Feature Article

Re-examination of FDI in emerging economies

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1. Introduction

Foreign Direct Investment (hereafter referred to as FDI) is the investment made to acquire a lasting interest in, or effective control over, an enterprise operating outside of the economy of the investor.(1) As pointed out by existing literature, FDI benefits both investing and invested countries. It plays an indispensable role in an open and effective international economic system, and is a major factor in promoting economy in developing countries. Thus, attracting FDI has become an important task for the government of these countries. However, the quote by P. J. O'Rourke (2) describes a vivid situation that while FDI can help developing countries in certain ways, it might have a negative impact on the original nations where the foreign investors come from. The heterogeneous impact that FDI may bring about among different countries serves as the starting point of my overall study: what determines FDI in the developing world and what influence does it have on the invested countries?

In reality, the policy makers are usually interested in country-specific phenomenon. For example, why is China so attractive to multinational companies? What are the main factors to attract FDI into China? Why is Vietnam becoming one of the most popular FDI destinations in the world? What benefits will the inward FDI into Vietnam bring about? And will negative consequences come along? To provide possible answers to these questions, the book entitled "Re-examination of FDI in emerging economies" investigates the before and after FDI processes in the context of developing countries, and provides hands-on evidence. As seen from Figure 1, firms can choose to produce at home, export or make foreign direct investment based on their initial productivities.(3) In the context of FDI, the existing literature can be divided into two categories by chronicle order, represented by process 1 and 2 respectively.

Before the investment, macro factors such as the business environment (infrastructure) and level of economic development (country or city size, GDP per capita), whereas policy-based determinants such as tax exemption programs and investment promotion institutions are thought to play an important role in inviting FDI. In particular, I pay special attention to the efficiency of such policy strategies and investigate their effects on attracting FDI in the case of China.

The second half of the book is concerned about how FDI can affect the targeting country from various aspects, as indicated

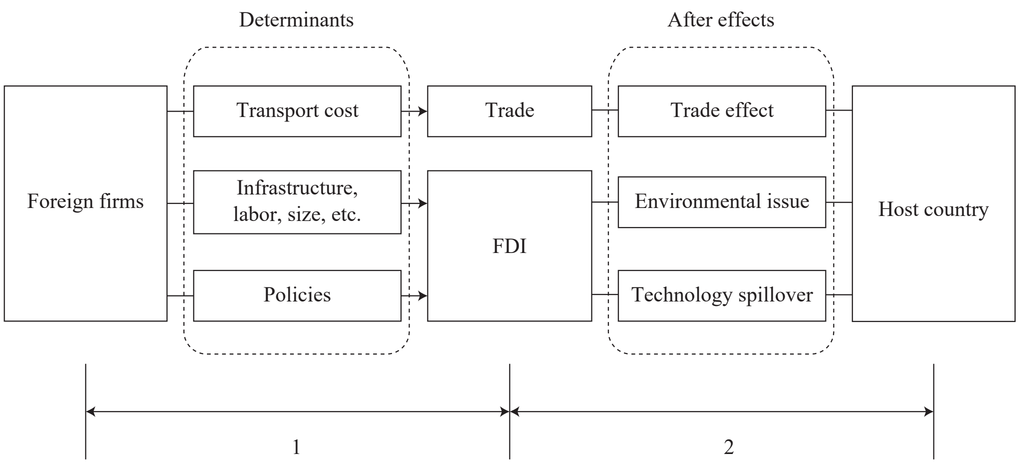

Figure 1: Concept flow about FDI-related studies

in process 2. Using the case of Vietnam, I explore mainly two types of impacts of FDI:

- Technology spillover,[4] which is thought to be a major vehicle for economic growth of the developing countries.
- Environmental problems in the host country that FDI might incur.

The summary of each chapter is given as follows.

2. Impact of investment promotion agencies in China on FDI

As aforementioned, how to attract FDI has been a major task for the governments of many developing countries. Under such circumstances, numerous policy tools have been utilized to facilitate investment by foreign firms. Although an increasing number of studies have investigated the impact of these tools using macro-level data, the rigorous evaluation of this issue has been hampered by limited data availability. This chapter aims to enrich the empirical studies on such policies by objectively evaluating the role of investment promotion agencies (hereafter referred to as IPAs) in the Chinese context. IPAs are relatively recent strategic endeavors used by governments to supplement foreign firms' investment in the host country. The purpose of IPAs is defined as "to communicate to foreign investors the nature of the country's investment climate and to persuade and assist these investors to invest or reinvest in the country" (Alvin, 1993). The expected function of IPAs is different from that of the existing strategies, such as special economic zones (SEZs), which use policy packages such as tax incentives and property protection to attract FDI.

To investigate the causal relationship between the existence of investment promotion agencies promote and inward FDI, I use both firm- and city-level data from the Chinese National Bureau of Statistics and unique information on IPAs in China to evaluate whether IPAs affect FDI from the perspectives of both intensive and extensive margins, i.e., re- investment of incumbent foreign-owned firms and new FDI inflows into the city, respectively. After controlling for the determinants of FDI and correcting for potential estimation biases, I find that IPAs in general do not necessarily increase FDI in either case. However, IPAs are found to promote the re-investment of large foreign-owned firms. The results thus illustrate the difficulty in dissemination of information on the business environment to foreign investors.

3. Impact of foreign investors' origin on the degree of technology spillover

Recent empirical studies using firm-level data have investigated the mechanism as to how foreign direct investment incurs technology spillover [5] to domestic firms through both horizontal and vertical linkages. Among the studies that explore the channels of technology spillover, there have been a number of them to investigate how the origin of FDI might have heterogeneous influence on domestic firms' productivity. The targeting home countries of investigation consist of EU, the US and China, but none of them has ever focused on the case of South-East Asia.

This chapter attempts to fill the blank by studying the origin channel in the context of Vietnam. Vietnam serves as a good example for such verification due to several reasons. First, studies that examined the technology spillover effect of FDI on firms in newly emerging economies have been limited. Second, compared to China, Vietnam has been positioned as a new investment target in Asia. Its FDI inflow keeps rising in recent years and the development is undergoing a transitional period towards a market-driven economy. Foreign investors crowd into Vietnam in pursuit of cheap labor and huge business margin. Third, the average productivity of Vietnamese firms is still far behind that of foreign investors, thus there is great room for domestic firms in Vietnam to catch up. As far as I know, this is the first one to investigate the real mechanism of how the origin will matter for the technology spillover effect of FDI—sourcing pattern, or the local procurement level through which the backward vertical spillover is most likely to occur.

The decomposition of firms from different investing countries is another issue that we need to deal with in this study. For example, with their close partnership with Vietnam and their notable penetration in the Vietnamese economy, FDI from East Asian countries are expected to affect more local firms' performance than that from Europe and other regions. Furthermore, there may be a significant difference in FDI spillover even among those major investor countries as they are thought to vary in relationship with Vietnam in terms of investment treaties, and trade agreements which can affect sourcing patterns of investors. Thus, an analysis of FDI spillover with meaningful disaggregation of FDI's origins is necessary to better understand the systematic tendencies in FDI spillover.

In practice, I use firm-level panel data from Vietnam in 2002-2011 to conduct the empirical analysis. To be specific, I use geographical distance, whether being a member of the regional preferential agreement [6] and sourcing pattern as the criteria to examine the differences in technology spillover.

The results show a positive association between the presence of Asian firms in downstream sectors and the productivity of Vietnamese firms in the supplying industries, and no significant relationship in the case of European and North American affiliates. Within the Asian region, I find that FDI from East Asian firms excluding Japan and South Korea tend to have the largest vertical spillover impact on increasing Vietnamese suppliers' productivity. It coincides with the fact that multinational firms whose origins are these two countries tend not to source from local suppliers actively. In the horizontal way, FDI from the ASEAN, East Asian and European firms all show a negative impact, indicating that FDI from these firms tends to drive Vietnamese counterparts away. Also, I find that firm size and location affect the extent of spillover.

4. The effect of FDI on the environment in Vietnam

Deviating from the previous contents, in another two chapters, I explore the environment-related issues that are associated with FDI. What is the potential environmental problems that FDI can bring about? I examined the possible causal relationship between FDI and environmental problems the country from a different perspective after investigating the positive impact of FDI on the economic development of the host country.

Given the simultaneous rise in FDI and pollution level, critics have accused foreign investors of shifting their heavily-polluting activities to countries with lax regulations in search of "pollution-haven", however, empirical evidence to support this hypothesis is surprisingly rare.(7) In fact, foreign firms are found to be more energy efficient compared to state-owned firms.(8) This might be due to the advanced waste-processing technology adopted by foreign firms and their stance to achieve corporate social responsibilities.(9)

To solve this puzzle, I focus on firms' participation in ISO14001, a voluntary environmental standard which measures how "green" a firm is. This to some extent captures how much awareness that a firm has to be engaged in environment-friendly activities. A general equilibrium model is applied to theoretically show the mechanism of adoption: under optimal conditions, highly productive firms can benefit more from the adoption. In the meantime, technology advancement potentially drives up the capital intensity of the firms, and this factor will promote firms' incentive of adoption as well. Also when controlling for firms' idiosyncratic characteristics, foreign firms become more active to acquire ISO14001. The empirical analysis using the firm-level data in Vietnam verifies my predictions with robustness. In addition, I find that the phenomenon outlined above becomes even more obvious in the manufacturing sectors. Thus, the foreign firms are making more efforts towards corporate social responsibility, only conditional on the expectation of a larger long-term profit.

5. Impacts after a company implements ISO 14001

Conditional on the notion that FDI firms are more energy efficient compared to state-owned firms through the channel of either technology advancement or a higher awareness of corporate social responsibility, we are curious about the following questions: What is the post-influence after firms adopt ISO14001? Have the company achieved environmentally friendly results since the implementation of ISO 14001?

In the last chapter, I apply the firm-level data in Vietnam to show that the adoption of such voluntary standard can improve a firm's performance in terms of waste control, and increases its welfare and productivity level. It differs from the previous literature in several ways. First, it is the first study to use panel data to explore how firms' participation in voluntary programs affects pollution behavior in Vietnam, thus filling the gap in the literature on developing countries. Second, the measurement employed in this study is based on multiple indices such as discharge of solid, liquid and air waste, instead of just one. Finally, to mitigate the endogeneity issue, we further use both instrumental variable method and propensity score matching to verify.

The results show that foreign firms are more likely to adopt ISO14001. Furthermore, such adoption affects firms' overall performance in terms of reducing their waste discharge and improving their turnover and productivity. The findings are in accordance with most of the existing literature, and thus provide robust evidence that firms' efforts toward corporate social responsibility eventually benefit themselves as well.

The results also have their policy implications. Vietnam is undergoing a rapid economic transition. However, this growth comes with a price, namely, environmental pollution, which is an important issue that the Vietnamese government has to deal with. We hope the findings presented here can offer decision-makers some guidance in terms of implementing efficient policies to protect the environment. For example, such policies could further encourage ISO14001 adoption and call on more firms to participate in voluntary environment programs in order to realize the real benefits of doing so.

6. Last but not least

This book is only a glimpse into the sea of FDI-related literature in the context of developing nations. There are many more topics that still need to be ventured. For example, how does inward FDI affect the local labor market? Does it lead to skill income gap? How does outward FDI such as Japanese firms' oversea expansion influence the labor reallocation at home? Do firms always experience product upgrading or product differentiation, if they decide to go abroad? Some of the studies towards these questions are already under way and I will leave the remaining issues for my future study.

Readers of this book can range from policy makers in developing countries to the undergraduate students whose study interest lies in foreign direct investment in developing countries, and its influence. After reading this book, you can have a thorough and intuitive idea of how the strategic policies are made to attract FDI, and how inward FDI affects the economy of the developing countries from various aspects, such as technology spillover and environmental issues.

Notes

(1) The United Nations.

(2) The original quote is: "Chinese economic development has cost many American workers their jobs. That's the price of progress".

(3) Melitz, M. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, Vol. 71, 1695-1725.

(4) A phenomenon in which the benefits spread to other areas that do not pay the benefit costs.

(5) In the context of economics, technology spillover refers to the beneficial effects of new technological knowledge transmitted from one party to the other.

(6) The preferential treaty is the agreement that provides differentiated preferential treatment for some items in trade between specified countries.

(7) Cole, M. A. (2004). Trade, the pollution haven hypothesis and the environmental Kuznets Curve: Examining the linkages. *Ecological Economics*, Vol. 48, 71-81.

(8) Eskeland, S. G. and Harrison, E. A. (2003). Moving to greener pastures?: Multinationals and the pollution haven hypothesis. *Journal of Development Economics*, Vol. 70, 1-23; He, J. (2006). Pollution haven hypothesis and environmental impacts of foreign direct investment: The case of industrial emission of sulfur dioxide (SO2) in Chinese provinces. *Ecological Economics*, Vol. 60, 228-245.

(9) Lyon P. T. and Maxwell, W. J. (2008). Corporate social responsibility and the environment: A theoretical perspective. *Review of Environmental Economics and Policy*, Vol. 1, 1-22.