Economic Modelling 44 (2015) 1–6

Contents lists available at ScienceDirect

Economic Modelling

journal homepage: www.elsevier.com/locate/ecmod

Patent rights protection and foreign direct investment in Asian countries

Judy Hsu *, Yu-En Tiao

Department of International Trade, Feng Chia University, Taiwan

ARTICLE INFO

Article history:
Accepted 22 August 2014
Available online xxxx

Keywords:
PRs protection
FDI

ABSTRACT

Patent rights (PRs) protection has acquired an important role in the new knowledge-based global economy, and it has been an essential policy issue for a number of years. Many previous papers have examined how PRs protection affects international trade, but there is lack of study on the relationship between PRs protection and foreign direct investment (FDI). According to the active FDI activities in Asia, this paper conducts a research from 1985 to 2010 to completely investigate the relationship between PRs protection and inward FDI in eleven main Asian countries by adopting Ordinary Least Square (OLS) and System Generalized Method of Moments (System GMM). The empirical results indicate that strengthening PRs protection in host countries can increase Asian countries' FDI inflows. Moreover, different country characteristics might make distinctive influences on inward FDI.

1. Introduction

Patent rights (PRs) protection of intellectual property rights (IPRs) has acquired an important role in the new knowledge-based global economy. The earliest PRs system was the Venice Patent Law of 1474. Since patent regimes regulate the creation and international transfer of new products and processes, changes in PRs protection can have profound effects on global economic efficiency and income distribution between innovating advanced countries and imitating developing countries. IPRs reform has been underway since the 1990s and actively pursued by most developing countries after the World Trade Organization's (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) came into effect on January 1, 1995. Under the terms of TRIPS, current and future members of WTO must adopt and enforce strong non-discriminatory minimum standards of intellectual property protection in each of the areas commonly associated with IPRs (as embodied in patents, copyrights, trademarks, and trade secrets).

The institutions of intellectual property protection of new technologies that countries adopt generally do reflect the significance of this distinction. Traditionally, developing countries have established weaker regimes favoring technological diffusion through imitation and acquisition from abroad. For example, although it rose as a global star in science and technology in the 1980s, Japan was a major source of international counterfeit goods in the 1960s. In contrast, the developed countries have long promoted the idea of stronger intellectual property protection throughout the world so as to improve incentives for private agents to create and advance technology and, not coincidentally, for their own inventors to extract greater returns from their discoveries. A major part of this campaign has been an effort by developed countries to secure the harmonization of patent systems across countries through bilateral, regional and international agreements, and they often contend that a strengthening of patent protection would be good even for developing societies, through stimulating more domestic production of inventions as well as by attracting more foreign investment to them. Nonetheless, developing countries have been less than enthusiastic in embracing the argument that strong patent protection would have positive long-term effects on the rate of technological change and social welfare. An increase in patent protection in developing countries may raise the prices (and the levels of royalties flowing out of the society) of goods and services produced with technologies developed abroad and decrease the rate of technological diffusion. There is, moreover, little evidence supporting the view that stronger PRs would stimulate inventive activity. Divisions between developed and developing countries over IPRs have, as a result, widened in recent years.

Under pressure from developed countries and often in conjunction with concessions from them about opening up their domestic product markets to more imports, many developing countries have begun to strengthen their intellectual property systems, particularly as regards patents. These changes in policy provide us with an opportunity to learn more about the effects of intellectual property institutions in developing countries. In the past two decades, the nature of the linkages between PRs and international trade has been the source of much debate and controversy. Disagreements persist on whether stronger PRs protection stimulate or discourage trade. In the political arena, the status of PRs as a form of trade barrier became an issue of greater global concern. Since trade in knowledge-based goods is an important source of innovation and technology for low-income countries, it is not surprising that one of the main issues surrounding the PRs debate was centered

* Corresponding author at: Department of International Trade, Feng Chia University, Taichung, Taiwan. Tel.: +886 4 24517250 ext. 4275; Fax: +886 4 24510409.
E-mail address: yphsu@fcu.edu.tw (J. Hsu).

http://dx.doi.org/10.1016/j.econmod.2014.08.018
0264-9993/

on the need for greater PRs protection in developing countries. Proponents of the tougher standards embodied in the agreement argued that lax PRs in developing countries prevented innovators from earning a fair return on their inventions and reduced exports of technologically advanced products to the less developed world. Opponents argue that more stringent PRs would restrict trade in the developing world's legitimate imitative products and do little more than strengthen the monopolistic power of innovators. Both theoretical and empirical literature exhibits a wide range of results for both developed and developing countries (Al-Mawali, 2005; Awokuse and Yin, 2010a; Chin and Grossman, 1990; Co, 2004; Deardorff, 1992; Falvey et al., 2006; Ivus, 2010; Liu and Lin, 2005; Maskus and Penubarti, 1995; Rafiquzzaman, 2002; Smith, 1999; Yang and Woo, 2006).

Recently, many countries strive to attract foreign direct investment (FDI) by offering ever more generous incentive packages and justifying their actions with the expected knowledge externalities to be generated by foreign affiliates. According to International Monetary Fund (IMF) data, the amount of FDI in developing countries has increased more than twelve times since 1980s. FDI not only provides necessary benefits to home country, but also benefits host country's companies by scale economies in production, research and development (R&D) activities, and brand value. Since PRs have become part of the infrastructure supporting investments in R&D that are important in innovation and new business development, they allow the right holders to price their products above marginal cost, and hence recoup their initial research investment costs by granting temporary exclusive rights on inventions. Therefore, the creation of an effective PRs regime has an effect not only on the incentive for new knowledge creation and its dissemination, but also even more importantly on the business location decision of firms, prices, and the market structure. Yet, the question of how important PRs protection is in the international competition of FDI is still unsettled. Very little empirical analysis has focused on the impact of PRs on FDI flows. Although some empirical studies have examined the factors influencing FDI flows to Central and Eastern European countries and China, very few have examined the role of PRs (Awokuse and Yin, 2010b; Du et al., 2008; Javorcik, 2004; Lee and Mansfield, 1996; Nunnenkamp and Spatz, 2004).

According to the active FDI activities in Asia, and the lack of study on the relationship between PRs protection and FDI, whether strengthening PRs protection makes direct contribution to attract FDI inflows of different Asian countries is worth investigating. Therefore, this paper conducts the research from 1985 to 2010 to completely investigate the relationship between PRs protection and inward FDI in eleven main Asian countries. We employ the econometric technique of System Generalized Method of Moments (System GMM) for the dynamic panel data model to execute the estimation. It is the first empirical study of the possible linkage between PRs protection and inward FDI of Asian countries, and may shed light on the related literature by providing a significant case of Asian countries in the world.

The rest of the paper is organized as follows: in Section 2, we review the related literature. In Section 3, we introduce the data sources and present the research mode. In Section 4, we provide the empirical results. In Section 5, we briefly conclude the paper.

2. Literature review

An essential ingredient of economic globalization is that multinational enterprises are striving to make use of their intellectual-property-related assets beyond national borders. However, multinational enterprises are reluctant to engage in countries where an unauthorized use of such assets by outsiders is not prevented. The protection of PRs remains far from being harmonized across countries, even though the Agreement on TRIPS, representing one of the pillars of the WTO framework that emerged from the Uruguay Round, contains a set of minimum standards for IPRs protection. During the past several decades, there has been a significant change in the attitudes of many countries toward inflows of FDI. From being viewed as exploiters, foreign investors are now welcomed as a source of new technologies, know-how, better management, and marketing techniques. The increasingly liberal attitude toward FDI has been accompanied by renewed interest among policy makers and academic researchers in the relationship between the PRs protection and FDI.

The nature of the linkages between PRs protection and global direct investment is ambiguous and has been a source of much debate and controversy. Disagreements persist on whether stronger PRs protection stimulates or discourages FDI flows to developing countries (Shatz and Venables, 2000). Depending on a nation's PRs regime, multinational firms can serve a foreign market by choosing among several options: exports, FDI, joint ventures and licensing. While some theoretical studies have shown that stronger PRs protection stimulates innovation, the effect on FDI could be either positive or negative (Chin and Grossman, 1990; Helpman, 1993). Stronger PRs protection could have a positive effect and result in an increase in FDI by reducing the threat of imitation by local firms and thereby ensuring high returns to the investment in the research and development of foreign firms. In contrast, the strengthening of PRs protection may have a negative effect on FDI if it results in an increase in the monopoly power of foreign firms. When faced with less competition from locally produced imitation products, multinational firms may attempt to maximize profits by reducing affiliate output and sales (Maskus and Penubarti, 1995; Smith, 1999, 2001). Furthermore, stronger PRs protection could also discourage FDI if multinational firms choose to license instead of increasing FDI. In contrast to low-tech producers, firms investing in heavy knowledge-based industries may be more sensitive to PRs protection concerns (Javorcik, 2004; Mansfield, 1995; Markusen, 2001). Thus, the relationship between PRs protection and FDI remains an empirical question that has yet to receive adequate attention.

Recently, many empirical studies have analyzed the effect of various economic determinants of FDI. Wang and Swain (1995) find that GDP, wages, and trade restrictions have a positive effect while interest rates and exchange rates appear to have a negative effect on FDI. Heid and Ries (1996) investigate the determinants of FDI location decision in 54 Chinese cities. Sun et al. (2002) analyze the determinants of FDI across China's 30 provinces from 1986 to 1998 and conclude that the key drivers of FDI have changed over time. Carstensen and Toubal (2004) and Bevan and Estrin (2004) focus on European transition economies and find that traditional determinants and transition-specific factors help to attract FDI. Zhang (2005) finds hat the characteristics of FDI inflows to China from the major developed nations are different from those of Hong Kong and Taiwan. Yao and Wei (2007) explore how FDI is a productive input spurring China's recent economic growth.

Although many papers have examined the factors influencing FDI flows as mentioned above, very few have studied the role of PRs on FDI. Lee and Mansfield (1996) first empirically investigate the possible linkage between a developing country's PRs protection system and the volume and composition of US FDI in that country. The empirical evidence indicates that the strengthening of PRs protection has a positive effect on FDI inflows. Based on a survey of patent attorneys and licensing executives, Lesser (2002) uses a cross sectional design to examine the relationship between PRs and FD for a sample of 44 developing countries and find that strong property right protection is positively associated with FDI inflows. Similarly, Smarzynska (2004) uses 1995 data to study the impact of PRs on FDI inflows in Eastern European countries and reports that weak PRs deter FDI and rather encourage investors to focus on distribution of imported products. Javorcik (2004) examines the effect of PRs on the composition of FDI for a group of transition economies in Eastern Europe and the former Soviet Union. The study concludes that weak IPR protection has a negative effect on FDI in technology-intensive sectors. Besides, Nunnenkamp and Spatz (2004) investigate the PRs-FDI linkage using disaggregated FDI data for a large sample of host countries and find that stronger PRs protection plays a positive role in attracting FDI. Recently, Du et al. (2008) investigates the relationship between regional economic institutional factors