



# Preferential trade agreements between asymmetric countries: Free trade areas (with rules of origin) vs. customs unions<sup>☆</sup>



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## ABSTRACT

This paper examines differences in welfare implications between a free trade area (FTA) and a customs union (CU) for member countries differing in their market sizes. In a stylized three-country model of trade under oligopoly, we take into account the conditions that FTA members set external tariffs to induce their exporting firms to comply with rules of origin (ROO) within the trade bloc. This approach rules out trade deflection and regime switches in forming an effective FTA. The key findings are as follows: (i) Unless the difference in market size is too large and ROO are too restrictive, an FTA can be welfare-improving to countries with market size differential. (ii) The formation of a preferential trade agreement (either an FTA or a CU) is more likely to emerge between countries of similar market size. However, forming a CU allows for a greater degree of market size asymmetry than forming an FTA. (iii) Compared to the pre-PTA equilibrium, the greater reductions in external tariffs under an FTA than under a CU remain valid even for the case with market size asymmetry and preferential ROO. As such, a non-member country is relatively better off under an FTA. (iv) World welfare is higher under an FTA than under a CU when the market size asymmetry is moderate and ROO are less restrictive.

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## 1. Introduction

Since its first free trade agreement (FTA) with Singapore in 2002, Japan as a major economic power in the world economy has signed FTAs with smaller partners such as Malaysia, Chile, Thailand, Indonesia, Brunei, and Philippines. In reviewing different types of regional trade agreements in the 1990s, Urata (2002, 2005) remarked that if Japan were not actively engage in FTAs, it would not be treated as a worthwhile FTA partner by other countries and could suffer the consequences of being excluded from other FTAs. In analyzing what effects the free trade agreement between Japan and Singapore has on the two partners, Hertel et al. (2001) found that the FTA increased merchandise trade and GDP. The authors estimated that the overall gains from the FTA would exceed \$US 9 billion annually and that Japan would

benefit most from these gains. A recent contribution by Takahashi and Urata (2010) used a questionnaire survey to calculate the utilization rates of FTAs by Japanese firms. The authors found that the utilization rates were rather low: 32.9% for the Japan–Mexico FTA, 12.2% for the Japan–Malaysia FTA, and 23.7% for the Japan–Chile FTA. The authors further identified factors contributing to the surprisingly low utilization rates as follows: (i) the amount of foreign trade between Japan and each of these FTA partner countries is limited, (ii) the approval of the certificate of origin required to use the FTA is difficult, (iii) firms have limited knowledge of FTAs, and (iv) the difference between the Most-Favored-Nation tariff rate and the FTA tariff rate is small. Factor (i) is directly related to economic integration between asymmetric countries differing in their market sizes. Factor (ii) is about potential trade costs associated with preferential provisions such as rules of origin. Factor (iv) is concerned with the magnitude of tariff reductions under an FTA. These important results compel one to look into the theory concerning the economic effects of forming an FTA between countries that differ in their market sizes when there involve changes in trade costs resulting from tariff reductions and the preferential rules of origin.

Will an economy with a fairly large market have an economic incentive to form preferential trade agreements (PTAs) with smaller partners? Under what conditions will PTAs be welfare-improving for both big and small partners? The last two

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decades have witnessed an unprecedented proliferation of trade agreements, which typically take the forms of a “free trade area” (FTA) and a “customs union” (CU). An interesting observation is that countries forming an FTA or a CU are generally different in the sizes of their product markets (World Bank, 2005). In an FTA, member countries collectively eliminate barriers on certain goods traded among them, regardless of whether their market sizes are large or small. But FTA members individually set their own external tariffs toward non-members. This constitutes a significant difference between an FTA and a CU, the latter of which requires member countries to set a common external tariff on imports entering into the union (Krueger, 1993; Krishna and Krueger, 1995; Panagariya, 2000).

There are other distinctive aspects of an FTA. To prevent re-exportation or trade deflection from a low-tariff country to a high-tariff country, FTA members sign in preferential rules of origin (ROO) under which products cannot get duty-free access to a partner’s market unless ROO are met (Grossman and Helpman, 1995; Richarson, 1995).<sup>2</sup> Several different criteria may be adopted. These include ROO based on regional input restrictions, a change in tariff heading, particular processes that should be performed within an FTA, and a substantial transformation of a product.<sup>3</sup> Despite their differences in criteria, there involve “ROO-induced trade costs” in producing final goods eligible for preferential treatment under an FTA. ROO not only generate production inefficiency,<sup>4</sup> they may also cause final-good markets within an FTA to be segmented. These are not the overwhelming factors that make the formation of an FTA unattractive, however. Unlike a CU, an FTA allows member countries to maintain a separate and independent external trade policy. In a CU, there are no preferential ROO provisions and arbitrage activities are relatively costless such that the prices of similar products tend to be uniform across members’ markets. That is, there is internal market integration in a CU. Nevertheless, CU members individually do not have the flexibility in setting their external trade policies.

The objective of this theoretical paper is to examine differences in economic effects and welfare implications between an FTA and a CU when member countries differ in their market sizes. We pay particular attention to the effectiveness and efficiency of an FTA in terms of preferential ROO. Based on a stylized three-country model of trade under oligopoly, we wish to answer a set of questions which appear not to have been adequately examined in the trade literature on FTAs with ROO. Under imperfect competition in product markets, will the formation of an FTA with ROO or a CU be more likely to emerge between countries dissimilar in their market sizes? In other words, how will market size asymmetry affect their economic incentives of forming a PTA (either a FTA or a CU)? Which type of PTAs would allow for a greater degree of market size asymmetry between member countries? What effects preferential ROO have on the welfare of forming an FTA between asymmetric countries? Will

forming a CU be preferred to forming an FTA with ROO, viewed from the welfare perspectives of asymmetric members, a non-member country, and the world as a whole? Our paper is an attempt in the direction of the recent contribution by Krishna (2006), who called for more studies on the economics of ROO in FTAs where product markets are characterized by imperfect competition.

For forming an effective FTA, intra-bloc firms are required to comply with ROO to be eligible for preferential treatment in exports. In analyzing firm behavior in an FTA, Ju and Krishna (2002, 2005) showed the possibilities of trade regime switches because exporting firms may choose not to comply with ROO when the resulting trade costs exceed the external tariff rates. In the present paper, we consider the conditions that external tariffs set by FTA members effectively induce their exporting firms to comply with ROO. This approach rules out trade deflection and regime switches, on the one hand, and helps identify the economic determinants of establishing an effective and welfare-improving FTA with ROO, on the other. This paper is in line with the finding of Krishna and Panagariya (2002) that ROO are required to support the welfare-enhancing FTAs. As for forming a CU, member countries set a common external tariff with respect to non-members. One concern is whether member countries under an FTA with ROO or under a CU set high external tariffs to protect their own firms, which make non-member countries worse off. Article XXIV of the GATT/WTO aims to prevent non-member countries from being hurt by higher tariffs charged by member countries of a trade bloc. We take into account this GATT requirement when determining optimal external tariffs for member countries.

The present study complements the contribution by Mukunoki (2004) in terms of welfare comparisons between an FTA and a CU. The model of Mukunoki does not allow for ROO and their effects on production costs of final goods for trade within an FTA. The author adopts an oligopoly model of product differentiation and shows that an FTA entails endogenous change from segmented to integrated markets for internally produced goods. In our analysis, we take into account the complying decisions of intra-bloc exporters under ROO and look at issues on the effectiveness and efficiency of an FTA. In examining the formation of an FTA, we consider the circumstances that ROO-induced trade costs do not lead to internal market integration. Second, our analysis allows for market size asymmetry between potentially participating members. Despite the absence of internal market integration under an FTA, non-member countries are better off due to relatively lower external tariffs in an FTA than in a CU. However, a non-member country may be negatively affected by a CU when market size asymmetry between CU members is “significantly small.” As such, the external tariff requirement under Article XXIV of the GATT/WTO may be violated.<sup>5</sup> We show that, under plausible conditions, welfare gains to asymmetric member countries are higher in a CU than in an FTA. Not surprisingly, forming a welfare-improving CU allows for a greater degree of market size asymmetry than forming a welfare-improving FTA. Nevertheless, world welfare can be higher under an FTA than under a CU when market size symmetry is moderate and ROO are less restrictive. From the perspective of world welfare, this finding is consistent with the observation that there are more FTAs than CUs (World Bank, 2005).

<sup>2</sup> Grossman and Helpman (1995) examined, among other things, the effects of FTA with ROO that prevent re-exportation from a lower tariff member to a higher tariff member. Richarson (1995) showed explicitly that there is no Nash equilibrium in setting external tariffs, because all members of an FTA compete to set the lowest tariff with respect to non-members.

<sup>3</sup> See, e.g., Thoenig and Verdier (2004), Cadot et al. (2006), and Krishna (2006). The North American Free Trade Agreement (NAFTA), the European Union, and the ASEAN Free Trade Area agreement (AFTA), for example, all contain certain criteria of the ROO provisions which provide preferential treatment for member countries.

<sup>4</sup> See Krishna and Krueger (1995) and Krishna (2006). There are contributions that examine non-preferential ROO content requirements. Falvey and Reed (1998) analyze the cases of non-preferential ROO and indicate that ROO may be used strategically as policy instruments. This is due to the potential arbitrariness in categorizing the geographical sources of goods produced not in a single location. Falvey and Reed (2002) further showed that producers may modify their production processes and input mix in response to ROO content requirements.

<sup>5</sup> Bagwell and Staiger (1997b, 1999), Yi (2000) and Bond et al. (2004) showed that tariff reductions under FTAs are large enough to make the equilibrium external tariffs of member countries below their pre-PTA levels. As such, the optimal external tariffs benefits both members and nonmembers. We show that these findings continue to hold under FTA with ROO, provided that ROO are not too restrictive. We show that non-member countries are worse off under a CU, despite that the union’s common external tariff is consistent with Article XXIV of the GATT/WTO. This is consistent with the findings of Kennan and Riezman (1990), Yi (2000), Bagwell and Staiger (1997a), Syropoulos (1999) and Kose and Riezman (2000).

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