



Impact of stronger patent regimes on technology transfer: The case study of Thai automotive industry



Patarapong Intarakumnerd^{a,*}, Peera Charoenporn^b

^a National Graduate Institute for Policy Studies (GRIPS), 7-22-1 Roppongi, Minato-ku, Tokyo 106-8677, Japan

^b Faculty of Economics, Thammasat University, Prachan Road, Bangkok, Thailand

ARTICLE INFO

Article history:

Received 26 November 2013

Received in revised form 4 April 2015

Accepted 4 April 2015

Keywords:

Thailand
Intellectual property regime
Knowledge transfer
Automotive industry
Co-evolution

ABSTRACT

This paper illustrates a small extent of co-evolution of IPR regime and technological capability of Thai automotive firms. This study analysed the primary data on Thai IP-related law, regulation, firms' R&D and innovation surveys, patent registration, court litigation, and conducted interviews for case studies of firms, policy makers, and university professors specialised in the automotive industry. The results show that there are some atmospheric changes in terms of increasing awareness of importance of patent after the regime became stronger. The stronger patent regime has slight impacts on the extent and nature of knowledge transfer between transnational corporations and local part suppliers. Last, the stronger patent regime has impacts on firms climbing up technological ladders from production to more sophisticated activities.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

Thailand is not only a latecomer in industrialization but recently the country has also changed from a weak to a stronger patent regime since the first amendment of the Patent Act in 1992. Nonetheless, unlike East Asian NIEs (Korea, Taiwan, Singapore), firms in Thailand have generally failed to catch up. They have been slow and passive in technological learning. Government policies and institutions like public research institutes and universities have not strongly encouraged and assisted firms to enhance their indigenous technological capability, especially in terms of absorbing external knowledge. For example, there was virtually no mechanism to help diffuse knowledge embodied in patents. The situation has not changed under the stronger protection regime from 1992 onwards. Despite significant investment by TNCs since the 1960s, firms have only deepened their technological capabilities in Thailand in the area of production. Most have failed to move to more sophisticated activities such as product design and R&D locally. The spillover impacts of upgrading local capabilities have also been relatively small. In a nutshell, there is no co-evolution of IPR regime and technological capability of firms in Thailand, which is different from the case in NIEs (Intarakumnerd and Charoenporn, 2010).

Nonetheless, the automotive industry in Thailand is quite an exception. It started in the early 1960s when transnational corporations (TNCs) built their assembly plants there. High demand from assemblers and local component requirement imposed by the Thai government since the late 1960s induced the emergence and growth of local makers of automotive parts and components from the 1970s onwards. After trade liberalization in the 1990s, Thailand has become an important export production base of the automotive industry in ASEAN with strong automotive part manufacturers. Production is expected to reach two million units a year in 2011, of which more than half of vehicles and parts were exported. Moreover, Thailand has started to be an attractive location for R&D and product development for emerging markets. Since the 2000s, TNCs' investment strategies have started to change, as they began to invest in more technologically sophisticated activities such as advanced engineering, process and product design, and advanced testing and validation. For all these reasons, the automotive industry is a rather interesting case to study whether a non-co-evolution pattern between firms' technological capability and patent regime still features in this exceptional technologically thriving sector.

Our paper consists of six more parts including research methodology, the evolution of the IPR regime in Thailand, knowledge transfer in the Thai automotive industry and the impacts from changing patent regimes, case studies, discussion and, finally, conclusions.

* Corresponding author. Tel.: +81 80 4131 0803.

E-mail addresses: prpu6@hotmail.com (P. Intarakumnerd), peera@econ.tu.ac.th (P. Charoenporn).

2. Review of literatures and research methodology

There are number of literatures related to intellectual property rights (IPRs), FDI, and technology. Maskus (1998) stipulated that there was a positive relationship between the rise of transfer of the most advanced technologies and the degree of strength of IPRs system. Stronger IPRs system reduced licensing costs, therefore, foreign direct investment (FDI) could be displaced over time by efficient licensing. On the other hand, patents could slow down technology diffusion by limiting the use of key technologies through restrictive licensing arrangements. IPRs, therefore, should take on different levels of importance in different sectors with respect to encouraging FDI. Similarly, Mansfield (1994) found that intellectual property protection does not play the same role for each industry. In some industries like metals and transportation equipment, competitors frequently cannot make effective use of a firm's technology without many expensive and complex complementary inputs. On the other hand, firms with easily copyable products and technologies, such as pharmaceuticals, chemicals, food additives, and software, are more concerned with the ability of the local IPRs system to deter imitation.

Regarding technology transfer, Mansfield (1994) found that firms tend to regard strong intellectual property protection as being more important in decisions

regarding the transfer of advanced technology than in investment decisions. Research-intensive firms often will not transfer advanced technology to countries with weak protection. Maskus (1998) also mention that developing countries should develop a natural interest in improving their IPRs regime over time as they move up the “technology ladder” to an ability to absorb and even develop more sophisticated innovations. Firms considering investing in a local R&D facility would pay particular attention to local patent protection. Automotive TNCs with a product or technology that is costly to imitate may pay little attention to local IPRs in their decision making, however the imitation has become markedly easier over time in many sectors points to the rising importance of IPRs.

This study investigates the three following issues. Firstly, is there any atmospheric change in term of increasing awareness of the importance of patents in the industry after the patent regime became stronger? We will observe the rates of patent application and granting. Also we will explore whether or not automotive companies, both assemblers and part suppliers, have formal and systematic IP strategies and whether these strategies have been integrated with their overall business plans. Secondly, does the stronger patent regime have impacts on the extent and nature of knowledge transfer between transnational corporations and local part suppliers, and, to a lesser extent, between universities and public research institutes and firms? We will study the growth rate of licensing between the concerned parties, as well as the frequency and nature of litigation cases. Lastly, does the stronger patent regime have an impact on firms climbing up technological ladders (from production to more sophisticated activities)? Is it easier to obtain licenses for rather simple production technologies than those related for product development and design? Although there are various types of IPR, this paper will focus only on patents which are supposedly highly related with technology development in the industrial sector.

As for research methodology, there are two parts. Firstly, we assessed whether the Thai patent regime has become stronger. Secondly, we will evaluate whether and to what extent the stronger patent regime impede technological learning of firms in the Thai automotive industry.

To answer the first question, this study collected and analysed the primary data on Thai IP-related law, regulation and patent registration. To access whether the patent regime has been

strengthened, we compared scope and length of protection of the Patent Act 1979 with its 1st Amendment (1992) and 2nd Amendment (1999), as well as emergence of institutions facilitating patent registration, protection and dispute settlement. We also investigated the frequency and nature of litigation cases in automotive industry in particular to evaluate whether the stronger patent regime became an obstacle of technological learning of automotive firms.

To answer the second and the third questions, we conducted interviews for case studies of firms in the automotive industry, including both car makers and part manufacturers, regulators, policy makers, and university professors specialised in the automotive industry in order to examine whether and how stronger patent regime negatively impacted technological learning processes of those firms. In addition, we analysed secondary data on Thailand's innovation system, firms' capabilities and learning. This data largely comes from the Thailand R&D/Innovation Survey 2003, 2008, and 2012 done by the National Science and Technology Development Agency (NSTDA). We studied the use of licensed technology, patent disclosures between the concerned parties and analysed the royalty fee payment data from the Bank of Thailand. We also observe the frequency of litigation cases between TNCs and indigenous Thai suppliers climbing up technological ladders. Table 1 summarizes key variables and the sources of the information.

3. The evolution of the IPR regime in Thailand and the effect of TRIPS compliance on atmospheric changes

Prior to the promulgation of the patent law in 1979, there had been no protection for human invention or design in Thailand. Later on, the Patent Act of 1979 was proposed to promote the research and development of new inventions and designs that are useful to domestic agriculture, industry and commerce, and to offer legal protection to inventors and designers by prohibiting others from copying or imitating their intellectual innovations (DIP, 2006).

In order to protect Thailand's exports, particularly from countries which could pursue trade sanctions on Thailand because of the allegedly inadequate protection of intellectual property (especially the US's Super 301 of the Omnibus Trade and Competitiveness Act 1988), the first amendment to the patent law was completed in 1992. The first amendment signified a change from weak to strong protection. The major changes included expanding the scope of patentable matters to food, beverages, pharmaceutical products or pharmaceutical ingredients, and extending the term of patent rights protection from 15 to 20 years after the filing date (see Kuanpoth, 2006). The amendment has also increased the rights of the holder of a process patent by including a monopoly right to import products produced directly by means of the patented process.

The second amendment was completed in 1999 with an aim to make the law comply with the TRIPS agreement. Under this amendment, the group of persons who may obtain patents in Thailand was extended to nationals, residents and those having a legitimate ongoing business address in any country that is a member of the Paris Convention or the WTO. The one-year period from the first application for a patent for the invention anywhere in the world within which patent applications must be filed in Thailand was extended to eighteen months. The number of exceptions to patent rights was reduced. The scope of compulsory licensing was restricted. Finally, a system of petty patents¹ was introduced. For a petty patent, an invention is eligible and accepted for registration if it makes the examiner believes that it is new and industrially

¹ The protection period of a petty patent is 10 years, shorter than 20 years of ordinary invention patents.

Download English Version:

<https://daneshyari.com/en/article/10482902>

Download Persian Version:

<https://daneshyari.com/article/10482902>

[Daneshyari.com](https://daneshyari.com)