.8% for NAFTA.

The fundamental objective of RoO is often identified as the checking of free-riders who ‘seek to enjoy the benefits of the FTA without paying the costs associated with FTA membership’ (Boadu & Wise 1991). For this reason, researchers often suggest that the origin certification and verification procedures under the RoO be made integral to the administration of RoO. Izam (2003), Brenton and Imagawa (2005) and Estevadeordal et al. (2007) conclude that the procedures for exporters or producers to obtain the certificate often require expensive accounting and inventory systems. The administrative burden in this procedure, they warn, may result in inadequate administrative cooperation, faults, and fraud in the certification of origin process. Manchin and Pelkmans-Balaoing (2007b, p. 14) indicate that the costs and delays in obtaining certification and in proving conformity with their origin requirements depend largely on the stringency of the verification procedures. Harris and Staples (2009, p. 7) suggest that the primary dilemma in this regard is ‘balancing the rights and obligations of the producer and the importer’. While the producer has sufficient knowledge of the origin of their product, the importer is responsible for the payment of tariffs. Therefore, if the producer, either by fraud or by negligence, provides faulty origin details about their product, the importer is liable for non-paid tariffs and penalties. Boadu and Wise (1991), Cantin and Lowenfeld (1993) and Harris and Staples (2009) emphasise the fact that the administration of RoO often results in considerable uncertainty for companies, and this can occur under circumstances in which ‘procedures are unclear, customs officials lack capacity, or legal provisions are incomplete’ (Harris & Staples 2009, p. 7).

In summary, studies have found the restrictiveness, complexity (or divergence), compliance costs, and uncertainty arising from the administration of RoO to be factors that influence the full use of FTAs. A summary of the studies conducted on RoO mentioned in this section is contained in Appendix 2. For each aspect of RoO, different research methodologies have been devised that attempt to identify influences on the use of FTAs. The next section examines the methodologies that have been applied to the research of RoO.

4. Research methodologies

The quantitative paradigm has been utilised predominantly in studies of RoO. Political economic studies on RoO typically focus on the restrictiveness of RoO and their implications. In such studies, the gravity model is often utilised to predict bilateral trade flow under certain RoO restrictions. Augier et al. (2005) use the gravity model to assess the influence of the relaxation of RoO with a diagonal cumulation. Utilising dummy variables and synthetic indices, Estevadeordal and Suominen (2004) investigate the effects of RoO under PANEURO and the NAFTA using the gravity model. Also, Cadot, Estevadeordal and Eisenmann (2005) explore the influence of NAFTA’s RoO on Mexican market access to the US market.

In analysing the different levels of restrictiveness of RoO, many studies have adopted Estevadeordal’s (1999) Restrictiveness Index (RI). The RI provides observation rules for the legal texts of RoO using a seven-point scale, defining the rules with a rating of one as less strict than those with a rating of two. For example, a higher RI is applied to a rule requiring a change at the section level (2-digit HS Code) than a rule requiring a change at the heading level (4-digit HS Code). A rule requiring both a change at the tariff heading level (CTH) and a certain level of Regional Value Content (RVC) is classified at a higher RI than a rule requiring a simple tariff change rule. Estevadeordal and Suominen (2004) assessed the structure of RoO in selected FTAs in Europe, the Americas, and the Asia Pacific region using the RI. Augier et al. (2005) adopted this index in devising their gravity model. Using the index, Estevadeordal et al. (2007, pp. 22-3) analysed the restrictiveness and complexity of RoO of FTAs around the world.

In applying the indices, Estevadeordal et al. (2007, p. 22) explain the restrictiveness of RoO in these terms: ‘the capacity of RoO to affect economic decisions depends on the degree to which they restrict the options of economic actors and the size of the tariff preference to which compliance with these rules give access’. They emphasise that the restrictiveness observed through the indices may differ from the real

restrictiveness that firms face when utilising preferential tariffs. Rather, they note that ‘real’ or effective restrictiveness depends on the availability of efficient input supplies from the FTA member countries.

The complexity or divergence of RoO has often been assessed by estimating the compliance costs the RoO entail. Following Herin (1986), the costs are assessed by estimating the upper and lower bounds on the costs of RoO. In this approach, for sectors with utilisation rates close to 100%, the preference margin is assumed as the upper bound of compliance costs, while for sectors with zero utilisation rates, the preference margin is assumed to be the lower-bound of the costs. For sectors with a utilisation ratio between zero and 100%, the average rate of tariff preference for the remaining sectors is assumed to equate to the costs. Based on this approach and the RI, Anson et al. (2003) computed compliance costs of RoO. Carrère and De Melo (2004) attempted to apply the RI for measuring the production and the administrative costs resulting from RoO under NAFTA. In a similar vein, Cadot et al. (2005) analysed the effects of production costs on the price of final and intermediate goods. Cadot et al. (2006) compare trade-weighted compliance costs of PANEURO FTAs with those of NAFTA.

Though the administration of RoO has been discussed in a number of papers, only limited numbers of systematic methodologies have been applied to measure the specific issues related to this administration. Some studies have been conducted based on the case study method. Boadu and Wise (1991) investigated administrative problems associated with implementing RoO under the first three FTAs of the US. Cantin and Lowenfeld (1993) explored the disputes between Canada and the US in interpreting the value-added requirements for the Honda Civic under the Canada-US FTA. The Commission of the European Communities (2003) investigated the difficulties developing countries face in managing the administrative procedures of RoO under the EU’s GSP regime.

Some researchers suggest that trade facilitation studies can be attempted as an approach to future research on the administration of RoO (Hamanaka, Tafgar & Lazaro 2010; Harris & Staples 2009; Maur 2008). Trade facilitation studies have a wide scope in terms of subject area. Wilson, Mann and Otsuki (2005) explain that by observing actual practice, such as documentation or the logistics of goods, trade facilitation studies seek to relate actual practice to implications for reforms of the trade interface. Wilson, Mann and Otsuki (2003) stipulate that most trade facilitation studies have been conducted based on the computable general equilibrium (CGE) model and the gravity model, using data from already existing survey results. Especially in the study of customs administration, Wilson, Mann, Woo, Assanie and Choi (2002) have exploited ‘the Enabling Trade Index’ and ‘the Global Enabling Trade Report.’ However, the authors of the report, Doherty, Hanouz, Geiger, Lawrence and Herrera (2010) have recently argued that currently available measures in trade facilitation studies do not include any measure for RoO.

In the tradition of studying customs administration, tax studies have provided a useful framework. In tax studies, the complexity of customs administration is assessed based on tax compliance costs. Sandford, Godwin and Hardwick (1989) and Shekidele (1999) examined the compliance costs of excise duties in the UK and Tanzania, respectively. Based on compliance costs surveys, Eland (1995) examined the benefit of a Common Customs Tariff of duties that has been introduced with a Single European Market. Another aspect of customs administration that has been studied alongside the methodologies of the tax studies is the uncertainty caused in the context of customs administration. Bhagwati (1964) surveyed Turkish trade data to investigate the gap between export invoice price and import customs value to assess the issue of import control. Using quasi-experiment research, Yang (2008) explored customs reform in the Philippines to analyse the impact of enforcement on the evasion of customs duty. Using trade data from China and India respectively, Fisman and Wei (2004) and Mishra, Subramanian and Topalova (2008) surveyed the relationship between tariff rate and the evasion behaviour of traders. Studies such as these suggest that the framework of tax studies is generally applicable to the issues of customs administration.

To summarise, in studying RoO, research methodologies have been developed to explore the restrictiveness and the compliance costs of RoO. However, there is very little evidence that researchers

have considered other possible methodologies, such as the methodologies of trade facilitation studies or tax studies which has led to a paucity of studies on the administration of RoO.

5. Conclusions

The literature suggests that RoO result in restrictions, higher costs, and compliance burdens for companies using FTAs, and that the initial neglect of RoO and the underuse of FTAs still persists. Therefore, in designing RoO, there should be a clear recognition of the impact of the proposed design on the administration of RoO, as well as on the compliance burdens that are imposed on companies using FTAs. The greatest contribution that future research into the administration of RoO can make is to ensure that countries that formulate RoO are properly informed as to the compliance burden implications of their actions.

While the amount of research is increasing, the scope and the methodological approach of this research is still limited. In particular, the use of FTAs cannot be measured in many cases without available utilisation ratio data and measures for restrictiveness. Furthermore, the complexity of RoO is established by observing their legal text which may differ from the real restrictiveness and costs in actually using FTAs. In the absence of such data, only a few studies provide a useful reference for the administration of RoO.

Studies have suggested an interconnection among RoO design, administration, and the use of FTAs. In this respect, this literature review proposes that a new framework of research will complement the existing work in helping us to understand the interconnection from an administrative perspective. In constituting this framework, it is also suggested that adopting the methodologies of trade facilitation studies or tax compliance studies would be a worthwhile starting point. Importantly, this review suggests that research into RoO will enhance our knowledge on the cost side of FTAs.

Appendix 1: Summary of major studies of the use of FTAs

Table 1: Determinants of utilisation of preferential tariffs

Author	Preference scheme	Utilisation rates	Determinants of utilisation
Baldwin (2005)	AFTA	5%	Preference margin Compliance costs of RoO
Manchin & Pelkmans-Balaoing (2007a)	AFTA	5%	Preference margin Restrictiveness of RoO
Kawai & Wignaraja (2009)	FTAs in six Asian countries	-	Information on FTAs Preference margin Compliance cost of RoO
Katsuhide & Shujiro (2008)	Japan's FTAs	12.2% ~ 32.9%	Trade volume with FTA partners Compliance costs of RoO Information on FTAs Preference margin
Athukorala & Kohpaiboon (2011)	TAFTA	60 ~ 70%	Preference margin Restrictiveness of RoO Compliance costs of RoO
Hayakawa et al. (2012)	KAFTA	49.9%	Average export value Preference margin Restrictiveness of RoO
Brenton Manchin (2003)	Preference regime of the E.U.	45%	Restrictiveness of RoO Compliance costs of RoO
Francois et al. (2006)	Preference regime of OECD countries	-	Compliance costs of RoO
Bureau et al. (2007)	Preference regime of the E.U. and the U.S.	89%	Compliance costs of RoO Predictability of the regime

Appendix 2: Summary of major studies of rules of origin

Table 2: Influences of RoO

Author	Preference Scheme	Influences of RoO
Vermulst (1992)	Preferential / Non-preferential	Different methodological discrimination of RoO restricts the scope of eligible preferences under FTAs.
LaNasa III (1993)	NAFTA	RoO are often formulated to protect domestic industry and to promote relocation of manufacturing processes to within the trade area
Krueger (1993)	Preferential	RoO restrict efficient sourcing for inputs of production. This extends protection for exporters to protection for producers from the competition with producers who use cheaper third countries' inputs.
Lloyd (1993)	Preferential	All or nothing approach in determining the origin under FTAs can cause protective and trade diverting influences in the highly globalised production.
Krishna & Krueger (1995)	Preferential	Differences in percentage rules of RoO can exert a significant influence on the welfare and FDI.
LaNasa III (1996)	Preferential / Non-preferential	Overly restrictive RoO can engender uncertainty on firms' purchasing, investment, and manufacturing strategies.
Falvey & Reed (1998)	Preferential	RoO take the form of domestic content rules and influence on production.
Bhagwati et al. (1998)	Preferential	Arbitrary specification of content rules, and the complexity in computing the origin causes a myriad of problems in globalised production.

Table 3: Aspects of RoO influencing the use of FTAs

Aspects of RoO	Author	Measures applied	Findings
Restrictiveness of RoO	Ju & Krishna (1998)	Impact of restrictive RoO on the production costs and trade flows	Restrictive RoO undermine trade of both the finished goods and the inputs
	Estevadeordal (1999)	Differences in the restrictiveness of RoO under NAFTA	The greater the preferential margin, the stricter the requirements imposed by RoO.
	Estevadeordal & Suominen (2004)	The restrictiveness of RoO in FTAs in Europe, the Americas, and Asia Pacific	The restrictiveness of PANEURO RoO is less than the NAFTA rules, and FTAs in the Asia Pacific have the most generous RoO.
	Estevadeordal et al. (2007)	The restrictiveness and complexity of RoO in FTAs around the world	The restrictiveness within regimes and divergence across regimes increase transaction costs and uncertainty in international trade
Complexity and Costs of RoO	Anson et al. (2003)	Compliance costs estimated based on the utilisation ratio, the preference margin and the RI	Compliance costs of 6% of trade amount, which is higher than average preferential margin of 4%
	Carrère & De Melo (2004)	Compliance costs	Approximately 10% preference margin is required to compensate the compliance costs of the Mexican exporters
	Cadot et al. (2005)	The impact of compliance costs of RoO on the border price of textile and apparel products	The border price of Mexican products has risen 12% to compensate the compliance costs of RoO under NAFTA.
	Cadot (2006)	Compliance costs	Approximately, the compliance costs of PANEURO's RoO is 8.0% and that of NAFTA is 6.8% of trade amount

Aspects of RoO	Author	Measures applied	Findings
Uncertainty of RoO	Boadu & Wise (1991)	Case study: US-Israel FTA, US-Canada FTA, NAFTA	Considerable degree of freedom in interpreting the rules causes uncertainty in business sectors.
	Cantin & Lowenfeld (1993)	Case study: US-Canada FTA, NAFTA	Unclear rules or inconsistent interpretation of the rules cause uncertainty
	Commission of the European Communities (2003)	Case study: EU's GSP scheme	Ambiguity of the rules, strict audit, and resulting compliance costs cause uncertainty
	Harris & Staples (2009)	Case study: FTAs in the Latin America/Caribbean and Asia/Pacific	Unclear rules, inconsistent interpretation, the unclear division of the rights and obligations of the producer and the importer cause uncertainty

Table 4: Issues from the administration of RoO

Author	Key Administrative Procedures	Issues
Izam (2003)	Certificate of Origin	Selection of the issuing authorities
	Origin Verification	Unclear procedures for dispute settlement Effectiveness of verification visits, Administrative costs
Brenton & Imagawa (2005)	Certificate of Origin	Compliance costs
	Origin Verification	Administration costs in terms of labor requirements
Estevadeordal et al. (2007)	Certificate of Origin	Administration costs and compliance costs
Manchin & Pelkmans-Balaoing (2007b)	Origin Verification	Compliance costs Stringency of verification procedures
Harris & Staples (2009)	Certificate of Origin Origin Verification	Uncertainty as for the compliance with RoO that is caused due to the unclear division of the rights and the obligation of the producers and the importers

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Notes

- 1 This paper was presented at the Inaugural INCU Global Conference, 21-23 May 2014, Baku, Republic of Azerbaijan.
- 2 Rules of Origin (RoO) are classified as preferential rules and non-preferential rules. Non-preferential RoO are usually applied to impose quotas, countervailing, or anti-dumping duties. Preferential RoO set criteria for determining the eligibility of certain trade preferences. In the current research, 'RoO' refer to the preferential RoO.

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