INTELLECTUAL PROPERTY RIGHTS, FOREIGN DIRECT INVESTMENT, AND COMPETITION ISSUES IN DEVELOPING COUNTRIES

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August 1997
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SUMMARY

This paper provides an overview of theoretical mechanisms by which the strength of an economy’s intellectual property rights system could affect inward flows of foreign direct investment and technology licensing. It also reviews briefly the available econometric and survey evidence on these questions and lists new estimates suggesting that the international distribution of US investment in manufacturing is sensitive to variations in patent rights across countries. Intellectual property rights appear to be an important component of broader economic and regulatory policies in terms of attracting direct investment. However, concerns persist that stronger rights will reduce competition and access to information in developing economies as the new global system is phased in. Thus, the paper also discusses issues of competition policy that arise in the context of intellectual property protection.
Intellectual Property Rights, Foreign Direct Investment and Competition

Issues in Developing Countries

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1. Introduction

The global system of intellectual property rights (IPRs) is undergoing profound change as we approach the next century. Numerous developing countries recently have undertaken significant strengthening of their IPRs regimes. Regional trading arrangements, such as the North American Free Trade Agreement, now pay significant attention to issues of regulatory convergence, with particular emphasis on intellectual property rights. Most important is the introduction of the multilateral Agreement on Trade-Related Intellectual Property Rights, or TRIPs, within the World Trade Organization (WTO). Under the terms of TRIPs, WTO members must adopt and enforce strong and non-discriminatory minimum standards of protection for intellectual property.

That the international system is moving toward markedly stronger IPRs is not a surprise when viewed in the context of economic globalization, which is the transcendent commercial and political force of this era. Globalization is the process in which national and regional markets are more tightly integrated through the reduction of government and natural barriers to trade, investment, and technology flows. In this global economy, the creation of knowledge and its adaptation to product designs and production techniques are increasingly essential for commercial competitiveness and economic growth.

Over the long term, stronger competitive pressures tend to encourage adoption of frontier technologies and development of high-quality, differentiated products for both domestic production and export. Indeed, recent experiences in Chile, Mexico, Korea, and Taiwan point toward the need for meeting rigorous quality demands in order to break into export markets as a key component of innovation and product adaptation.

While there is now considerable evidence to support this optimistic view of globalization, such gains do not come without potential costs. Foremost among these is that greater competition changes demands for labor in each country, with unskilled workers bearing the brunt of competitive pressures through declining real wages or rising unemployment. Also important are potential abuses of market power to the extent that larger
international firms are placed into a position of market dominance by virtue of their marketing advantages or technological superiority, though the likelihood of such abuses occurring diminishes with stronger international competition.

This brief review of globalization suggests that emerging countries have strong and growing interests in attracting trade, foreign direct investment (FDI), and technological expertise, although such encouragements must be tempered by accompanying programs to build local skills and ensure that the benefits of competition actually arise. In this context, intellectual property rights are an important element in a broader policy package that governments in developing economies could design with a view toward maximizing the benefits of expanded market access and promoting dynamic competition in which local firms take part meaningfully.

It is beyond the scope of this article to consider these issues in detail and their complex interrelationships. Rather, we focus here on issues of how IPRs interact with incentives for FDI and technology transfer, with consideration of impacts on competition. In the next section we analyze the main determinants of FDI and licensing, both in theory and according to the available economic evidence. In the third section we discuss, from the standpoint of a developing economy, the potential benefits and costs of incoming FDI and technology transfer, focusing on issues of information spillovers, diffusion, and competition. We present the broad outlines of a strategy for implementing stronger IPRs that could attract additional investment and technology while maintaining a balance in favor of dynamic competition. Inevitably, such strategies vary somewhat across countries by level of economic development and technological capability but there are important common denominators. Concluding observations are provided in the final section.

2. Determinants of Foreign Direct Investment and Technology Transfer

Multinational enterprises (MNEs) make multifaceted decisions regarding means by which they can serve foreign markets. These decisions are jointly determined and the choice depends on a host of complex economic and regulatory factors. Intellectual property rights clearly play an important role in these processes, though its importance varies by industry and market structure.

2a. Theoretical Perspectives

For a firm to undertake FDI, it must have a sufficient cost advantage or technical product superiority over firms in the host country to overcome the disadvantages it faces in international management. Thus, MNEs must enjoy some efficiency advantages, meaning
that they bring potential gains to host countries. A convenient framework for thinking about this question is the ownership-location-internalization (OLI) paradigm developed by Dunning (1981). In this approach, MNEs are characterized by some ownership advantage, which could be a tangible asset, such as a proprietary claim in facilities producing key natural resources. More commonly, however, the advantage is an intangible asset, such as a trademark or reputation for quality, or a product or production process to which other firms do not have access, such as a patent or trade secret. Such advantages provide market power and cost efficiencies that provide sufficient incentives to undertake multinational organization and operation. Thus, MNEs tend to be important in industries with high research and development (R&D) intensities, large employment of professional and technical workers, significant reliance on introduction of new and technically sophisticated products, and considerable amounts of product differentiation and advertising (Morck and Yeung, 1992; Grubaugh, 1987; Markusen, 1995).

A key reason that knowledge and information creation are important for MNEs is that knowledge is similar to a public good in that it may be used in several production facilities without reducing its availability for others. Such knowledge is embodied in blueprints, software, chemical formulas, and managerial or engineering manuals, which may be used numerous times at low marginal cost. The implication is that MNEs enjoy scale economies from multi-plant production (Markusen, 1984). A multinational firm can produce its technical knowledge in one location and use it in several plants in different countries, spreading the investment cost of technology development and marketing across numerous facilities. Thus, we observe significant multinational activity in industries in which the development of transferable knowledge and product quality is a key focus of strategy.

Note that this argument is particularly relevant for horizontal FDI, in which firms base strategies for penetrating markets on the economic value of their intellectual assets, such as superior production processes and reputations for quality, performance, and service. It also points out that MNEs find it crucial to be able to support their investments with complementary operations, including service contracts. Economic value is increasingly related to performance of systems, including products, services, information, maintenance, technical upgrades, and close relations between producers and clients. This means that FDI is now less attracted by protectionist tariff walls and more attracted by economies with open access to global markets. It also means that IPRs are taking on increasing importance as a determinant of inward FDI.
Even given some ownership advantage, MNEs still must decide on investment destinations. These decisions depend on characteristics of particular countries, called *location advantages*. Such advantages make it profitable for the firm to produce abroad rather than at home and export the good. Obvious examples of location advantages include market size and growth, local demand patterns, transport costs and distance from markets, low wage costs in relation to labor productivity, and abundant endowments of natural resources. Also important are an adequate and modern infrastructure and transparent government regulatory procedures (Wheeler and Mody, 1992). Location characteristics that enhance the value of knowledge assets include an adequate supply of high-skilled labor, proximity to customers and unimpeded ability to build supplier-customer networks, a vibrant business-services sector that can handle localized needs for marketing and finance, and the strength of the IPRs system.

Finally, ownership and location advantages together may not be sufficient fully to explain FDI because they do not account for the advantages of internal organization over selling goods and licensing technologies on the open market. Rather, MNEs also have *internalization advantages*, which relate to gains from exploiting their intellectual assets within the confines of their international operations (Rugman, 1986). There are numerous reasons why the costs of international transactions may be lower if performed within the confines of a single firm than through arm’s-length contracting. Most of these relate to difficulties involved in writing and enforcing contracts between independent firms when licensing is costly and information is imperfect. In such cases, it may be impossible to develop a satisfactory and enforceable contract, forcing the original firm to acquire a subsidiary to which it transfers the asset (Teece, 1986).

This informational imperfection in the market for technology implies, other things equal, that firms would be more likely to engage in FDI in countries with weaker IPRs and contract-enforcement procedures. An implication is that as IPRs in a particular nation become stronger, firms would tend to choose more technology licensing and joint ventures and less FDI. This is the primary theoretical case in which the strength of IPRs would be negatively associated with FDI flows. It applies most readily to firms that have proprietary technologies that have been expensive to develop but are easily copied, such as pharmaceuticals, agricultural chemicals, and computerized processes. A similar phenomenon is that MNEs may be more willing to retain technical and managerial employees who learn
the technology and who might otherwise defect from a licensee and form their own competing firms.

Multinational enterprises usually experience higher costs of transferring technology through arm’s-length transactions because aspects of the technology that are tied up in the firm’s human capital, management, know-how, and corporate culture are not easily transmitted (Teece, 1977, 1986). This factor becomes more important the more complicated is the technology or management process, helping to explain the prevalence of MNEs in high-technology industries. Transfer costs also depend on the recipient country’s ability to absorb the technology efficiently, indicating that more technology licensing in complicated products and processes would emerge as the human capital base of the economy rises. Also important are the transparency and certainty of the legal and regulatory systems.

This review of the determinants of FDI leaves much room for IPRs to affect investment flows and the operations of MNEs. The various means by which IPRs influence FDI and technology flows are subtle and complex. To sketch an idea of this complexity, consider that a firm with a knowledge-based asset (reputation for quality, new technology, or new product) has several choices in deciding how to service a particular foreign market. First, it can export the good there through standard, arm’s-length trade channels. Second, it can choose to produce locally within the firm by undertaking FDI and controlling the production process. Third, it can choose to license or franchise its asset to an unrelated firm in the host country and allow local production in return for royalties and fees. Finally, it can undertake a joint venture involving some joint production or technology-sharing agreement. These decisions are not made independently and it is possible to observe more than one mode of supply in certain circumstances.

Exports are likely to be the primary mode of supply when transport costs and tariffs are low in comparison to the costs of FDI and licensing. That the volume of exports could depend on the strength of local IPRs has been discussed most fully by Maskus and Penubarti (1995). Overall, empirical evidence indicates that, other things equal, countries with stronger IPRs do attract more imports, though the effect varies across industries.

Foreign direct investment is likely to supplant direct exports of a good where trade and transport costs are high, the fixed costs of building foreign plants is low, local productivity is high relative to wage costs, the size of the host market is large, and the R&D or marketing intensity of the product is substantial. This analysis suggests first that IPRs should take on different levels of importance in different sectors with respect to encouraging
FDI. Investment in lower-technology goods and services, such as textiles and apparel, electronic assembly, distribution, and hotels, depends relatively little on the strength of IPRs and relatively much on input costs and market opportunities. Investors with a product or technology that is costly to imitate may also pay little attention to local IPRs in their decision making, though the fact that imitation has become markedly easier over time in many sectors points to the rising importance of IPRs. 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. Firms considering investing in a local R&D facility would pay particular attention to local patent protection.

This perspective is consistent with results reported in Mansfield (1994), who surveyed 100 major U.S. firms with international operations in 1991. Intellectual-property executives in firms representing six industries were asked their opinions of the importance of IPRs in their FDI and licensing decision and to provide their assessments of the adequacy of IPRs in 16 countries. In no industry was there much concern about IPRs protecting the operation of sales and distribution outlets. In the chemical industry, which includes pharmaceuticals, 46% of firms were concerned about protection for basic production and assembly facilities, 71% for components manufacture, 87% for complete products manufacture, and 100% for R&D facilities. This tendency to be more concerned with IPRs, the higher the stage of production, carried over to all sectors. Overall, the chemical industry was the most affected in its decisions to invest, while in all sectors there was a strong concern about local IPRs in siting R&D operations.

Additional results for selected countries with weak IPRs at the time of the survey are worth noting. India elicited the greatest concern about IPRs, with 80% of the chemical firms surveyed indicating that, due to weak protection, they would not engage in joint ventures or transfer new technologies to subsidiaries or unrelated firms. Interestingly, in chemicals there was little difference between joint ventures and subsidiaries in this regard. Both investments evidently provide foreign firms with approximately the same level of security about their technologies. However, across all countries licensing to unrelated firms was seen as riskier because of weak IPRs. This situation seems to be true as well in machinery. In the other sectors, however, there was little difference in the willingness to transfer technology through various modes according to weakness in intellectual property rights.

That licensing is seen as insecure relative to investment in the high-technology sectors in countries with weak IPRs points up a subtle aspect of intellectual property protection.
Recalling the theory, firms are more likely to undertake FDI than licensing when they have a complex technology and highly differentiated products and when costs of transferring technology through licensing are high (Teece, 1986; Davidson and McFetridge, 1985). As IPRs improve, licensing costs should fall because it becomes easier to discipline licensees against revelation or appropriation of proprietary technology and against misuse of a trademark. Thus, for a given level of complexity of innovations, we would expect to see licensing displace FDI as IPRs are strengthened.

It is useful to summarize the predictions about IPRs, FDI, and technology transfer. First, investment and technology transfer are relatively insensitive to international differences in IPRs in sectors with old products and standardized, labor-intensive technologies. Second, other things equal, FDI representing complex but easily copied technologies is likely to increase as IPRs are strengthened because patents, copyrights, and trademarks increase the value of intellectual assets, which may be efficiently exploited through internal organization. Third, to the extent that stronger IPRs reduce licensing costs, FDI could be displaced over time by efficient licensing. Finally, whatever the mode, the likelihood that the most advanced technologies will be transferred rises with the strength of IPRs.

Turning to technology transfer, recent theoretical treatments of the impacts of IPRs on technology diffusion in growth models bear mixed messages. In some models, technology is transferred through imitation by firms in developing countries. When the IPRs system is strengthened, imitation becomes harder as foreign patents are enforced. The rate of imitation declines and ultimately the global rate of innovation is reduced also. This is because as innovative firms experience slower loss of their technological advantages they earn higher profits per innovation and devote more resources to production, reducing equilibrium R&D spending (Helpman, 1993; Glass and Saggi, 1995).

This result is sensitive to model assumptions and may not hold up to alternative specifications. Indeed, Lai (1997) finds that product innovation and technology diffusion are strengthened under tighter IPRs if production is transferred through FDI, rather than through imitation. This points clearly to the need for developing economies to remove impediments to inward FDI as they strengthen their intellectual property systems. Vishwasrao (1994) demonstrates in a game-theoretic setting that, while the mode of technology transfer is affected by IPRs protection, with internalization through FDI the preferred mechanism in countries with weak patents, the quality of technologies transferred rises with stronger IPRs.
Finally, Yang and Maskus (1997) show that steady-state licensing and technology transfer can increase if the returns to licensing are affected by the strength of IPRs.

Furthermore, an optimistic view comes from studies of international patenting behavior (Eaton and Kortum, 1996). The value of patent rights varies across countries and technology fields, but is typically significant in important developing countries, suggesting that stronger patents would induce further R&D, patent applications, and patent working. There appear to be considerable spillovers of technological knowledge through patenting and trade in patented products.

The importance of technology transfer through trade in technologically advanced inputs (machinery, chemicals, software, producer services, and so on) should also be emphasized. There is evidence that such trade is responsible for significant amounts of productivity transfers across borders (Coe and Helpman, 1995). This suggests that emerging economies have a joint interest in trade liberalization and linking their IPRs systems with those of the developed countries. The resulting gains from productivity spillovers could easily outweigh costs associated with additional market power.

2b. Econometric Evidence

Despite the apparent importance that IPRs could play in FDI decisions, few studies have included the strength of IPRs in different countries as a potential determinant of investment. Three early studies (Ferrantino, 1993; Mansfield, 1993; Maskus and Eby-Konan, 1994) could not find any relationship between crude measures of intellectual property protection and the international distribution of FDI by U.S. multinational enterprises. These articles suffered from limited specification of models and poor measurements of IPRs.

Two recent studies are more noteworthy. Lee and Mansfield (1996) used survey results to develop an index of perceived weakness of IPRs in destination countries on the part of U.S. firms. They regressed the volume of U.S. direct investment in various countries over the period 1990-1992 on this index, along with measures of market size, the past investment stock, the degree of industrialization, a measure of openness, and a dummy variable for Mexico to control for its special investment relationship with the United States. They find that weakness of IPRs has a significantly negative impact on the location of American FDI. Further, in a sample of chemical firms the proportion of FDI devoted to final production or R&D facilities is negatively and significantly associated with weakness of protection. Moreover, the weakness of IPRs had less impact on the decisions of firms with limited ownership (less than 50%) of local affiliates because such firms would be unlikely to transfer
their frontier technologies in any case. From these results, it appears that both the volume and quality of investment are diminished in countries with limited property rights.

An extended approach is taken by Maskus, Blyde, and Penubarti (1997). They account for the joint decisions made by MNEs. In particular, multinational firms may choose to export, raise sales from existing foreign operations, increase investment, or transfer technology directly in response to stronger patent rights. They estimate a simultaneous set of equations to capture these joint impacts, controlling for market size, tariff protection, the level of local R&D by affiliates, distance from the United States, and investment incentives and disincentives provided by local authorities. This is done for a panel of 46 destination countries, using annual data from 1989-1992. The index of patent strength is taken from Maskus and Penubarti (1995).

Table 1 lists the results from the preferred specifications, with coefficients expressed as elasticities. It appears from these calculations that FDI, as measured by the asset stock, reacts positively to patent strength in developing countries. These are elasticities, so that the data suggest that a one percent rise in the extent of patent protection would expand the stock of U.S. investment in that country by 0.45%, other things equal. This is a significantly positive elasticity and, indeed, trails only the responsiveness of FDI to policy incentives. While these results await considerable further testing for their robustness, they suggest that FDI is sensitive to patent rights, consistent with Mansfield’s work.

There is also direct evidence that a policy of weak IPRs in technology-recipient nations reduces the quality of technology transferred. Drawing on a study of collaboration agreements between British and Indian firms, Davies (1977) concludes that difficulties in securing property rights over the profits accruing to technical information raise powerful barriers to information trades between developed and developing economies. Contractor (1980) studies a sample of 102 technology licenses provided by U.S. firms and his regression results support the hypothesis that returns to a technology supplier increases with patent protection in the recipient nation. He finds that technologies transferred to developing countries tend to be significantly older than those transferred to industrialized economies. While these findings are rather dated, they point to the significance of patent regimes in attracting technology through licensing.

3. Foreign Direct Investment and Competition Issues

This review indicates that there is emerging empirical evidence in favor of the hypothesis that FDI flows and licensing rise with stronger IPRs. It seems increasingly to be
taken for granted that foreign direct investment and the acquisition of new technologies are beneficial for the recipient country. As discussed in this section, there is a strong presumption in this direction but it is not a necessary outcome in all situations. Rather, it is important that such flows result in stronger competition in order to ensure these gains for the long term. After a brief review of the potential benefits and costs of these activities, we discuss components of a comprehensive policy approach to enhance the likelihood that stronger IPRs will contribute to more dynamic competition.

3a. Benefits and Costs of Inward FDI and Licensing

Although their impacts vary across countries and over time, FDI and licensing bear considerable promise for improving efficiency and growth in developing countries, particularly those that are scarce in capital, are far from the efficient production frontier, and have limited managerial and entrepreneurial talents. These flows provide access to the technological and managerial assets of foreign MNEs, which provide both a direct spur to productivity and significant spillover benefits as they diffuse throughout the economy. This diffusion comes through numerous channels, including the movement of newly trained labor among enterprises, the laying out of patents, product innovation through the legitimate “inventing around” of patents and copyrights, and the adoption of newer and more efficient specialized inputs that reduce production costs (software is particularly important in this context). Further, the introduction of efficient and competitive international enterprises can stimulate local entrepreneurship and innovation by increasing competition and raising demands for sub-contracting. There could also be a beneficial demonstration effect for local firms.

Thus, successful adoption of competition-enhancing FDI and licensing should materially improve the knowledge base of the economy and move it toward the globally efficient production frontier. There is clear evidence that developing countries suffer from lagging labor productivity and managerial efficiency, related in part to a failure to adopt newest technologies (Baumol, et al., 1992). Recent experiences in numerous developing economies indicate that liberalization of trade policies and investment regimes can have significantly positive growth impacts in the medium term, even if there is some initial economic adjustment period. There are good reasons to expect these growth effects to be long-lasting because wider access to knowledge allows economic expansion to continue without necessarily running into diminishing returns. Additional benefits include access to a
wider variety of specialized products, inputs, and technologies, a deeper and better-trained skilled labor pool, and rising real wages.

These beneficial impacts of inward FDI and technology transfer do not come without costs. If there are only insignificant linkages to other economic sectors, FDI may operate in enclaves, with limited spillovers into technologies adopted and wages earned by local firms and workers. This limited diffusion could be insufficient to compensate the economy for the profits taken out by the MNE. This situation is aggravated to the extent that MNEs engage in abusive practices of their protected market positions in exploiting stronger IPRs. Such abuses could emerge in setting restrictive licensing conditions, requiring technology grant-backs, engaging in tied sales, tying up technology fields through cross-licensing agreements, establishing vertical controls through distribution outlets that prevent product competition, and predation against local firms. Thus, countries could find certain sectors of their economies coming under increasing dominance by MNEs through use of their brand names, patented technologies, and marketing skills.

While these are possible and real costs, there is little evidence that they are systematic problems in many countries. More fundamentally, they relate to the failure of an economy to erect a policy system that promotes the maximum gains from FDI. Enclave production, for example, makes sense only when the subsidiary is encouraged to produce only for export rather than to compete locally as well. Firms that are provided full access to local and regional markets are more likely to erect complementary business systems (production, distribution, and services) that compete more widely in the economy and generate greater spillover benefits. Abusive practices are possible only to the extent that monopoly positions are protected and tolerated. Many developing economies have not yet developed appropriate competition systems to deal with these issues.

3b. Intellectual Property Rights and Competition

Intellectual property rights do not necessarily generate monopoly market positions that result in high prices, limited access, and exclusive use of technologies. They are more similar to standard property rights, in that they define the conditions within which a right owner competes with rivals (UNCTAD, 1996). Except in particular sectors, cases are infrequent in which a patent holder or copyright owner becomes a strong monopolist. Rather, there are likely to be competing products and technologies, including new ones that do not infringe the property right. Much depends on the scope of the product and process claims protected and
on the technical characteristics of the invention. For example, narrow patent claims encourage follow-on invention.

Thus, IPRs may encourage dynamic competition, even if they may sometimes diminish competition among existing products. Advocates of strong IPRs maintain that they create competition with long-run consumer benefits. For example, survey evidence indicates that patent disclosure requirements are significant mechanisms for diffusing technical information to competitors within a short period (Mansfield, 1985). The information may then be used to develop a new product or process that competes with the original. This incremental nature of innovation is a key fact in most technical progress and generally builds dynamic competition rather than investing unassailable market power. Thus, patents, copyrights, and other IPRs can raise the costs of imitation but likely do not materially retard competing product introduction. Moreover, patents and trademarks provide greater certainty to firms, lower the costs of transferring technology, and facilitate monitoring of licensee operations. Additional licensing could then result in greater adaptive innovation in user firms.

In this view, stronger IPRs in developing economies promise long-term growth and efficiency benefits as they attract additional FDI and licensing and spur further follow-on innovation and technology spillovers. This outcome is far more likely, however, if the implementation of stronger IPRs is accompanied by complementary policies that promote dynamic competition. Important complements include further market liberalization, expanded establishment rights in services, removal or rationalization of investment regulations, assurances of stable and transparent tax regimes, and development of modern and efficient infrastructure. It is also important to promote a competent indigenous technological capacity. This goal calls first for public and private investments in education and training and the removal of impediments to the acquisition of human capital. It also points toward the development of national innovation systems that promote dynamic competition (UNCTAD, 1996).

3c. Issues for Competition Policy

Despite the potential long-term gains from stronger IPRs, fears persist in many developing economies that their adoption will result in anti-competitive practices, including markedly higher prices for key products and technologies, restrictive licensing contracts, and vertical restraints. Moreover, tighter patents and trademarks could interact with local distribution laws to enhance positions of market power for foreign firms and their licensees.
Accordingly, it is important for developing countries to consider means for promoting effective competition in the face of strengthened property rights. This issue pertains to both implementation of new IPRs and the introduction of competition policies.

In implementing minimum standards for IPRs as required by the TRIPs agreement or in other policy initiatives, emerging economies will need to strike a balance between needs for technology acquisition, market access, and diffusion (Reichman, 1993). Most nations will wish to adopt a set of IPRs regulations that do not significantly disadvantage follow-on inventors and creators, thereby promoting dynamic competition. The TRIPs accord provides considerable leeway for countries to set terms of protection in their specific interests, so long as they meet the minimum requirements and their policies do not result in “nonviolatory nullification and impairment” of expected benefits under the agreement. There are numerous mechanisms by which countries may limit the protective effects of IPRs in an attempt to tilt the balance toward follow-on innovation (UNCTAD, 1996). Among the most important are sensible fair-use exemptions in patents and copyrights, compensated compulsory licensing under tightly defined conditions, and carefully defined limits on the scope of patent protection.

For example, countries might award narrow patent claims and limit the doctrine of equivalents in comparison with the highly protective standards now found under U.S. practice. Similarly, while countries must develop sui generis means for protecting plant varieties, they remain free to recognize the farmers’ privilege exemption. Nothing in TRIPs requires nations to provide patents for computer software while the agreement allows for reverse engineering by honest means for purposes of developing compatible new programs. Finally, to some degree it remains within the purview of each country to define honest and dishonest practices among competitors attempting to decipher their rivals’ trade secrets. Thus, in setting standards to comply with TRIPs, countries are able to exercise discretion that will affect the terms of dynamic competition in each market. In this process, governments will need to consider the tradeoffs between needs of potential foreign investors, local innovators, and consuming interests.

As stronger IPRs emerge in developing countries, it will be important to implement effective competition policies to ensure that the new systems are used advantageously. By tradition, competition law is nation-specific (outside the European Union). The TRIPs agreement allows each member to set its own regulatory system as regards competition issues in IPRs. Relatively few emerging economies have well-articulated anti-trust regulations.
Thus, as stronger IPRs are adopted, nations will be building competition systems on virtually blank slates, allowing them to choose from different legal and regulatory approaches.

While this is a highly complex area, four issues arise at the top of the competition agenda in IPRs. First, countries are not prevented by TRIPs from erecting pricing regulations in interests of public health or other social objectives. Thus, multinational pharmaceutical and chemical firms could well find some of their gains from stronger product patents eroded by price ceilings. Whether such an outcome would make particular markets more attractive for investment and trade remains to be seen. Second, countries must decide whether to adopt strict standards for exhaustion of intellectual property rights, borrowing from the experience of developed economies in regional integration schemes. Doing so would limit the ability of MNEs and local licensees to engage in international price discrimination, the discouragement of which may not necessarily be beneficial in all cases. Third, governments must consider how stronger IPRs will affect competition among firms that are protected by sole-distributorship laws.

Fourth, and most significant for MNEs, governments will need to develop a capacity for monitoring, or regulating through the courts, terms of licensing contracts with a view toward protecting competition. The key point here is that such regulation is aimed at ensuring competition rather than simply to alter contracts in favor of local firms. This observation indicates the importance of adopting competition systems that are non-discriminatory and transparent. Failure to do so likely would result in a marked slowdown of incoming FDI and technology flows.

4. Concluding Remarks

The fundamental message in this article is that, while there are indications that strengthening intellectual property rights can be an effective means of inducing additional inward FDI, it is only a component of a far broader set of important influences. Emerging economies should recognize the strong complementarities among IPRs, market liberalization and deregulation, technology development policies, and competition regimes. These are complicated issues, leading to complex tradeoffs for market participants. Governments in emerging economies would do well to devote considerable attention and analysis to means for assuring they will achieve net gains from stronger IPRs and additional IPRs and licensing over time.
References


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Table 1. Elasticities of Modes of Supply with respect to Domestic Characteristics and Policies

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</table>

Source: Maskus, Blyde, and Penubarti (1997)

Note: *Coefficient is not significantly different from zero. Asset stock is total assets of foreign non-bank affiliates of U.S. parents in $ millions; Affiliate sales is total sales of foreign affiliates in $ millions; Intrafirm exports to affiliate is U.S. exports shipped to affiliates in $ millions; Patent applications is number filed in the host country; Real GDP in the host country is in $ billions; Tariff level is tariff revenues divided by total imports; Affiliate R&D is expenditure on R&D by foreign affiliates in $ millions; Distance is kilometers of capital city from Washington, DC; Incentives is the number of affiliates that received tax concessions in the host country divided by the number that received tax concessions in all the sample countries; Disincentives is number of affiliates required to employ a minimum amount of local personnel divided by the number of affiliates that are so constrained in all the sample countries; Patent strength is an endogeneity-corrected index of patent laws and enforcement.