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### China Economic Review



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#### 1. Introduction

#### ABSTRACT

Why do many of the world's most productive firms prefer global outsourcing to FDI? To address this issue, this paper introduces an intermediate-good producer to Antràs and Helpman's (2004) North–South model, where the Northern firms can employ the producer *via* an outsourcing contract and have the producer engage in FDI in the South. This strategy could substantially reduce both the incomplete contract distortion and the associated tailoring cost if the intermediate-good producer shares ethnic heritage with the South. Then, the most productive firms, not only in the consumer electronics but also the labor-intensive industries, overwhelming-ly apply this strategy rather than FDI.

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In 2003, China overtook the United States to become the largest recipient country of foreign direct investment (FDI). However, with over 90% of global FDI originating in industrialized countries (UNCTAD, 2000), it is striking that the majority of FDI to China did not come from the industrialized countries but from non-resident Chinese, especially from Hong Kong and Taiwan.<sup>1</sup> As shown in Table 1, these non-resident Chinese contributed more than two thirds of the FDI inflows to China during 1991–97, which were primarily export-oriented and intended for exports to the markets of advanced economies (Lo & Liu, 2009). Why then, being the major consumers in the world, did the industrialized countries play only a minor role in FDI to China, which is well known as the factory of the world? Why did those non-resident Chinese regions such as Taiwan, Singapore and Hong Kong act as intermediate-good producers rather than brand-name players, contributing the lion's share of FDI in China? We argue that it is the degree of incomplete contract distortion which differs among these countries leading to the prevalence of this triadic trade.

The ability to communicate effectively with offshore providers is essential to the success of offshore activities. A contract with an offshore provider without any local assistance could not only be costly but also devastating, especially when the countries that are involved have different cultures and speak different languages (Ahn, Khandelwal, & Wei, 2011). Therefore, employing an intermediate-good producer who shares the same culture, language and general rules of etiquette with the offshore provider can significantly reduce the incomplete contract distortions.







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<sup>&</sup>lt;sup>1</sup> Hong Kong is the largest source of FDI in China and Taiwan is the fourth largest (Zhang, 2005).

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 Table 1

 FDI from non-resident Chinese-speaking regions in China (in billion U.S. dollars).

Source: the FDI data is from World Bank, 2008 while data of the non-resident Chinese-speaking regions (NRC) FDI is from UNCTAD, 2000.

Year	Total FDI	NRC FDI	NRC/FDI	Adj. FDI	Adj. NRC	Adj. NRC/FDI.
1991	4.37	3.11	0.71	3.28	2.02	0.66
1992	11.01	8.85	0.80	8.26	6.10	0.74
1993	27.51	22.81	0.83	20.64	15.93	0.77
1994	33.77	26.33	0.78	25.32	17.89	0.71
1995	37.52	27.05	0.72	28.14	17.67	0.63
1996	41.73	28.91	0.69	31.29	18.48	0.59
1997	45.26	29.40	0.65	33.94	18.09	0.53

Note: Adj. FDI inflow has been adjusted by deducting 25% for round-tripping FDI while the Adj. NRC has been adjusted by deducting FDI \* 0.25.

The World Bank estimates that about 20–30% of FDI in China was due to the round-tripping investment through Hong Kong (Wei, 2005) that originated from China for favorable tax. Taking the average, we adjust the FDI by deducting FDI inflow by 25% for "round-tripping" investment, and this amount of "round-tripping" investment should also be deducted from the NRC FDI.

Theoretically, Helpman, Melitz, and S.R. (2004) argued that the most productive firms prefer FDI to arms-length trade when faced with a trade-off between proximity and concentration. Antràs and Helpman (2004) introduced the incomplete contract concept to extend the model of Helpman et al. and demonstrated that the most productive firms in skill-intensive industries prefer FDI and the less productive firms prefer international outsourcing. They all conclude that the most productive firms prefer FDI in choosing their global organization.

However, practically, the strategy of international outsourcing is apparently more prevalent than FDI among the world's most productive firms, such as Apple, Microsoft, Sony, Nokia, and Hewlett-Packard. For example, Apple designed most of the system architectures for the iPod in-house, but simultaneously outsourced more than 99% of the iPod's intermediate inputs to the low-wage Asia– Pacific region (Einhorn, 2007). A similar pattern applies to other consumer electronics industries in particular, including the game consoles developed by Microsoft and Sony, the personal computers made by Dell and Hewlett-Packard, and even software programs designed by Electronic Arts. It should be noted that all of these outsourcing activities share a common mechanism: the Northern firms generally contract with an intermediate-good producer using an international outsourcing contract and subsequently direct the producer to engage in FDI in the South to produce their manufacturing inputs. As a result, the assembly of the final-goods that are originally invented by the North is generally completed in the South's factories, which are owned or overseen by the intermediate-good producer; the North does not directly engage in FDI in the South.

These intermediate-good producers generally come from Chinese-speaking countries, such as Taiwan, Hong Kong and Singapore, and are specialized OEM (Original Equipment Manufacturing) or EMS (Electronics Manufacturing Service) providers that provide customized manufacturing inputs for the Northern firms.<sup>2</sup> For example, Foxconn is a Taiwan-based firm with large scale production facilities located primarily in China where it manufactures the Wii for Nintendo, the Xbox for Microsoft, the iPod for Apple, cell phones for Nokia, and computers for Hewlett Packard, among other items.<sup>3</sup> Another example is the Singapore-based firm Flextronics, a direct competitor of Foxconn, which is also a specialized contract manufacturer of electronics goods with large production capacities in China. On one hand, these intermediate-good producers help the Northern firms take advantage of not only the low wage cost in the South but also the scale of economies in the fixed cost investment while they usually own unrivaled economies of scale in manufacturing abroad. On the other hand, this strategy helps the Northern firms reduce not only the incomplete contract distortion abroad but also the associated tailoring efforts in the relationship-specific partnership due to the advantage of the intermediate-good producers' ethic linkage with the South.<sup>4</sup> As a result, many of the world's most productive Northern firms may prefer to contract with an intermediate-good producer *via* an international outsourcing contract when launching their most innovative products rather than contract directly with the South by FDI.

In this paper, we introduce the intermediate-good producer in the middle country to Antràs and Helpman's (2004) North–South model, where the middle country shares the same language and cultural heritage with the South while the North does not. In this three country model, the incomplete contract distortion would be less pronounced if the offshore activities were to be undertaken by the intermediate-good producer rather than by the Northern firm. In this manner, it creates rent for both the Northern firms and the intermediate-good producer to appropriate. As a result, the Northern firms may contract with the intermediate-good producer er for the production of its manufacturing inputs and have the intermediate-good producer engaged in the production in the South through FDI.

<sup>&</sup>lt;sup>2</sup> The business model for the EMS industry is to specialize in economies of scale in manufacturing, raw materials procurement and pooling together resources, as well as industrial design expertise; the specification is particularly the case in the consumer electronics industry. The services from EMS frees up the customers who do not need to manufacture and maintain huge inventories of products. Therefore, the customers can respond to sudden spikes in demand more quickly and efficiently (Luthje, 2002).

<sup>&</sup>lt;sup>3</sup> According to iSuppli's rankings for 2005, Foxconn was the largest global EMS provider and Flextronics was the second.

<sup>&</sup>lt;sup>4</sup> The role played by Hong Kong and Taiwan firms has been well documented by Sung (1991) and Liu and Tung (2007), respectively. For example, Sung (1991) has documented that, following China's inauguration of her open-door policy in 1989, Hong Kong has played the role of intermediary between the world and China both in its commodity and services trade. Note that these firms in Hong Kong are more than pure intermediaries while most of them have manufacturing establishments in China, in which they not only provide labor services such as assembling but also generic components by themselves.

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