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Intellectual property rights and innovation in developing countries

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Abstract

This paper studies intellectual property rights (IPRs) and innovation in developing countries. A model is developed to illustrate the trade-off between imitating foreign technologies and encouraging domestic innovation in a developing country's choice of IPRs. It is shown that innovations in a developing country increase in its IPRs, and a country's IPRs can depend on its level of development non-monotonically, first decreasing and then increasing. Empirical analysis, with a panel of data for 64 developing countries, confirms both the positive impact of IPRs on innovations in developing countries and the presence of a U-shaped relationship between IPRs and economic development.

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1. Introduction

The protection of intellectual property rights (IPRs) in developing countries has been a much debated issue in recent years. This debate is often placed in a North–South framework, where the predominant view is that southern (developing) countries tend to lose from protecting IPRs. The static and partial equilibrium reason for this loss is that

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IPRs protection will strengthen the market power of northern innovating firms and raise prices in developing countries (Chin and Grossman, 1990; Deardorff, 1992).[1] But even when dynamic and general equilibrium factors are accounted for, the South need not benefit from increasing IPRs, partly due to the adverse terms-of-trade effect and the possible slowing down of northern innovations over time (Helpman, 1993). In fact, Helpman concludes:

> "Who benefits from tight intellectual property rights in less developed countries? My analysis suggests that if anyone benefits, it is not the South." (Helpman, 1993, pp. 1274)

There are, however, several arguments of why developing countries need to increase their protections of IPRs. First, as Diwan and Rodrik (1991) argue, northern and southern countries generally have different technology needs and, without the southern protection of IPRs, northern countries would not develop technologies largely needed by the South. Second, northern firms may react to the lack of IPRs in the South by making their technologies more difficult to imitate, which can result in less efficient research technology and less northern innovation (Taylor, 1993, 1994; Yang and Maskus, 2001). Third, even if greater protection of IPRs does not directly benefit the South, it could still increase world welfare; therefore, there are gains from international cooperation that tightens IPRs in developing countries. In fact, issues on trade-related intellectual property rights (TRIPS) have been a key element in the WTO negotiations, and strengthening of IPRs is often a condition for a developing country's entry to the WTO (Maskus, 2000). Importantly, even these arguments for strong southern IPRs seem to suggest that, were it not for strategic reactions or pressures from the North, the southern developing countries would have little incentive to protect IPRs.[2]

This paper offers an alternative perspective on the protection of IPRs in developing countries. We shall argue that even if strategic behavior of or pressures from the North is not a concern, a developing country may still want to protect IPRs, for domestic economic considerations. In particular, there may be domestic innovative activities that would rise under stronger IPRs. For such an economy, there could be an optimal level of IPRs, which balances the trade-off between facilitating the imitation of northern advanced technologies and providing incentives for domestic innovations. To motivate this approach, we note that while most innovations originate from the North, there are substantial innovative activities in many developing countries, as measured by patent applications filed in these countries by domestic inventors.[3] For instance, during 1985–

[1] According to Primo Braga et al. (2000), this view was widely accepted among policy-makers in the 1970s. It was believed that since developing countries had little ability to create intellectual property, they had little to gain from IPRs that would mainly grant monopolies to foreign patentees.

[2] Zigic (1998, 2000) contain interesting models in which strategic considerations by northern firms can provide incentives for the South to increase IPRs.

[3] The innovative activities we have in mind are much broader than those that can be protected through patents. In fact, activities such as developing a new product that may be granted a trademark or a copyright could be very important for a developing country. The advantage of focusing on patent applications is that there are data on them, which is important for our empirical analysis.