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# The Rise of Global Intellectual Property Rights and Their Impact on Asia

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# Asia Pacific

I S S U E S

**Analysis from the East-West Center  
No. 23**

**August 1995**

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**SUMMARY** Protection of intellectual property such as patents, copyrights, and trade secrets has been one of the most contentious issues between the United States and Asia—most recently, raising fears of a U.S.-China trade war. Strong U.S. and European pressure and changes in the world economy have induced Asian countries to strengthen their laws and enforcement over the past decade. New provisions in the recent World Trade Organization (WTO) Agreement will demand even stronger measures. Government officials in the West have long contended that Asia-Pacific countries and other developing nations would benefit from stronger intellectual property rights (IPR), but theoretical models do not support this view, and actually strengthened laws brought very different results in the Japanese and Korean pharmaceutical industries. These cases and the recent U.S.-China friction, as well as some basic differences in Western and Asian IPR cultures, may mean more obstacles on the road to harmonious IPR agreements.

***The new world trade agreement will force almost all countries to do more to protect intellectual property rights***

The development and protection of intellectual property rights is a key element in fostering the development of new technologies, products, and creative works. Without intellectual property laws, other people can treat intellectual innovations as common property and use them to make and sell competing products.\* This reduces the return to the original inventors or artists and discourages other intellectual innovations, which can have drastic consequences for society because technological and creative change is the source of much of national income growth. Strong IPRs not only assure that inventors obtain the fruits of their labors, but also allow the transfer of information about new intellectual innovations into the public realm. After a patent is granted, the patent documents are made available to the public as a way of repaying society for the protection enjoyed by the originator, thereby allowing others to build upon the work. Strong IPR protection may also encourage foreign direct investment in a developing country (or, more important, not discourage it by lack of an IPR regime). Finally, without stronger IPRs, firms in developed countries are not likely to license their state-of-the-art technology to firms in developing countries, thereby depriving these firms (if they cannot imitate the technology) and the developing society of the technology's benefits.<sup>1</sup>

The conventional wisdom, therefore, is that strong IPR laws are a good thing for developing countries. New theoretical and empirical work in economics, however, has challenged this idea, and businesses and governments in developing countries have frequently opposed adopting strong intellectual property rights. Nonetheless, since the early 1980s the United States has pushed for increased standardization and strengthening of intellectual property rights in Asian developing countries. So the question is, will stronger intellectual property rights ultimately help or impair economic growth in Asia's poorest developing countries?

\* Of course, the patent system protects the embodiment of the idea, while the copyright system protects only the expression of the idea. The patent system does not prevent an individual from using the information in the patent to develop another new product.

### **From Weak IPR Conventions to a Strong WTO Agreement**

Before the dramatic changes of the 1990s, international agreements on intellectual property were contained in four conventions. The Paris Convention of 1883 covered inventions, trade names, trademarks, service marks, industrial designs, indications of source, and appellations of origin. Later conventions covered in similar fashion copyrights (in Berne in 1886), sound recordings (Rome 1961), and layout designs of integrated circuits (Washington 1989). These conventions, however, all had inadequate mechanisms to resolve disputes or none at all, and some also lacked minimal standards of protection.

The mammoth WTO Agreement in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) of 1994 includes surprisingly strong provisions that will force almost all countries to strengthen their IPR laws. These Trade-Related Intellectual Property Rights (or TRIPs) provisions force countries to agree to the provisions of the four previous IPR agreements; they also bind them to dispute resolution procedures administered by the new World Trade Organization. Other provisions require nations to give foreign intellectual property the same treatment accorded their own; prevent countries from excluding certain products (i.e., pharmaceuticals) from patents; protect pharmaceutical products in "the pipeline," i.e., products granted patents in some countries prior to the TRIPs Agreement but which have not yet received regulators' approval to be marketed; and require protection for plant varieties, computer programs, and databases. Developed countries were given until 1996 to comply with TRIPs, developing countries until 2000, and the least developed countries until 2005. There is also a five-year moratorium (until 2000) on all countries using the WTO Agreement's dispute-resolution procedures to resolve IPR disputes. This increases the likelihood that the United States will continue to use unilateral pressure to resolve IPR disputes, at least until the moratorium expires.<sup>2</sup>

### **Western Pressure, Asian Reaction**

In the 1980s the United States imposed strong pressure on violators through the "Special 301" amendment to U.S. trade law using a bewildering number of threat levels—for example, countries could be placed on a "watch list," "designated" for such a list but not yet placed on it, and so forth. In the last 10 years, virtually all Asian countries have been threatened for inadequate protection of patented pharmaceuticals; copyrighted first-run films, videocassettes, sound recordings, and personal computer software; and a wide variety of entertainment and fashion trademarks. Some were also pressured by domestic interests who would gain from stronger IPR laws; Hong Kong's decision to strengthen enforcement of its copyright laws, for example, coincided with the rise of its popular music industry in the 1980s.

The international pressure, coupled with the increasing industrial and service orientation of Asian economies, prompted most to make major changes, although some have far to go. Indonesia, for example, will need much institutional change over the next five years to comply with the WTO. Others are finding changes difficult due to domestic pressures. The Philippines agreed two years ago to strengthen IPR protection, but its legislature has not yet passed implementing legislation. India, at the top of the watch lists for the past decade—primarily over pharmaceutical products—signed the WTO Agreement and began to accept patent applications for pharmaceutical products this year. But the changes are unpopular and the Upper House of Parliament has balked at enacting the required changes in patent law.<sup>3</sup>

By early 1995, most of the targeted Asian countries had brought their laws relatively close to U.S. standards—but the focus of U.S. and European pressure had already shifted from stronger legislation to stronger enforcement, especially of computer software and entertainment copyrights. Some Asian countries have devoted more resources to enforcement (some to good effect, like Malaysia, others not as successfully, like the Philippines). Singapore has prosecuted software pirates and raided electronic

bulletin board services that download copyrighted software. In Thailand, enforcement activities have been expanded in Bangkok and other provinces, but illegal use of computer software remains extensive; an estimated 90 percent of computer software in use has been illegally copied, and government raids against retail stores appear to be ineffective. The illegal use of trademarks is also a problem, but progress is being made in ending distribution of copied films. Many foreign corporations have taken advantage of changes in Asian IPR laws reducing the cost of bringing private enforcement actions; the Walt Disney Company, for example, has been aggressively targeting illegal users of its cartoon characters in Singapore and Indonesia.

The recent U.S.-China IPR dispute is the most dramatic enforcement controversy and shows that the new WTO provisions have not ended controversy over IPRs. During the 1980s China enacted intellectual property legislation and opened patent and copyright offices in Beijing, but enforcement was sporadic and somewhat selective. U.S. authorities complained repeatedly throughout 1994 that many Chinese firms were violating U.S. copyrights on a variety of goods, including compact discs, laser discs, and audio cassettes. In February 1995, the United States imposed retaliatory tariffs on many Chinese goods, and China quickly retaliated by imposing tariffs on U.S. goods. But a potential U.S. veto on China's entrance into the WTO, coupled with its dependence on the United States as an export market, prompted China to agree in late February to strengthen its copyright laws and to close down some compact disc factories that had been violating U.S. copyrights.

### **Will Asia-Pacific Countries Gain from Stronger Global IPRs?**

Until recently, there was little theoretical or empirical research on whether developing countries would gain from stronger domestic laws protecting intellectual property. But researchers have recently devoted extensive resources to developing theoretical models and to measuring the effects of stronger IPRs.<sup>4</sup> One theoretical analysis by M. Scott Taylor

**Most Asian countries have toughened their IPR laws, but Western countries want better enforcement**

concludes that strengthening IPR protection can produce a one-time-only decrease in relative wages for the developing country, but it may also lead to a permanent increase in the country's growth rate. Keith Maskus and Mohan Penubarti have found that "stronger patent laws attract greater bilateral trade across all nations with this effect being particularly pronounced in the developing countries." But increased trade does not necessarily imply a higher level of welfare for the developing country. R. P. Rozek argues that patent protection is critical if developing countries are to move to the technological frontier. Some analysts argue that although stronger IPRs may not necessarily encourage more innovation within a developing country, they will increase foreign direct investment which will transfer valuable skills to the domestic labor force. Yet in a recent empirical analysis of the response of foreign investment to stronger IPR protection, Maskus and Denise Eby-Konan found that variations in IPR protection have little impact on foreign investment.<sup>5</sup>

Elhanan Helpman's comprehensive and influential model of IPR regime changes indicates that tighter intellectual property rights hurt the developing nation, and if the rate of imitation is sufficiently small, benefit the developed country. In the absence of foreign direct investment, both parties lose when imitation rates are low; when imitation rates are high, the developed country gains at the expense of the developing. A striking conclusion is that the developing country never gains from stronger intellectual property regimes until it is ready to engage in research and development at the frontiers of knowledge. As developing countries make the transition to producing new frontier technologies and products, they will then have incentives to strengthen their IPR laws and regulations.

My own model builds on Helpman's fundamental insight<sup>6</sup> but notes that foreign pressure to strengthen IPR laws may benefit some more-advanced developing countries, such as Singapore and South Korea. In such countries, industries capable of producing new technologies that would benefit from a stronger IPR regime are often small and poorly organized due to the lack of such protection.

Foreign pressure may help override powerful domestic lobbies that would suffer losses under a stronger IPR regime. In other countries, such as Indonesia, foreign pressure to adopt a stronger IPR regime may be premature, as no sector has the potential to develop new frontier technologies. In this case, Helpman's analysis applies: foreign pressure produces a gain in the welfare of the developed country but a loss in the welfare of the developing country.

The history of the pharmaceutical industries in Japan and South Korea shows how the effect of stronger intellectual property rights will vary greatly depending on the nature of the developing country's industry. Japan formerly protected processes for making drugs rather than specific drugs themselves (which can allow a manufacturer who can figure out and slightly modify the process to make the drug without infringing upon the patent). Japan *voluntarily* strengthened its IPR regime by switching from process to product patents in 1975. The result, according to the study by myself and Akihiko Kawaura, was that the value of Japanese drug firms actually went *up* by 25 percent.<sup>7</sup> Some companies lost and some gained; those gaining spent a lot on research and development and had low process patent rates (meaning they were doing a lot of original research and development). The losers had less research and development and high process patent rates (meaning they were imitating others). We concluded that the patent regime was changed only when government and business leaders were confident that Japanese firms were capable of producing new, internationally marketable pharmaceuticals.

South Korea, on the other hand, changed its patent laws a decade later under extreme pressure from the United States.<sup>8</sup> Following implementation of pharmaceutical product patents in 1987, the value of South Korean pharmaceutical firms went down 61 percent over the 14-month transition period. The reason for this was simple: the South Korean industry had never developed a new drug that was successful on the international market. The firms' expenditures on research and development were well below those of other countries; research

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and development employees constituted 1.76 percent of the total employees in South Korea pharmaceutical firms, compared with 23.14 percent of U.S. firms and 18.59 percent of Japanese firms. Instead, they absorbed technology by imitation or foreign direct investment. Being far from the technological frontier, the short-run effect of stronger IPR was to induce higher royalty payments to foreign pharmaceutical firms.

The critical question for most countries is not whether they strengthen intellectual property rights, but when. At some point in a country's development, new technology and creative products will emerge at a rate that is sufficient to warrant adoption of stronger IPR. There is, admittedly, a chicken and egg problem: if you do not have IPR laws in place, intellectual innovations may not occur because they are not yet protected. But currently, many developing countries simply do not yet have the potential for internationally important innovations to be developed. An instructive parallel comes from U.S. history. Throughout the last century, the United States did not respect British copyrights although the British abided by U.S. copyrights—a major issue in the relations of the two countries at the time. U.S. policy changed only after World War I. In the same way, Asian firms have resisted IPR protection but can be expected to favor stronger IPR after they produce products embodying intellectual innovations that have value on the world market.

Even if researchers agree that developing countries will often suffer at least short-term losses due to stronger IPR, estimates of the effect vary widely. Much work has been done on India's upcoming switch to protecting pharmaceutical products rather than processes, the same change made earlier by Japan and South Korea. Most researchers agree that Indian pharmaceutical firms will be forced to enter into licensing agreements with foreign firms and pay royalties, but the impact on consumers is disputed. Maskus and Eby-Konan observe that the drug industry will probably have an oligopoly of two or three firms rather than perfect competition, so switching to product patents will cost Indians

between \$95 million and \$1.279 billion. Jayashree Watal, improving on these estimates with product-specific data, estimates that only 7 percent of the entire Indian pharmaceutical market would be affected and only \$67 million lost. Arvind Subramanian, taking into account efficiency gains from shutting down domestic plants using inferior production processes, concluded the effect could range from a loss of \$1.279 billion to a gain of \$273 million. The estimates generally support the notion that a country not yet at the technological frontier in an industry will lose if the IPR regime is strengthened, but also indicate that the losses may not be as large as some consumer groups and developing country industries have alleged.<sup>9</sup>

So will Asia-Pacific countries gain from the provisions of the WTO Agreement that require most to strengthen their IPR regimes? It seems clear that some developing countries will see short-term losses as additional royalty payments to foreign firms push consumer prices higher without producing more foreign investment or higher expenditures on research and development. These countries would be better off if they moved more gradually toward strong IPR. Losses from the IPR provisions, however, may be outweighed by gains from other parts of the WTO Agreement that provide enhanced access to Western markets for agricultural, textile, and manufactured products.

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**Major Unresolved IPR Issues:**

Given that most countries apparently will not benefit initially from stronger IPR laws, IPR issues may become more rather than less contentious in the near future. Outlined below are several significant issues to be dealt with in the near future.

**Enforcement of computer software copyrights.**

Copying of computer software is likely to remain a significant problem in Asia despite increased enforcement efforts—and even strong efforts may not satisfy critics.<sup>10</sup> Malaysia's IPR enforcement unit, for example, has adopted a stringent policy of seizing computers in corporations and government offices when authentic software disks and manuals cannot

***Much of the Japan-U.S. controversy over patents stems from different views on how broad patent coverage should be***

be produced. Although this policy is arguably stronger in some respects than existing enforcement policies in the United States, U.S. authorities still have a long set of enforcement complaints against Malaysia—even though they acknowledge the marked improvement in enforcement. The growing political influence of the U.S. software producers lobby makes it unlikely that U.S. governmental pressure will ease. The problem, however, may be short term since several Asian countries, particularly India, have the potential for significant growth in their own domestic software industries. As the use of computers grows, the demand for programs using the domestic language and customs will increase rapidly, but development of a domestic software industry may not arise if IPRs in software are not enforced. Therefore, Asian governments are likely to increase IPR enforcement independent of pressure from the United States.

**Plant varieties.** Many Asian countries do not provide for the protection of plant varieties, which is extremely shortsighted since many have tropical rainforests containing thousands of potentially valuable species. Even tiny Singapore, with only 80 hectares of rainforest, has more plant species than exist in all of North America. Only Malaysia is mounting a large effort in this area. Some groups are afraid that IPR protection for plant varieties will restrict their access to rain forests in which they have had traditional gathering rights. A regional conference focused on this issue would be useful.

**Pharmaceuticals.** Although the foreign pharmaceutical industry remains concerned about a lack of protection for pharmaceutical products still in the pipeline in Thailand and Indonesia, the issue will be resolved in three to five years as new drugs reaching the market will have patents issued under current patent laws. As the pipeline issue wanes, however, the foreign industry's concern over price controls is likely to reappear. It is unlikely that domestic pharmaceutical firms in Asia will develop new products over the next 5–10 years. Increased patent protection for pharmaceutical products will produce higher prices and a flow of royalty payments to

foreign licensors. “High” drug prices will continue to be a staple of populist political campaigns in many countries (in particular India and Thailand). Price controls on pharmaceuticals already exist in many countries (such as Japan) and could prove to be a popular measure in other countries.

**U.S. laws.** While the United States has pressured Asian countries to strengthen their IPR laws and enforcement, complaints have also been lodged against U.S. laws, specifically that they:

- Retain a “first-to-invent” rule for assigning priority to competing patent claims, while virtually all other countries use a “first-to-file” rule.
- Are not fully in accord with TRIPs even after changes to comply with the GATT Uruguay Round. Specific areas of noncompliance include overly restrictive requirements to copyright databases; the lack of “performers’ rights” protection for live dramatic performers and dancers; compulsory licensing of cable transmissions of primary broadcasts and superstations; and allowing the use of geographical indications for wines and spirits produced outside the named area.
- Contain enforcement provisions (Section 526 of the Tariff Act of 1930) that violate the national treatment provisions of TRIPs and previous IPR conventions.
- Have no registration system of design protection. The U.S. design system’s overly strict requirement has eliminated protection for all but the most novel designs (those considered “unobvious”). Other countries such as the United Kingdom, Australia, and some Asian countries provide much stronger statutory protection for less innovative designs.

**Narrow vs. broad patents.** A consistent international policy is needed on the scope of patent protection and licensing. Some countries tend to protect patents in a very narrow sense, so that even a minor advancement can be patented; others provide such broad protection that only major advances—however that is defined—can be patented. These views lead to tremendous differences in licensing laws among different industries and countries.

Japan, for example, issues relatively narrow patents while the United States issues relatively broad patents. This accounts for much of the U.S.-Japan controversy over patents. In a system with narrow patents, a single company is unlikely to control all of the essential elements of a technology, and so the Japanese system encourages the cross-licensing of technology among firms in an industry. By contrast, in a system with broad patents, one company may control all critical elements of the technology. A U.S. patent owner can "just say no" to competitors wanting to use its patented technology.

**Intellectual property courts.** The United States has recently brought pressure on some ASEAN countries, in particular Thailand, to adopt specialized intellectual property courts along the lines of the special U.S. federal appeals court set up in the 1970s and credited with standardizing and strengthening enforcement in the United States. Special IPR courts may be useful in Asia if they combine criminal and civil cases in one court as it could in Thailand and if the volume of cases is large enough.

**Asia patent office.** The European Patent Office has worked well, and while Asian copyright laws have significant differences, patent law and trademark laws are very similar. A firm could save millions of dollars by getting one patent application for all member countries. Some important issues would have to be resolved, such as where the central office would be located, what language would be used for applications, and how patents would be adjudicated.

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### Conclusion

The convergence of IPR regimes in the Asia-Pacific region sets the stage for further economic integration and the standardization of economic regimes in each country, which can have disadvantages as well as substantial benefits. This world standardization will make institutions less adaptable to political and economic changes, and increase the cost of experimenting with alternatives. Most important, standardization involves a loss of control over major domestic economic policies. And a world trading

regime will not stop countries from seeking advantages over each other. In a world in which the WTO Agreement constrains tariffs to low levels and increasingly restricts nontariff barriers to trade, countries search for other dimensions upon which to gain an advantage in trade. Still, the dynamic growth of nations belonging to the European Union provides strong evidence of lasting benefits stemming from harmonization and integration.<sup>11</sup> Despite the short-term losses which TRIPs may impose on some developing countries, the entire WTO Agreement holds forth the promise of greater economic integration, increased specialization, reduced uncertainty, and generally higher economic growth in Asia. The losses accruing from TRIPs to some developing countries will, however, not be ignored by Asian politicians or losing interest groups. It is safe to say that the new global intellectual property rights will surely continue to generate domestic controversies in Asia as well as international disputes.

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### Notes

1. See the excellent survey papers on the economics of IPRs in the Winter 1991 issue of the *Journal of Economic Perspectives*.
2. For discussions of TRIPs, see Reichman, J.H. 1994. Further Reflections on the TRIPs Components of the GATT's Uruguay Round. Unpublished paper. Washington University Conference on East Asian Intellectual Property Law, St. Louis, Missouri, February 24-27, 1994; and Primo Braga, C. A. 1995. Trade-Related Intellectual Property Issues: The Uruguay Round Agreement and its Economic Implications. Unpublished paper. World Bank Conference on The Uruguay Round and the Developing Economies, January 26-27, 1995.
3. For an overview of recent IPR changes in the ASEAN countries, see La Croix, S. J. 1994. *Intellectual Property Rights in ASEAN and the United States: Harmonization and Controversy*. Business Environment in ASEAN No. 14. Private Investment and Trade Opportunities (PITO). Honolulu: East-West Center. For an overview of IPR law in Asian countries as of the mid-1980s, see Naya, S., K. S. Sandhu, M. G. Plummer, and N. Akrasanee, coordinators. 1989. *ASEAN-U.S. Initiative: Assessment and Recommendations for Improved Economic Relations*. Honolulu: East-West Center and Singapore: Institute for Southeast Asian Studies; Gadbaw, M., and T. Richards, eds. 1987. *Intellectual Property Rights: Global Consensus, Global Conflict?* Boulder and London: Westview Press. For a review of the literature on developing countries strengthening IPR regimes, see Siebeck, W. E., ed. 1994. *Strengthen-*

**The new global IPR system is likely to generate more domestic and international controversy**

ing *Protection of Intellectual Property in Developing Countries: A Survey of the Literature*. World Bank Discussion Papers, No. 112.

4. Taylor, M. S. 1994. TRIPs, trade, and growth. *International Economic Review* 35: 361–81; Maskus, K.E. 1990. Normative concerns in the international protection of intellectual property rights. *World Economy* 13: 387–409; Grossman, G. M., and E. Helpman. 1994. Technology and Trade. NBER Working Papers Series No. 4926; Helpman, E. 1993. Innovation, imitation, and intellectual property rights. *Econometrica*. 61 (November): 1247–1280 (as well as the more complete list of theoretical references in the latter).

5. Maskus, K. E., and M. Penubarti. 1994. How Trade-Related Are Intellectual Property Rights? Dept. of Economics, University of Colorado at Boulder, p. 17; Rozek, R. P. 1987. Protection of intellectual property rights: Research and development decisions and economic growth. *Contemporary Policy Issues* 5(July): 54–65; Maskus, K. E., and D. Eby-Konan. 1994. Trade-related intellectual property rights: Issues and exploratory results. In A. V. Deardorff and R. M. Stern, *Analytical and Negotiating Issues in the Global Trading System*. Ann Arbor: University of Michigan Press.

6. La Croix, S. J. 1992. The political economy of intellectual property rights in developing countries. In J. Roumasset and S. Barr, eds., *The Economics of Cooperation: East Asian Development and the Case for Pro-Market Intervention*. Boulder: Westview Press.

7. Kawaura, A., and S. J. La Croix. 1995. Japan's shift from process to product patents in the pharmaceutical industry: An event study of the impact on Japanese firms. *Economic Inquiry* (January): 89–103.

8. La Croix, S. J., and A. Kawaura. 1995. Product patent reform and its impact on Korea's pharmaceutical industry. *International Economic Review* (forthcoming).

9. See Maskus and Eby-Konan as well as Watal, J. 1994. Introducing Product Patents in the Indian Pharmaceutical Sector—Some Implications. Unpublished manuscript. Indian Council for Research in International Economic Relations, New Delhi; and Subramanian, A. 1995. Putting some numbers on the TRIPS pharmaceutical debate. *International Journal of Technology Management* 10(2, 3): 252–268.

10. There is considerable controversy over the degree of protection for computer software that is optimal. For example, Joseph Farrell argues that intellectual property protection for software with strong network features (i.e., products whose value to each user is greater if there are more users) should be weaker than for non-network software. See Farrell, J. 1995. Arguments for Weaker Intellectual Property Protection in Network Industries. John M. Ohlin Working Papers in Law, Economics, and Institutions. University of California, Berkeley

11. See Eichengreen, B. Institutions and Economic Growth: Europe after World War II. Center for Economic Policy Research Working Paper No. 973 for an extended discussion.

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