# INTELLECTUAL PROPERTY PROTECTION, ECONOMIC POLICIES AND TECHNOLOGY TRANSFER IN DEVELOPED AND DEVELOPING WORLD

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## INTRODUCTION

Knowledge is typically non-excludable i.e it is not possible to prevent others from applying new knowledge even without the authorization of its creator. If a new technology has value and important, then it is likely to be copied or imitated by someone to thereby reducing the future profits of the inventor, and also remove the profit and cost of the innovative activities in the industry. Intellectual property rights (IPRs) encourage innovation by granting successful inventors' temporary monopoly over their innovations. The consequent monopoly over the innovation provide the returns on successful investment in research and development (R&D). This return must be large enough to compensate for the high R&D investment. Once an innovation has been created by someone, then it has no rival and which suggests that its benefits will be maximized if its use is free to all at marginal cost, however this availability to all will yield benefits in the short run, but will severely damage the incentive for further innovation. But, excessive IPR protection might restrict to adequate dissemination of new knowledge, which is important for further invention. Apart from this inadequate IPR protection to some extent has stimulated Research and Development activity in many countries by encouraging and enhancing knowledge spill overs from transnational corporations (TNCs) and other domestic firms. Giving inventor absolute protection may cause to total monopoly. Entry by rivals may be impeded, and successful innovators may have reduced incentives for developing and exploiting subsequent innovations. Choice of IPR policy then reflects a balancing of these considerations. Therefor to award a timebound monopoly is the second-best thing which intend to maintain the monetary amount for further innovation, which may encourage long term

growth and improved the quality of the product. In Developed countries, many innovators opted for strong and restrict intellectual property protection mechanism to encourage the research and development and invention, which is important for long run and sustainable growth. With R&D spending concentrated in a handful of the world's richest countries, genuine innovative activities are limited in most developed and developing countries. The lion's share of nations within the world have taken a diverse approach, giving as it were powerless IPR security, in case any, as a way of permitting the fast dissemination of information through impersonation as a noteworthy source of innovative advancement. Giving more grounded IPR assurance is seen as moving benefits from household imitative firms to outside firms and decreasing yield within the household economy, instead of empowering residential imaginative movement. The counter argument is that stronger IPR protection can help prize motivated and risk-taking even in developing economies, while weak IPR protection can make developing countries remain dependent on dynamically inefficient firms that rely on counterfeiting and imitation. The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) was signed between the parties during the Uruguay Round (1986-1994) to protect and strengthen the IPRs. The TRIPS Agreement is the first foremost complete and universal set of rules covering IPR protection. The TRIPS Agreement specifies minimum standards that should be fulfilled within specified time. Which covered are Trademark, geographical indications (GI), industrial designs, patents, the layout designs of integrated circuits and undisclosed information including trade secrets and test data.

## THE ROLE OF INTELLECTUAL PROPERTY IN ECONOMIC AND SUSTAINABLE GROWTH

Present, the world is divided into two types of countries: a developed nation, an innovating "North" and a developing nation, an imitating "South". Therefore, the effect of more grounded IPR assurance benefits the improving North, but its affect within the South where development is constrained or non-existent is vague, depending connect alia on the channels through which innovation is exchanged. Research shows that greater IPR security is found to favour the South only when R&D is highly efficient, resulting in substantial cost reductions, and when the South accounts for a large proportion of the overall product market. Research also shows that the

benefits of large no. of invention through stronger IPR protection become weaker as more and more countries strengthen their IPR regimes, since the additional showcase secured and the additional advancement that can be fortified by such security decreases. As IPR holders engage in monopoly pricing that distorts consumer choice, strengthening IPR protection can lead to welfare reductions, particularly in a country that undertakes little or no R&D and would otherwise be able to use as freebies on foreign innovations.

## TRADE AND COMMERCE

When technology is transferred by trade, successful southern imitation leads to the change of the competitive advantage from the North to the South for the production of imitated goods. More grounded IPR assurance within the South diminishes southern impersonation and increases northern development within the brief run, as development gets to be more productive. In the long run, though, innovation in the Developed countries (North) may fall, because if new products are produced for a longer time span in the Developed Countries (North), fewer resources are available for innovation there. The use of the words "North" and "South" simplifies the fact commonly used in literature. UNIDO (2005) notes that this simplification ignores inequality within the North and the South growth. However, poor IPR security in the Developing Countries (South) may have adverse consequences as the Northern exporters may be able to 'hide' their development innovations in addition to reducing the motivation for innovation in the Developed Countries (North), thus restricting the degree to which they can be imitated by traded products. In addition, increases in northern masking could then offset the potential gains from technology transfer through poor IPR security in the South.

## IMPLICATION OF INTELLECTUAL PROPERTY RIGHTS

The implications of stronger IPRs depend, inter alia, on a country's level of development (measured by per capita gross domestic product (GDP) or human capital). For most high-income countries, strengthening IPRs raises growth at least partly, due to increased innovation and technology diffusion. The IPR regimes in these countries already meet or exceed the TRIPS standards, leaving them free to further strengthen their IPR regime if they wish. For middle-

income countries, the evidence suggests that strengthening IPRs has little effect on growth. On one hand, a stronger IPR regime encourages both domestic innovation and technology diffusion through foreign patenting and international trade and both domestic innovation and technology diffusion can impact positively upon growth. On the other hand, the useful effect of more grounded IPR security on household development and innovation dissemination is to a certain degree offsetting the growth-enhancing benefits something else gotten from imitation and presently blocked by the more grounded IPR administration. The IPR regimes in these countries will need to be strengthened in order to meet the TRIPS standards. The policy focus of these countries should be to encourage domestic firms to shift from imitation to innovation and to facilitate other activities with growth-enhancing technology spill overs. For low-income countries, evidence suggests that strengthening IPRs encourages growth, but the exact channels through which this occurs are not yet identified. In these countries, stronger IPRs appear to have no effect on innovation and the evidence reviewed suggests that the impact on international trade is negative. In the lowest income countries, while stronger IPR protection is found to encourage foreign patenting it had no significant effect on growth. These are countries whose IPR regimes will need to be strengthened to meet the TRIPS standards. It may be that most will not have significant imitative or innovative capability in the near future. Those which do must be concerned that TRIPS will inhibit their firms from passing through the imitative stage that seems to be the precursor to gaining innovative capability in relatively high-tech industries. The TRIPS obligations may make WTO membership less attractive for those countries with imitative aspirations.

***International trade**:*

A country's openness to international trade seems also to affect the relationship between IPRs and growth. The evidence suggests that stronger IPRs have a significant and positive impact on growth in more open economies. The exact mechanism through which this occurs has yet to be revealed, but it appears to involve the substitution of domestic innovation for technology produced abroad, since stronger IPRs seem to lead to less domestic patenting and more foreign patenting. And it is not just that economies that are more open receive more foreign patents but that the growth-enhancing effects of foreign patenting also appear to be stronger in economies that are more open. In addition, IPRs are also found to influence trade. Evidence indicates that greater IPR security contributes to larger trade flows, but mostly in countries with imitative

capabilities and not generally in high-tech or patent-sensitive industry goods. Licensing and FDI Since most innovation occur in a few advanced countries, FDI and technology licensing are often perceived as the major formal channels for international technology transfer. But while there is some evidence that stronger IPRs encourage licensing, the evidence on whether stronger IPRs encourage FDI is largely inconclusive. Most host countries anticipate that FDI or licensing will yield further benefits from technology spill overs to domestic firms. By their nature, such spill overs are difficult to measure, so perhaps it is not surprising that there is little conclusive evidence of growth enhancing spill overs through inward FDI, at the economy-wide, industry or firm level. Foreign patenting Considering technology diffusion through foreign patenting, the evidence indicates that a country's market size may be important in determining whether increased foreign patenting encourages or inhibits growth. Further is has been seen that foreign patenting has a positive impact on growth in countries with relatively high levels of IPR protection, for relatively open economies, and for countries with relatively large markets. These findings combined with the findings that stronger IPR protection encourages foreign patenting in developing countries are consistent with broad conclusions that stronger IPR protection encourages technology diffusion. Benefits of technology diffusion are greater in more open economies, countries that are more developed, and in countries with larger markets and where foreign firms have less market power.

## EFFECT OF ECONOMIC POLICES ON IPRs

Intellectual property rights related policies regarding patent fees, the scope of patentability and the novelty requirements in patents can all contribute to the development of a domestic innovative sector and to the international diffusion of technological knowledge. The fees for patent applications and for the renewal of patents and trademarks can be configured in such a way that both innovation and diffusion will be promoted. Developing countries may also restrict the reach of patents and promote the rapid publishing of patent applications, enabling domestic companies to come up with a patent in their own right. Countries could also set high standards for the novelty requirements of patents in order to prevent routine discoveries from being patented. This can be combined with a framework of utility models to empower local firms to design around patents and to progress their fabricating strategies.

**Competition policies**: By creating market power for patent holders, stronger IPR protection can lead to lower sales at higher prices, which in turn can limit the extent of technology diffusion. A number of policies consistent with TRIPS can offset these effects, including price controls through reference prices or administrative ceilings, allowing parallel imports, and compulsory licences, entitling a domestic licensee to exploit the patent for a fixed period during the patent life.

**Complementary policies**: There are other approach alternatives accessible which will improve the effect of IPR protection on innovation. Tax Policies and regulatory administrations can be organized so as not to dishearten innovation. Investment in education, especially in science and innovation, may moreover energize residential innovation. Evidence recommends that the advancement of a local innovative division through these implies can moreover upgrade the benefits from worldwide innovation dissemination.

**Technology diffusion**: For most developing countries advanced technologies will be imported. International technology transfer occurs through imports, FDI, licensing and patent applications by non-residents. Policies aimed at improving infrastructure for communication and transport and maintaining macroeconomic stability along with open trade and investment policies can encourage such flows, allowing countries improved access to foreign technology.

**The role of multilateral organizations**: Multilateral organizations can assist developing countries in meeting the terms of the TRIPS Agreement by promoting capacity building in IPRs, to obtain the maximum net benefit from TRIPS. Capacity building in IPRs should focus less on the specification of protective laws and regulations and more on the technical, judicial and legal expertise underlying effective technology transfer. Multilateral organizations can play a significant role in facilitating research on the economic effects of IPR protection and in encouraging the dissemination of its findings to all interested parties. More for the most part, multilateral organizations have a part to play in satisfying data needs by empowering collaboration and data sharing among governments and by serving as a merchant of information almost effective innovation acquisition programmes that have been embraced within the past. Technical standards play an important role in diffusing production and certification technologies, and learning technical standards is often tantamount to learning technology. Here multilateral organizations could create a pool of experts to aid standard setting bodies in developing countries. Given the importance of the presence of innovative capacity for

successful international technology diffusion, multilateral organizations could play a role in encouraging the development of a research culture in developing countries. This could include the development of training programmes in how technology is transferred, as well as the financing of education programmes more generally, particularly those that can aid the diffusion of technology. Donor countries and multilateral organizations could consider establishing specific trust funds to finance the training of scientific and technical personnel to facilitate the transfer of technologies and to encourage R&D in developing countries. Multilateral organizations, the WTO and UNIDO in particular, could increase the scope of monitoring developed country efforts in the transfer of technology and could add an evaluative mechanism for the effectiveness and extent of technology transferred. Finally, some researchers have asserted that the most powerful indirect incentive for technology transfer would be for developed countries to grant significant market access for products in which poor countries have a comparative advantage. They argue that there is a correlation between technology transfer and market access because of the role played by market size and growth in attracting trade and FDI, and the related incentives for investing in new technologies if export markets are more stable. There is an obvious role for multilateral organisations, particularly the WTO, to play here.

## CONCLUSION

While few would consider IPR protection to be a panacea for developing countries, views on the importance of IPR protection tend to be polarized, on one side. On the other it is thought that stronger IPR protection leads to monopoly power for patent holders, reduces the incentive to innovate and limits the diffusion of knowledge. The impact of IPR protection on growth, innovation and technology diffusion in developing countries is likely to depend upon a number of factors. While stronger IPR protection in the poorest countries is not likely to lead to substantial benefits in terms of innovation or technology diffusion, the administrative cost of developing a patent system and the enforcement of TRIPS, along with the potential abuses of market power in small closed markets suggests that such countries could lose out from TRIPS. Stronger IPR protection in the poorest countries may also inhibit or lengthen the imitative stage of development that seems to be necessary in order to develop innovative capacity in many

industries. Policies aimed at improving the business environment and encouraging imports of technology embodied in goods could potentially reduce such costs, though their impact on other development-related goals needs to be carefully weighed. In other developing countries the potential for benefits from TRIPS is stronger. Here existing firms engaging in imitation may well be empowered through stronger IPR protection to shift assets towards adaptive innovation, whereas more grounded IPR assurance is likely to extend trade and commerce and FDI streams into nations with existing imitative capacity, in this way upgrading innovation exchange. Policies to enhance the benefits of TRIPS would help develop the domestic innovative sector through encouraging R&D and investment in education, along with policies aimed at opening markets to foreign imports and encouraging inward FDI.