PATENT REGIMES AND INTERNATIONALIZATION OF ECONOMIC ACTIVITIES: SOME EMPIRICAL EVIDENCE FROM U.S. MULTINATIONALS

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The basic goal of this paper is to develop a theoretical framework and empirically evaluate the impact of intellectual property rights (IPRs) protection on the internationalization of economic activities. In recent years, intellectual property rights have become increasingly significant in many types of international transactions. The emergence of new technologies has also led to a continuous evolution in the types of instruments used to protect IPRs. IPR protection provides incentives for innovation by limiting unauthorized use of innovations and thus increasing their profitability. It also fosters dissemination and application of new ideas and innovations. However, it is controversial because stronger IPR protection could create monopoly power and lead to higher prices, and a reduction in output and the rate of innovation. Attempts to raise the standards and broaden the scope of IPR protection have encountered considerable resistance, especially in developing countries. Part of this reticence in adopting and enforcing stronger patent rights is motivated by the ambiguity regarding the impact of stronger patent rights on trade, investment, and technology flows, as well as economic growth. There is no clear evidence that a country will attract more imports, foreign direct investment or technology licensing by strengthening patent protection.

The existing literature suggests that stronger patent rights may have several potentially conflicting effects on the multinational enterprise's (MNE) global strategy. For example, patent rights affect a MNE's decision to service the foreign market through exports, licensing and subsidiary production, and may create either complementary or substitution effects between any of the three modes of servicing the foreign market. Stronger patent rights also create a trade off between enhanced market power and the resultant lower MNE output, and larger effective market size in the host country that results from tighter constraints on the local firms' abilities to imitate. If the monopoly effect of patent rights dominates the market expansion effect, then strengthening patent rights would result in a decrease in trade, investment, technology flows, and innovation and vice-versa. The empirical work in this area is somewhat limited.

This paper examines the effect of IPR protection on several types of international activities by multinational enterprises (MNEs) such as arms length exports, sales by affiliate in the host country, and licensing of technology abroad. The MNE is modeled as optimizing over its three choices of servicing the market, namely, exports to unaffiliated firms, local sales by its subsidiary or licensing its technology to the local firm, given the patent protection in the host country. The impact of patent rights on exports, local affiliate sales, and licensing are tested empirically in a simultaneous equation framework to capture the joint decision making process involved in MNE activities. The system of equations is specified using an adaptation of the gravity model. The data cover the periods 1982, 1989 and 1994.

The following are the key issues that this research addresses:

i) It analyzes the ways in which stronger patent rights influence exports, local affiliate sales, and licensing. It does so by considering a) which of the two main and conflicting effects of patent protection, namely market expansion and monopoly effects, is the dominant influence with regard to each form of MNE activity; b) whether stronger patent rights in the host country create a systematic pattern of substitution or complementarity between different forms of MNE activity such as exports to unaffiliated firms, affiliate sales, and licensing of technology.

ii) It examines how the technological capabilities of the host country influence the impact of IPRs on MNE activities. It does so by distinguishing between the ability of the host country firms to be direct competitors in the local (host country) market and in foreign (third country) markets; it also ascertains if the impact of IPRs is larger in the case of one type of competitive threat as compared to the other.

iii) It investigates the role of the host country policy environment and its impact on the influence of stronger IPR protection in facilitating the process of internationalization of technology transfer, investment, and trade. In other words, to what extent does the host country policy environment matter when thinking about the effects of IPR protection?

The results of this analysis suggest that strengthening patent rights in countries that pose a strong threat of imitation or output competition in foreign markets has a highly significant and positive effect on US MNE exports to unaffiliated firms and licensing, while reducing the desire for internalization through subsidiary production. Furthermore, the monopoly effect appears to be dominant in the case of unaffiliated exports while the market expansion effect dominates the monopoly effect in the case of local sales by subsidiaries. The results also indicate that unaffiliated exports, local sales by MNE subsidiaries and licensing may be complements rather than substitutes. The coefficients on the macro-policy environment variables suggest that unaffiliated exports and subsidiary local sales are more sensitive to the macro-policy

environment in the host country than licensing. These results lend support to the argument that changes in patent rights policies should be evaluated in conjunction with other international and domestic policies to assess their full impact on the host country.

This study makes several important contributions to the literature. Given the fundamental indeterminacy of the effect of patent protection on trade, subsidiary sales and technology transfer, this project provides systematic evidence on the sensitivity of MNE activities to patent regimes. It exploits the panel nature of the data, unlike most previous studies that are cross-sectional. The study also uses a simultaneous equation system to empirically capture the joint decision making process involved in an MNE's efforts to service its foreign markets. An important contribution of this study is that it provides much needed evidence on how patent right policies operate within the overall framework of a broader array of host country polices, and how strengthening patent protection can have differential effects on different types of MNE activities. This is especially relevant to policy makers who consider one form of MNE activity to be superior to another in promoting knowledge spillovers and growth in the host country.