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Trade liberalization and welfare: Differentiated-good versus homogeneous-good markets

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ABSTRACT

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In this paper, we examine the effects of liberalization on industrial location and national welfare in a framework of new economic geography. Specifically, we explicitly incorporate arbitrary trade costs in both differentiated-good and homogeneous-good sectors into a two-country model, and clarify the effects of trade-barrier reduction in each sector. We show that their impacts on welfare levels in the two countries are different, and, if an industry is liberalized while the other is protected, a conflict between the countries might occur. Therefore, appropriate liberalization in both sectors is effective to alleviate such a conflict. *J. Japanese Int. Economies* **26** (3) (2012) 308–325. Graduate School of Management, Kagawa University, Saiwai-cho 2-1, Takamatsu, Kagawa 760-8523, Japan; Graduate School of Information Sciences, Tohoku University, Aoba 6-3-09, Aramaki, Aoba-ku, Sendai, Miyagi 980-8579, Japan; Center for Research of Private Economy, Zhejiang University, Zheda Road 38, Hangzhou, Zhejiang 310027, China.

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1. Introduction

In this paper, we examine the impacts of trade liberalization on industrial location and national welfare in a framework of new economic geography (NEG) (Fujita et al., 1999; Baldwin et al., 2003).

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Specifically, we explicitly incorporate arbitrary trade costs in both differentiated-good and homogeneous-good sectors into a two-country model, and clarify the effects of trade-barrier reduction in each sector. We show that reducing the trade barrier in the homogeneous-good sector has a different impact on the welfare levels in two countries from reducing the trade barrier in the differentiated-good sector.

According to Article XXIV of the General Agreement on Tariffs and Trade (GATT), all free trade agreements (FTAs) should aim to eliminate duties and other restrictive regulations of commerce on substantially all the trade among participating countries. However, in real FTAs, some industries are often protected. For example, the United States excluded about 100 items (e.g., sugar and dairy products) from the liberalized list of a US–Australia FTA in 2005. In addition, Japan carefully protects the agricultural market by imposing high tariffs and is very reluctant to join the Trans-Pacific Partnership (TPP). These facts indicate the necessity to examine *how a country's welfare level changes if some industries are liberalized while others are protected*.

Trade costs include various barriers to trade. In addition to formal regulations such as tariffs, the technical barriers to trade (TBT) are also significantly restrictive. In particular, country-specific product standards have the potential to keep foreign producers out of domestic markets by imposing adaptation costs (Fischer and Serra, 2000; Gandal and Shy, 2001), while internationally shared standards (e.g., International Organization for Standardization (ISO)) are expected to promote trade (Swann et al., 1996). Interestingly, an empirical result of Moenius (2004) shows country-specific standards having different impacts on the trade pattern. Although they tend to inhibit trade in non-manufactured goods such as agriculture, they promote trade in manufactured goods.

Turning to theoretical trade studies, since Krugman (1980), the literature of NEG successfully clarifies that industrial location is strongly related to trade costs.¹ However, most NEG papers focus on the positive aspects, particularly the home market effect (HME), rather than the welfare issues (Davis, 1998; Head and Ries, 2001; Head et al., 2002; Ottaviano and Thisse, 2004; Yu, 2005; Crozet and Trionfetti, 2008; Zeng and Kikuchi, 2009). Some studies have focused on the gains and losses from trade; however, the comparisons are limited to completely free-trade economies with entirely autarky economies (Krugman, 1981; Venables, 1987). Furthermore, since Helpman and Krugman (1985), most NEG papers (e.g., Krugman and Venables, 1990, 1995; Baldwin and Venables, 1995) impose an assumption of free trade on the homogeneous good. Although this convenient assumption makes the analysis of the differentiated-good sector much easier, it has two theoretical defects. First, if the two countries have identical technology in the homogeneous-good sector, the wages in the two countries are equalized under this assumption, failing to capture the wage gap between countries. Baldwin and Robert-Nicoud (2000) showed the reduction of frictional barriers between asymmetric-sized nations improving the welfare of both nations when wages in the two countries are equalized by the free-trade assumption in the homogeneous-good sector. It is uncertain if their result remains true when a wage gap is possible. Second, it becomes impossible to examine the integration of the homogeneous-good markets under this assumption.

The importance of transport costs in the homogeneous-good sector was first recognized by Davis (1998), who showed that the HME of Helpman and Krugman (1985) disappears if the homogeneous good is transported with the same positive cost as the differentiated goods. Fortunately, their model can be used in our research. We maintained the structure of two asymmetric-sized countries, one production factor (labor), and two sectors, in which arbitrary trade costs were allowed in both sectors. This made it possible to compare the integration of the differentiated-good and homogeneous-good markets. Furthermore, we were able to analyze the effects of integration on welfare at an arbitrary level of trade costs. Thereby, we clarified *when and which market integration produces (or does not produce)* a conflict between the two countries.

To the best of our knowledge, the equilibrium analysis of the Helpman–Krugman–Davis model is incomplete. While Helpman and Krugman (1985) focused on the case of free trade in the homogeneous-good sector, Davis (1998) mainly considered the case of equal trade costs in the two sectors. The case of arbitrary trade costs in the homogeneous-good sector remains unclear. Therefore, before the welfare analysis, we rigorously re-examined the equilibrium of industrial location and wage for arbitrary trade costs in the two sectors.

¹ Fujita and Thisse (1996) is a comprehensive review of theories of agglomeration economies.

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