

# Influence Of Intellectual Property Rights In Economic Progress Of Developing Countries

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*Abstract: Economic growth has undoubtedly been one of the major reasons and causes for the phenomenal rise in the study of intellectual property (IP) over the years. The importance of protecting and enforcing intellectual property rights to develop the scientific and technological capacity of developing countries and benefits derived from the enhanced level of growth has now become a matter of common understanding. Countries have laws to protect intellectual property, aiming at safeguarding creators of intellectual goods and, thereby creating creativity, dissemination and application of its results as well as to encourage fair trading which would contribute to economic and social development. But the fact that developing countries vary widely in the quality and capacity of their scientific and technical infrastructures, poses a major hurdle to the extent of applicability of intellectual property laws. The article outlines some economic impacts of strong intellectual property regime. It argues that IP protection is an important determinant of economic development and articulates that if developing countries can embed their intellectual property system within a broad and coherent set of policies and transparent regulations with the aim to promote rigorous but fair dynamic competition, there are possibilities of economic growth as well as technological improvements.*

*Keywords: Intellectual property, economic growth, creativity, dissemination, dynamic competition, infrastructure.*

## I. INTRODUCTION

Intellectual property is a term which refers to the ownership of intangible things as creations of human intellect, the innovative idea behind new technology, products, processes, designs or plant varieties, and other tangible things such as trade secrets, trade mark, confidential information etc. Although intangible the law recognizes intellectual property (IP) as a form of property, it permits the owner to harness the commercial value of the outputs of his inventiveness and creativity for a predetermined period of time. IP provides incentives to individuals by recognizing their creativity and offering the possibility of material reward for their marketable inventions. These inventions encourage innovation, which benefits the community by creating new improved goods that meet social needs. Outputs of intellectual activities in scientific, industrial, literary and artistic fields have certain common economic value and as such individuals creating new products in those fields have moral and economic rights over

their creations (Kieff, 2001, p.679). Countries have laws to protect intellectual property, aiming at safeguarding creators and other producers of intellectual goods and services by granting them certain time limited rights to control the exploitation of those productions. Other aim of IP protection is to promote creativity, dissemination and application of its results as well as to encourage fair trading which would contribute to economic and social development of a country. Thus, protection of intellectual property is important for promoting innovation and creativity, developing employment, and improving competitiveness.

Intellectual property rights (IPRs) are strong tools to protect investments, time, money and effort invested by the creator or inventor of an intellectual property, since it affords the creator several exclusive benefits. These properties may also be licensed to companies and enterprises allowing them to exploit those in exchange for royalty payments, who can develop it to the point where it can be manufactured and made available to the market. Thus, IPR aids the economic

development of a country by promoting healthy competition and encouraging industrial development. They are considered crucial to fostering innovation by providing a financial incentive to stimulate creativity, whereby businesses can reap the benefits from their inventions and will be more willing to invest in research and development (R&D).

The question of how IPRs affects the processes of economic development or activities of any country is complex and depends on particular circumstances in each country. Over the course of history, different legal instruments for protecting intellectual property have emerged. These instruments differ in their subject matter, extent of protection and field of application, reflecting each country's objective to balance the interests of creators and consumers for different types of intellectual works. For developing countries, adopting more protective regimes could encourage innovation and growth. Moreover, strong IPRs could stimulate the acquisition and dissemination of knowledge, since the information in patent claims is made publicly available, which by lowering the cost of future innovation would encourage growth (Ginarte & Park, 1997). Despite these arguments, strong IPRs has an ambiguous impact on growth, it could either raise or reduce economic growth, can limit the spread of new ideas and encourage monopoly. Entry by rivals may be impeded, and successful innovations may have reduced incentives for developing and exploiting subsequent innovations. IPRs can also have an ambiguous impact on other factors considered important for growth. In particular, protective regimes can have opposing influences on the relationship between growth and trade, foreign direct investment, licensing, imitation and piracy. Nevertheless, a growing body of work suggests that stronger IPRs could increase economic growth and promote beneficial technological change if these property rights are structured in a way that encourages vigorous dynamic competition (Maskus & Penubarti, 1995). Developing countries thus face the crucial challenges of fitting their new IP regimes into a broader, pro-competitive policy agenda.

Moreover, the impact of IPR protection on growth is likely to depend upon a country's level of development, as reflected in its ability to innovate and imitate. Innovative activity tends to be concentrated in a small number of advanced countries. In these countries stronger IPR protection is expected to encourage innovation and subsequent growth. For many developing countries, imitation can be important source of technological development and growth. In these countries, providing stronger IPR protection to foreign firms could cripple domestic industry previously relying on pirated technologies (Rajeev, 2003). Least-developed countries devote virtually no resources to innovation and have little intellectual property to protect. As incomes and technical capabilities grow to intermediate levels, some adaptive innovation emerges but competition flows primarily from imitation. Thus majority of economic and political interests at this stage prefer weak protection. As economies mature to higher levels of technological capacity and demands shift toward higher quality products, domestic firms come to favor protective IPRs. Indeed, governments strengthen their IPRs system as their economies become wealthier and attain a deeper basis of technological sophistication.

As the global IPRs regime is undergoing strengthening and modernization, through implementation of the Trade Related Aspects of Intellectual Property Rights (TRIPS), it cannot be strongly claimed that the new regime will improve prospects for economic growth and development. The TRIPS agreement envisions significantly stronger protection for intellectual property rights, investments in regulatory agencies to enforce these rights, and more consistent regimes of protection across national borders. But an important economic question is the likely impact of these changes on the economy and social situation of each country. Indeed, if developing countries embed their intellectual property system within a broad and coherent set of policies and transparent regulation, the system bears considerable promise for promoting growth in the long run. This article outlines some economic effects of intellectual property rights and emphasizes the channels through which strengthened IPRs can enhance prospects for economic development. Although IPRs along with recent developments could generate positive and negative effects, this article argues that a regime of extended protection holds considerable promise for promoting economic growth in developing countries. If countries can strike an appropriate balance that promoted rigorous but fair dynamic competition, there are chances for growth and technological improvements. In the final section, the article discusses broader policy recommendations that developing countries should consider as complements for expanding intellectual property protection.

## II. IMPACTS OF IPRS ON ECONOMIC GROWTH

The significance of intellectual property rights in economic activity differs across countries and depends firstly, on the amount of resources countries devote to creating intellectual assets, and secondly, the amount of protected knowledge and information used in production and consumption. One useful indicator for the magnitude of resources devoted to the creation of new knowledge and information is a country's expenditure on Research and Development (R&D). Countries not investing in R&D, that is not conducting innovative research or conducting a limited amount would enjoy few, if any, of the benefits of IP protection, because an innovative sector through which IPRs affect economic growth is absent. This implies that countries would not experience the growth effects of IPRs unless a significant domestic research base exists or unless foreign multinationals are present that transfer research knowledge into the country. Even though having an IPR system would help attract foreign research resources and possibly lead to the creation of a domestic research sector, countries without an innovative R&D sector are likely to attach a low priority to developing an IPR infrastructure. So, the existence of IP laws does not appear to affect directly the growth of economy, instead the benefits to economic growth are from encouraging the research sector to invest and to take risk.

The second channel through which IPRs influence economic activity is in the use of proprietary knowledge and information owned by both domestic and foreign residents, in production and consumption. For example, in low income countries, the share of agricultural output is higher and the

share of services is much lower than in high-income countries. This would suggest that IPRs, as they relate to agricultural processes and products, are more important in developing countries than in developed countries. However, the critical question in this context is: what share of information and knowledge in a given sector and country is proprietary, and what share of knowledge that would contribute to the development of a given sector is protected by IPRs? There are no obvious answers to these questions.

Intellectual property in developing countries like Bangladesh can play a vital role in its economic growth by encouraging innovation, product development and technological change. IP protection can be used as a vehicle for economic development through trade. By appropriating rights, the country could use its competitive advantage of reverse-engineering, adding value through adaptation of existing technology goods accessed in formal and non-formal means. However, IPRs protection has some interrelated economic affects which are considered to be vital for economic growth of developing countries, Some of these are discussed below:

#### A. CREATION OF KNOWLEDGE AND INNOVATION

The system of intellectual property is designed to encourage knowledge and innovation. The progress and well-being of humanity rest on its capacity to create and invest new works in literary, scientific or areas of technology. In today's knowledge based economy, returns on investment for knowledge are higher than returns on other factors of production. Intellectual property rights contribute to ensuring profitability from knowledge, since it allows property holder to use and sell newly developed technological goods and services and thereby promotes knowledge creation and business innovation. The monopoly of his rights in the market will make sure the owner recovers the huge expenses invested in the research and development phase. IP rights can also be licensed to companies and enterprises allowing them to exploit the invention in exchange for monetary benefits. Thus, intellectual property such as patent spurs economic growth creates knowledge, new jobs, industries and enhances the quality and enjoyment of life. Legal protection of new creations encourages the commitment of additional reasons for further inventions and creations, excludes competitions from market and offers the incentive for people to study new knowledge, information and technology (Khan & Mashelkar, 2004). On the other hand, in absence of intellectual property rights, economically valuable information could be appropriated without compensation by competitive rivals. Firms would be less willing to incur the costs of investing in research and commercialization activities.

Invention, and the individuals who create them and bring them to market as new products or processes, are recognized as key factors in a country's economic development. Successful inventions result in products, and products create jobs and stimulate entrepreneurship and overall economic activity. Thus, invention is a complex interaction between human creativity, technology and the marketplace, and iteration must typically happen between all three realms before an invention has a significance economic impact (Hall,

2003). On the other hand, innovation is the practice of bringing inventions into widespread usage, through creative thinking, investment and marketing. IP plays an important role in facilitating the process of taking innovative technology to the market place. An innovative new or improved product that meets customer expectations offers an existing or new business, new market territory without competition for so long as it retains its innovative advantage. As there are many players involved in facilitating the market success of an innovation, the effective use of the tools of IP can reduce the risk for the players involved, who may then be able to reap acceptable returns for their participation in the process. At the same time, intellectual property plays a major role in enhancing competitiveness of technology-based enterprises. For most of such enterprises, a successful invention results in a more efficient way of doing things or in a new commercially viable product. The improves profitability of the enterprise is the outcome of added value that underpins a bigger stream of revenue or higher productivity.

Intellectual property, specially patent are also valuable for generating interest and investment in new and growing businesses. This is particularly important for companies attempting to establish themselves in high-tech industries. Start-up companies are often based on the development of a specific new, sometimes potentially ground breaking technology. Without securing rights for their technology, these companies may find themselves unable to obtain sufficient resources to bring that technology to market (Saphiro, 2002).

#### B. DIFFUSION OF KNOWLEDGE

A strong system of IP protection promote widespread dissemination of new information and knowledge by encouraging right-holders to place their creations, ideas and inventions on the market. Information is a form of public good in that it is inherently non-rival, and, developers may find it difficult to exclude others from using it. IPRs could stimulate acquisition and dissemination of new information. For example, patent claims are published to allow rival firms to use the information in them to develop further inventions. Knowledge information is cumulative and as new inventions build on past practices the process of technical change could accelerate (Scotchmer, 1991). Patent, trademark and trade secrets also afford firms greater certainty that they face limited threats of uncompensated appropriation. This certainty could induce them to trade and license their technologies and products more readily, enhancing their diffusion into the economy.

By granting exclusive rights, IPRs restrict in many ways the diffusion of knowledge and information. patents for example prevent others from using proprietary knowledge. Monopolistic or oligopolistic behavior among intellectual property right holders (relatively smaller output and higher prices) can lead to less than optimal dissemination of new knowledge and information. As explained earlier, this should be considered as part of the trade-off related to IPRs protection, enhanced market power allows intellectual property owners to recover their initial information and knowledge generating investments. At the same time, IPRs can play a positive role in diffusion. Patents are granted in

exchange for the disclosure of inventions. In exchange for temporary exclusive rights, inventors have an incentive to disclose knowledge to the public that might otherwise remain secret. Although other agents may not directly copy the original claim until the patent expires, they can use the information in the patent to further develop innovations and to apply for patents on their own. Moreover, an IPRs title defines a legal tool on which the trade and licensing of a technology can be based. Protection can facilitate technology disclosure in anticipation of outsourcing, licensing, and joint-venture agreements. The IPRs system thus plays a role in the creation of markets for information and knowledge by providing buyers and sellers of technology with more information. Similar to rights on tangible property, IPRs can make markets for intangible property more efficient and reduce transaction costs.

Literary and artistic creations and computer software are protected by copyright, which provide a contractual framework within which ownership rights may be organized and transacted. This framework is particularly important for building modern creative industries such as, music recordings, films and publishing. These industries emerge from the artistic efforts of numerous participants, composers and authors, performers, recording studios, manufacturing films, publishers and distributors etc. Allocating rights to each of these activities is a complex phenomenon that cannot readily be managed in the absence of a legal framework for copyright. Developing countries, which enjoy an abundance of creative, musicians, writers and performers may be able to convert that abundance into widely marketable products through strong policy formulation and regulation.

### C. TECHNOLOGY TRANSFER

International technology transfer is a process by which one country transfers technology to another through voluntary transactions, technology spillovers and imitation. Since strong IPR protection leads to monopoly pricing and restricts the welfare reduction, countries with little or no R&D depend on foreign innovations. These countries tend to have IPRs system that favor information diffusion through low-cost imitation of foreign products and technologies to stimulate economic development and growth. They hope to attract greater inflows of technology either by strengthening their IPRs regimes unilaterally or through adherence to TRIPS (Maskus, 1998). IPRs are likely to influence the diffusion of knowledge between economies by influencing international transactions. Internationally, technology is transferred through various channels, such as international trade of goods, foreign direct investment (FDI), international licensing agreements of technology and trademarks to unaffiliated firms and joint ventures. In fact for most developing countries access to technology occurs mainly through these channels of diffusion rather than via domestic innovation.

When technology is transferred through international trade, IPRs plays a pivotal role in impacting growth in open economies. Strong IP regimes increase flows of manufactured goods and services from other countries. Imports of capital goods and technical inputs could directly reduce production costs and raise productivity for the developed countries by

outsourcing the required services from low income countries (Schneider, 2005). As legal protection may increase the range of internationally traded goods and services, this may stimulate the development of technological capabilities in developing countries. However, weak protection often leads to less domestic patenting and more dependency on foreign entities and, as such these are significant barriers to manufacturing trade and can pose credible imitation threats. Moreover, relatively weak IP protection in a given country may lower the probability that multi-national enterprises will invest and transfer their technology or they may be willing to invest only in wholly own subsidiaries, or to transfer only older technology (Mansfield, 1994). If these countries strengthen their regimes they will attract rising import volumes of high-tech goods, which should confer beneficial growth impact.

A second channel of international knowledge diffusion is foreign direct investment. Strong IP protection attracts FDI, which leads to increasing levels of technology transfer, international trade and competitiveness. Such protection has a positive impact on trade, for example they increases bilateral manufacturing imports into both small and large developing economies. FDI is embraced by industries in which knowledge and technology are important as they can be easily transferred across borders. It also depends on the market size, recourse availability, production costs, labour supply, and skills. Many host countries believe that technology transfer through FDI can result in technology spillovers to domestic firms and will yield benefits in future. The main advantage of technology diffusion through FDI is that the technology remains internal to the firm and technology spillovers are reduced both at the firm and industrial level. Large corporate having a complex technology and highly differentiated products prefer FDI over licensing or joint ventures as the cost incurred on technology licensing is very high. Generally, it is believed that countries embracing weak IPR protection receive less FDI, however, it varies from one sector to another, being of secondary importance for the low-tech sector or where the products are difficult to imitate.

In joint venture agreements, multinational companies externalize proprietary knowledge to their local partners. Even wholly owned subsidiaries hire and train local employees and transfer some of their knowledge through contractual relationships with local firms. If stronger IPRs induce more FDI, one could expect higher knowledge spillovers from foreign to local firms and workers.

The investment of foreign capital assists developing economies in many ways, including the creation of jobs, transfer of new technology and advanced management strategies, and boosting exports. In addition, foreign investment is a channel to increased social development, providing the resources for infrastructure improvement and job training among other things. Investments from developed economies facilitates access to modern technology, which in turn, benefits the standards of living and enhances the skill of local labour force. The flow of ideas, methods and inventions is the impetus for increased productivity and improved processes and result in better products reaching the marketplace. It is these technological innovations that create a base for strong economy and drive long-term economic



growth. While robust IP protections are helpful in attracting capital and technology transfer, they are also essential for enhancing R&D investments.

IPRs have varying importance in different sectors with respect to encouraging FDI. Investors with products or technologies that are costly to imitate would pay little attention to local IPRs in their decision making. Firms with easily copied products and technologies, such as pharmaceuticals and software, would be quite concerned about the ability of the local IPRs system to deter imitation. Firms considering investing in a local R&D facility would pay particular attention to local patents and trade secrets protection. This situation seems to hold also in the machinery industry. In other sectors, however, there is little difference in the willingness to transfer technology through various channels in face of weakness in IPRs regime.

IP rights can also facilitate the establishment of joint ventures. Small and medium enterprises (SME) facing serious financial constraints but rich with IP assets may find this form of partnership strategically useful. Ownership of patents and trade secrets may play a crucial role in attracting potential partners. Sometimes, an enterprise with patented product or valuable trade secrets may find it strategically beneficial to enter into a joint venture agreement with an enterprise with a strong trademark so as to secure more sales. In joint venture agreements, for example, multinational companies externalize proprietary knowledge to their local partners. Even wholly owned subsidiaries hire and train local employees and transfer some of their knowledge through contractual relationships with suppliers, buyers of local firms. If stronger IPRs induce more FDI, one could expect higher knowledge spillovers from foreign to local firms and workers. Direct technology transfer through licensing agreements provides another channel for international knowledge diffusion. The grant of licenses to local companies to manufacture inventions developed overseas can improve the skill and know-how within the local community. The grant of licenses to international companies to exploit locally developed inventions provide return to inventors and access to foreign markets. However, firms may be reluctant to license their technology to unrelated firms in countries with weak IPRs protection. Sometimes stronger regimes can reduce the risk of local imitation, thereby raising fees that foreign licensors could charge and causing licensing volume to fall (Yang & Maskus, 2001). Nevertheless, tighter protection would lower the costs of striking licensing agreements, raising incentives to license.

In open economies, stronger IPR protection leads to larger trade flows, however, not necessarily for technology that are patent-sensitive or involves high technology. It also depends on the imitative capabilities and innovative capacity of the country. Since most of the innovation takes place in the developed markets, FDI and foreign licensing are considered as the effective channels for technology transfer. For developing countries, with relatively high levels of innovative potential, the stronger IPR protection required by TRIPs can encourage domestic firms to switch from imitation to innovative activities. Stronger IPR protection in these countries by encouraging technology diffusion through international trade, licensing and joint venture agreements will

also help offset any adverse growth effects from lost imitative opportunities.

### III. REFORMING INTELLECTUAL PROPERTY RIGHTS REGIMES

Many developing countries do not like to adopt higher standards of protection on the grounds that they would foster monopolistic behavior from multinational companies while promising new benefits to local entrepreneurs and consumers. Accordingly, there exists a negative public attitude towards IPRs reforms in the developing world. Nevertheless, developing countries under the TRIPS agreement are committed to bring reforms in their IPRs regimes. Many countries, however, have yet to comply with the provisions set forth in the Agreement. A number of countries will need to adopt comprehensive new legislative and judicial instruments and create new or renovate old institutions for the administration of IPRs, whereas others will only need to modify certain aspects of their legal, administrative, and judicial systems. Many developing countries will face significant financial and institutional challenges in implementing the required changes. Regarding reformation, it is important that IPRs reforms be geared toward maximizing the benefits from intellectual property protection rather than simply serving to avoid complaints under the WTO's dispute settlement system. Specifically, reforms should target local entrepreneurs and facilitate the dissemination of domestic and foreign knowledge. In reforming their IPRs systems, governments in developing countries should match their roles to their capabilities. With a different structure of demand for IPRs protection and more limited government resources in developing countries, it would not be efficient to simply copy the institutions and procedures developed by industrial countries over several decades. A first step for a developing country reforming its IPRs regime should be to support initiative that promote consensus. It is important to bring together all parties those will be affected- research based companies, universities, consumer groups, government agencies, industrial property officers, IPRs lawyers and others- to discuss and evaluate the economic impact of IPRs reforms. Such an exercise can provide useful input for the formulation of new laws and help in identifying adversely affected groups and in the design of appropriate compensatory mechanisms.

It must be borne in mind that policy implications should be country specific, these must fall along the lines of a country's level of development and its level of imitative or innovative capacity. A range of policies that can assist developing countries in enhancing the benefits from TRIPS have been discussed in the literature. These include:

#### A. POLICIES CONCERNING ADMINISTRATION OF IPRS

The administration of IPRs relates mostly to industrial property rights and plant breeders' rights. The tasks of industrial property offices typically fall into two categories: (i) the grant of industrial property rights involving the registration and examination of applications as well as the renewal of

granted rights, and (ii) the publication of industrial property rights or more generally, the information services provided to the public. In the areas of patents, the most resource-intensive task is the examination process of patent applications. Patent examiners need to be up to date in the relevant fields of technology. For patent searches, examiners must have access to historical patent databases and libraries. There are substantial economies of scale in the examination of patent applications. Developing countries may not receive enough applications to justify a cadre of examiners covering every field of technology. Moreover policies related to patent fees, the scope of patentability and the novelty requirements in the patents can all contribute to the development of a domestic innovative sector and to the international diffusion of 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. It is possible, for example, to set lower patent application fees for small and medium sized enterprises than for large firms, thus encouraging innovation by local firms. Patent renewal fees may also rise over time to encourage firms to let patent on mature technology lapse early, thus allowing domestic firms to imitate older technologies. Developing countries can also limit the scope of patents and encourage rapid publication of patent applications, with full disclosure of the technical processes involved in producing the invention and how to put them to commercial use. This will maximize the spillovers to local firms, allowing them to build upon the disclosed knowledge and possibility to invent around the patent. Countries could also set high standards for the novelty requirements of patents in order to prevent routine discoveries from being patented. This could be combined with a system of utility models to encourage local firms to invent around patents and to improve their manufacturing methods.

#### B. 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 ceiling, allowing parallel imports, and compulsory licenses entitling a domestic licensee to exploit the patent for a fixed period of time during the patent life. One possibility for governments to reduce potentially adverse price movement related to IPRs induced market power is to explicitly control prices through reference prices or administrative price ceiling. The government has to control prices in such a way that it allows firms to generate normal profits to recoup R&D investments, while at the same time avoid extreme price hikes which would emerge in an unregulated environment. Compulsory licenses are official permissions to use protected intellectual property without authorization of the right holder. Compulsory licenses are justified to protect interest, such as, national emergencies, social services like health and nutrition, anti-competitive practices, non-commercial use of intellectual property, exploitation of dependent patents, and technology transfer.

Such licenses are permissible under the TRIPS agreement, although certain provisions in the Agreement limit their use.

#### C. COMPLEMENTARY POLICIES

Encouraging local technology development can have both a direct effect on productivity and growth, especially as many of the benefits of R&D are likely to be local in nature, and an indirect effect by encouraging greater technology diffusion. But while encouraging local technological development should be a priority for the relatively more advanced developing countries, the benefits of such policies for the least developed countries are likely to be limited, particularly if they draw scarce resources away from other more pressing activities, such as education and health care. The ability of domestic firms to absorb foreign technology depend upon the existence of an in house R&D capacity. Technical policies, capital market regulations and tax policies could therefore be adjusted to encourage more innovation and in turn technology diffusion. Developing domestic innovation capacity may also lead to increased flows of FDI, which could further increase technology diffusion. Examples of policies to encourage domestic innovation activities include public assistance for basic R&D and public-private research partnership. In order to attract FDI from various countries and Multi-National Companies, developing countries need to improve investment policies and the regulatory framework, since FDI is largely pre-conditioned upon the effective IPRs regimes at the domestic level. Otherwise foreign investors may be discouraged to invest in the apprehension of their know-how being endangered.

#### D. NEW TECHNOLOGIES

The emergence of new technologies has lead to the continuous adaptation of IPRs instruments over the last decade. Although new trends originate almost exclusively in the developed world, it is important for developing countries to participate in the ongoing international debate around IPRs and new technologies, and to take new technologies into account when reforming IPRs regimes. Many of these new technologies promise substantial social and economic benefits to developing countries in the form of new plant varieties suitable for tropical climates, new drugs against diseases prominent in the developing world, distance education via electronic networks, and so on. Again, in adapting IPRs instruments to new technologies, emphasis should be given on the wide dissemination of these new technologies and on facilitating entry of local entrepreneurs in markets for new technologies.

#### E. ENFORCEMENT OF IPRs

IPRs laws and administration are only the necessary preconditions for the protection of intellectual property. Without proper mechanisms for enforcing these rights, protection can be significantly weakened. Intellectual property owners depend on their ability to request court actions to stop others from unauthorized use of their assets. The TRIPS Agreement recognizes the importance of enforceability and

incorporates basic measures designed to assure that legal remedies will be available to right holders to defend their rights. Moreover, the legal system should establish tools such as preliminary injunctions or seizure to effectively stop infringements of IPRs. Enforcement of rights can be a resource-intensive activity.

#### IV. CONCLUSION

The issues concerned in analyzing the role of intellectual property rights in affecting the processes of economic development and growth are complex. IPRs provide an important foundation for the development of modern business structures at nearly all levels of economic development. Nevertheless, the nature of IPRs as supporting mechanisms changes with income and technological advance. IPRs encourage growth more readily in economies that are open to international trade and investment, and firms are more likely to absorb the costs of technology transfer when returns to those investments are supported by strong legal regime. Thus, IPRs, openness, and investments in physical and human capital operate jointly to raise productivity and economic growth. If rights can be centered within a framework of competitive processes and appropriate regulations, these can foster technical change and growth. It must be remembered that stronger intellectual property rights by themselves will not suffice. Stronger IPRs regimes need to be complemented with appropriate collateral policies and institutions.

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