



The effects of regional trade agreements on FDI by its origin and type: Evidence from U.S. multinational enterprises activities



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ABSTRACT

The effects of regional trade agreements (RTAs) on foreign direct investment (FDI) depend on both the origin and type of FDI. To estimate the various effects of RTAs, I differentiate between various types of FDI by using data on the sales destinations of foreign subsidiaries of U.S. multinational enterprises (MNEs), while also addressing the endogeneity of RTA formation. Consistent with the theory of MNEs, I find that RTAs reduce horizontal FDI from intra-RTA countries and increase export-platform and total FDI from extra-RTA countries. Moreover, the overall effects of RTAs are positive for extra-RTA FDI, but inconclusive for intra-RTA FDI. The results also support the effect of integrated markets' economies of scale in inducing extra-RTA FDI.

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1. Introduction

An increasing number of regional trade agreements (RTAs) have been concluded since the mid-1990s. Between 1948 and 1994, 123 RTAs were notified to the General Agreement on Tariffs and Trade (GATT), and since the creation of the World Trade Organization (WTO) in 1995, over 300 additional RTAs have been notified.¹ RTAs have proliferated in recent years partly due to the lack of progress in the Doha Round of WTO trade negotiations and partly because conducting negotiations between two or more like-minded countries is relatively easier and faster than concluding multilateral trade agreements.

RTAs influence not only trade flows but also investment flows from member countries and non-member countries. This paper investigates the impacts of RTAs on foreign direct investment (FDI). These impacts, however, are not as straightforward as they may first appear, because they depend not only on the origin of FDI (member or non-member countries) but also on its type. I consider three types of FDI. Horizontal FDI is a market-seeking investment, in which a multinational enterprise (MNE) builds plants in multiple countries to produce the same goods serving local

markets by local production. Vertical FDI is the international fragmentation of production process by the division of labor. For instance, a vertical MNE in a developed country exports capital or skilled-labor-intensive parts to an assembly plant in a low-wage country and re-exports most of the outputs for sale back home (Markusen, 2002; Hayakawa and Matsuura, 2011).² Export-platform FDI occurs when an MNE establishes foreign subsidiaries to export final goods to third countries other than the home country.

Consider the effects of RTAs on FDI from member countries, i.e., intra-RTA FDI.³ Because the markets of member countries are

² The two-country vertical FDI is known as "pure vertical FDI" in the literature. Vertical FDI differs from broadly defined "complex vertical FDI", which involves more than two countries for division-of-labor fragmentation of production process (Yeaple 2003; Hayakawa and Matsuura, 2011). Due to data limitation, I cannot consider complex vertical FDI in this study.

³ Comprehensive theoretical discussion on the effects of RTAs can be found in Subsection 4.2.

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¹ See http://www.wto.org/english/tratop_e/region_e/regfac_e.htm.

integrated by RTAs, firms can serve those markets simply by exporting instead of investing. In other words, firms within the RTA have fewer incentives to invest to jump over trade barriers in the partner countries. Therefore, market-driven or horizontal FDI from member countries is likely to decrease in response to RTA formation.⁴ On the other hand, if FDI is motivated by cheaper production costs, i.e., vertical FDI, then it tends to increase because firms want to take advantage of zero tariffs on parts and intermediate goods by establishing plants in member countries. In addition, these firms can re-export finished goods back to the home country without tariffs.

Consider the case of FDI from non-member countries, i.e., extra-RTA FDI. RTAs may not only reduce transaction costs for member countries but also facilitate economies of scale in production, because firms outside the RTA can serve the entire RTA market. Therefore, RTAs are likely to induce MNEs outside the RTA to switch their regional market strategies from exporting to investment, which suggests that the impacts of RTAs are positive for horizontal and export-platform FDI from non-member countries.

In this paper, I empirically assess the effects of RTAs on FDI by its origin and type. For this, I employ panel data on the sales activity of foreign subsidiaries of U.S. MNEs and differentiate between various types of FDI by exploiting data on the sales destinations of these foreign subsidiaries. I treat local sales of foreign subsidiaries as horizontal FDI, sales back to the U.S. as vertical FDI,⁵ and sales to third countries as export-platform FDI. I classify the origin of FDI based on whether the host country is a participant in an RTA involving the U.S. (the home country) or not: intra- or extra-RTA FDI. For estimation purposes, I employ the within estimator and the instrumental variable (IV) method proposed by Hausman and Taylor (1981) to take into account the endogeneity of countries' RTA formation decisions.

The results show that, in line with the theory of MNEs, the impacts of RTAs on FDI indeed vary according to its origin and type. Intra-RTAs reduce horizontal FDI, but extra-RTAs increase export-platform FDI. In addition, regardless of the type of FDI, the overall effects of RTAs are positive only for extra-RTA countries. Also, the integrated market size of RTAs has positive effects on export-platform and total FDI from extra-RTA countries, which is supportive for economies of scale of the integrated markets.

The rest of this paper is organized as follows. Section 2 overviews the previous research. Section 3 describes the data. Section 4 presents the empirical model, provides theoretical predictions regarding the effects of RTAs, and discusses the estimation strategy. Section 5 presents the empirical results, and Section 6 concludes.

2. Literature review

In one of the earliest studies on the effects of RTAs on FDI, Blomström and Kokko (1997) present a conceptual framework, examine some case studies of regional integration and argue that the responses of FDI to a trade agreement depend on environment changes brought by the agreement and location advantages of

participating countries and industries. Since then, several studies have examined the effects of RTAs on FDI theoretically, empirically, or both. In the following description, I review past research on intra- and extra-RTA effects in turn.

Yeyati et al. (2003) and Jang (2011) focus on intra-RTA effects. Yeyati et al. (2003) use data on bilateral FDI stocks from the OECD International Direct Investment Statistics, which cover FDI from 20 OECD countries to 60 host countries from 1982 to 1998. They find that a common free trade agreement (FTA) or RTA membership between home and host countries increases intra-RTA FDI stock, that the extended size of the host market through an RTA increases intra-RTA FDI, and that the extended size of the home market reduces FDI when the home country joins an RTA to which the host country does not belong. However, they do not characterize various types of FDI in the analysis.

Jang (2011) uses data on bilateral FDI stocks for 30 OECD and 32 non-OECD countries for the 1982–2005 period but differentiates between horizontal and vertical FDI by grouping intra- and extra-OECD country pairs. He finds support for the hypothesis that RTAs reduce FDI in intra-OECD country pairs but increase it in extra-OECD country pairs because horizontal FDI is dominant in the former, but vertical FDI in the latter. Because of the use of bilateral data, he can consider only intra-RTA effects in the analysis.

Turning to the literature on extra-RTA effects, Motta and Norman (1996) examine the effects of economic integration on oligopolists' international trade and investment and show that a decrease in the intra-regional tariffs in a free trade area may induce firms outside the area to switch their regional market strategies from exporting to investment, that is, horizontal and export-platform FDI. Neary (2009) shows that horizontal type of FDI in trading blocs is encouraged by intra-bloc trade liberalization, because MNEs set up export-platform plants in a member country to serve the bloc as a whole.⁶ He argues that this finding can help to resolve the paradox that FDI grew much faster in the 1990s than trade even though trade costs fell sharply due to trade liberalization and market integration.

Ekhholm et al. (2007) develop a three-country model and consider both intra- and extra-RTA effects on FDI. They find that a free trade area between one of two northern countries and one southern country can induce an intra-RTA northern firm to choose "home-country export-platform" FDI (exporting to the home country from a foreign subsidiary in the southern country) and an extra-RTA northern firm to select "third-country export-platform" FDI (exporting to the other northern country) for a range of parameter values.⁷ Their empirical findings verify this outcome, but they find that being located in North America or Europe has a greater effect than gaining formal entry into the North American Free Trade Agreement (NAFTA) or the European Union (EU). As in the current study, Im (2012) uses sales data of foreign subsidiaries of the U.S. MNEs and finds that RTAs increase FDI inflows from the U.S. and that the extended market size of RTAs positively affects FDI. He also finds that FDI does not always increase with the market size of RTAs: as the market size of RTAs increases, FDI rises only for RTAs with a large market size. However, he does not distinguish between various types of FDI in the analysis.

Compared with the above mentioned studies, the present paper contributes to the literature by differentiating between various types of FDI based on its origin and type and by investigating the differential effects of RTAs on FDI in a unified framework.

⁴ It is also possible that the relationship between RTAs and horizontal FDI is complementary. Most RTAs, particularly RTAs signed by the U.S., include the provisions of investment facilitation and liberalization, and such provisions may promote intra-RTA FDI including horizontal FDI (Lesher and Miroudot, 2006). Furthermore, as horizontal FDI also entails intra-firm trade or trade in intermediate goods between home and host countries (Irarrazabal et al., 2013) and RTAs reduce trade costs, they may increase horizontal FDI from member countries.

⁵ Data of sales to the U.S. do not distinguish between sales of intermediate goods to the parent firm and sales of final goods to other firms. In this regard, the current dataset has the limitation of defining vertical FDI type.

⁶ This argument is essentially about export-platform FDI according to this paper's classification of FDI.

⁷ Based on this paper's classification of FDI, the former is vertical FDI from an intra-RTA country, whereas the latter is export-platform FDI from an extra-RTA country.

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