IDE APEC STUDY CENTER
Working Paper Series 96/97 - No. 8

TRIPs and Policies of APEC on Intellectual Property Rights: Economic Theory and Political Reality

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March 1997
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I. Introduction

After seven years of prolonged negotiation, the General Agreement on Tariffs and Trade (GATT) Uruguay Round finally reached a conclusion in December 1993. Severe antagonisms among member countries (Contracting Parties) and subsequent

political compromises made the outcome somewhat complicated. The Uruguay Round, nevertheless, did have significant successes. It resulted in many important agreements which oblige Contracting Parties to create and/or improve (or even abolish) their local economic systems and practices, so that trade barriers can be eliminated. These agreements came into effect in January 1995 and have been administered by the newly-established World Trade Organization (WTO).

Improved protection of intellectual property rights (IPRs) is also among the Uruguay Round agreements. Protection of IPRs has been increasingly recognized, at least by developed nations, as a major factor in facilitating international trade and foreign direct investment in high-tech products. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), therefore, requires members of the WTO to secure high level protection of patents, trademarks, designs, copyrights, trade secrets, and other forms of IPRs, not only for local industries but also for foreign industries (under the principles of National Treatment and Most-Favored-Nation). It is "high" level protection because agreed standards of protection for TRIPs are much stronger than those for conventional international treaties. 4 Under the Uruguay Round agreement, members of the WTO that fail to give right holders strong protection pledged to amend their national IPRs laws. Depending on the economic development stages of individual countries, these amendments are to be implemented by 2006 at the latest.

TRIPs has been endorsed by APEC. In November 1995, the APEC Osaka Action Agenda (OAA) recognized the importance of TRIPs and encouraged members to clarify the aspects of IPRs which should be handled by APEC. APEC also announced that all APEC member countries would reconstruct their national IPRs systems so that APEC could realize full implementation of TRIPs by 2000 (not by 2006). To report the status of the TRIPs-implementation process, and to discuss the possibility of future cooperation, IPRs experts of all APEC members countries met in Tokyo in August 1996. Collective efforts to strengthen the enforcement of IPRs and to deter their infringement across the borders were highly recommended. However, APEC consists of non-homogeneous countries with different economic development, technological capability, industrial structure, and market size, and this poses some problems for the enactment and enforcement of IPRs.

Industrial economies like the U.S. and Japan have already implemented TRIPs sufficiently. They enacted new IPRs laws during the Uruguay Round or shortly after its conclusion. Drastic modification was not needed to tune their strong IPRs systems to TRIPs standards. These two countries seem to be the major beneficiaries of TRIPs

since they have comparative advantage in high-tech products that will be protected by IPRs.

On the other hand, many of the developing countries in APEC may incur economic welfare costs if they implement TRIPs fully and within the stipulated time frame. This is because they may be prevented from freely transferring, absorbing, imitating, and improving high technologies invented and owned by developed countries. For these less developed economies, TRIPs has stipulated a transitional period which allows postponing the implementation of critical Articles. 5 Non-WTO (TRIPs) members of APEC, such as China (People's Republic of China) and Taiwan (Republic of China), do not have any obligation to introduce the standards of TRIPs into their own IPRs systems which have long been labeled "weak" by developed countries.

Figure 1 (on page 25) conceptualizes such diversity within APEC and its relationship with TRIPs. Countries which fall into Category 1 are industrialized countries with membership both of APEC and TRIPs. Notably, the U.S. and Japan belong to this category. Canada and some Newly Industrialized Economies (NIES) also may be listed in the same group. Countries of Category 2 are technologically less developed countries that are members of APEC and TRIPs. The majority of APEC members seem to belong to this category. Category 3 represents developing countries which are members of APEC but are not signatory to TRIPs. China and Taiwan fall into this category as mentioned above.

The same categorization will apply outside APEC too. Highly industrialized European countries, for example the U.K., Germany, and France, constitute Category 4. Some of the former planned economies belong to Category 6. The rest of the world falls under Category 5.

The objective of APEC's policy coordination on IPRs is apparently to transfer economic welfare (excess profit), which will be generated by technological innovation, from countries of Category 4-6 to countries of Category 1-3. However, as economic theory will show (see Chapter II), TRIPs is expected to transfer economic welfare from countries of Category 2 & 5 to countries of Category 1 & 4, given asymmetry of technological development within APEC. At the same time, TRIPs unintentionally allow international transfer of income from Category 1 & 4 to Category 3 & 6. If countries of Category 3 join TRIPs, patterns of income transfer will be changed so that Category 1 & 4 can reap rent from Category 3 additionally. In any event, the TRIPs-APEC regime is assumed to increase the profit of developed countries and decrease that of developing ones.

From this theoretical observation, it is possible to hypothesize that it will be impossible

for APEC to realize the full implementation of TRIPs by 2000. This is because disadvantaged developing countries may be reluctant to adhere to APEC's TRIPs principles.

Reality betrays this hypothesis. In reality, developing countries of APEC (both Category 2 & 3) are very eager to strengthen their national IPRs systems. TRIPs implementation has been undertaken firmly so far. It is so firm and immediate that the full implementation process may be completed in 1997 or 1998, making it needless to wait until 2000. These countries are reforming their IPRs systems from weak to strong in only five years or so.

The purpose of this paper is to analyze this unexpected reality (i.e., rapid implementation process) and its economic implications. Chapter II will describe the economic theory of potential conflicts arising from the IPRs policies of APEC countries, and will examine the hypothesis that the rapid implementation of TRIPs is not feasible within APEC. Chapter III summarizes the recent reformation of IPRs systems in China, Hong Kong, and Taiwan. Through a case study of the three Chinas, I will argue that the systems of developing Asian countries are becoming closer to TRIPs standards and, as a result, the goal of APEC to achieve full implementation of TRIPs by 2000 is becoming a reality. Chapter IV examines international political factors and structures behind the three Chinas' reformation process of IPRs systems. Chapter V will estimate the positive and/or negative impact of rapid TRIPs implementation upon APEC itself.

II. Economic Theory of International Conflicts of IPRs Policies

1. North-North Conflicts

In Figure 2 (on page 26), the vertical axis shows the price of product and cost of production, while the horizontal axis shows output of production. D, MR, and MC represent demand curve, marginal revenue, and marginal cost respectively.

Assume both Country A and B are developed nations which are capable of generating high technologies and have already established strong IPRs systems (we leave Country C here for Section 2). These two countries fall into Category 1 (or 4) of Figure 1 in the previous Chapter. The following assumptions, however, will be accepted so that we can emphasize technological and economic asymmetry between A and B: (i) Country A is capable of "basic invention" that reduces cost of production drastically, while Country B's capability is limited to "improvement" whose rate of cost reduction is small; (ii)

Country B's demand curve is lower than that of Country A. The former assumption implies that technological capability of Country A is superior to that of Country B. The latter implies that Country A's market is bigger than Country B'. We may suppose that Country A is the U.S. while Country B is Japan, or that A is both U.S. and Japan while B is a number of technologically emerging NIES.

Production in Country A is initially carried out under perfect competitive conditions at constant unit cost and price 0P1 (=MC1). Then, assume a firm in Country A succeeds in an innovation reducing unit cost from MC1 to MC2 and secures IPRs, such as a patent right on that innovation. If "circumvention" of patented invention is impossible for other rival firms, the patent recipient firm can either drive them out of business by monopoly pricing, commanding a excess profit of rectangle P1FHP2 per year, or it can license the patent to rivals, charging a royalty that extracts the same surplus. The patent holder can maintain such profit-maximizing activities until his patent right legally expires (seventeen years from the date of issuing patent in the U.S. case '). If a subsequent new invention reduces unit cost further to MC3, excess profit enjoyed by the patentee will be expanded to P2GNP5.

Total welfare of Country A suffers from these patents while patents are in force, since the society as a whole must sacrifice some economic welfare that is shown as triangle FGH or GKN (so-called "deadweight loss"). These losses, however, are justified as an opportunity cost to induce private firms to invest in research and development (R&D). Without paying this cost, new technologies cannot be expected to be created. But when the deadweight loss is too burdensome to the society, monopolistic activities of firms, such as the abuse of patent rights, will be regulated by IPRs laws and/or anti-trust laws.

The more intense R&D competition between firms becomes (as often seen in developed countries), however, the lower the return from R&D investment. This is because competitive R&D, and consequent alternative technologies, make existing technologies quickly obsolescent and also make long patent duration meaningless. This phenomenon contradicts the objective of IPRs systems that the value of income stream during patent life should compensate R&D expenditure and give firms extra profits for inventing new technologies. For example, if a rival firm succeeds in an invention, reducing unit cost from MC2 to MC3 and is issued a patent before the firm which originally reduced the cost to MC2 recovers R&D expenditures, the latter firm can no longer extract monopoly rent from the market even though its patent is still in force. The same misfortune could happen to the former firm during the next round of R&D competition. In this case both firms may set their eyes on an export market that exists

in Country B, with the intention of multiplying opportunities and recovering R&D expenditures.

Provided that the IPRs systems in Country A and B are strong enough to prevent parallel import, a patentee firm of Country A can segment two countries' markets and set prices (i.e., P2 in Country A and P7 in Country B), commanding additional monopoly rent P7UWP8 in Country B. This is essentially an international transfer of income from Country B to Country A. It leads to a belief, therefore, that the government of Country A should always encourage monopolistic activities of local firms as long as P7UWP8 exceeds the deadweight loss of GKN. Pro-Patent policy is promoted based on this belief. Social cost increased by excessively strong IPRs protection is expected to be offset by absorbing profits from Country B. This form of cost shifting has been attempted by the U.S. since the mid-1980s through a process of IPRs legislation and the deregulation of anti trust laws. For example, in relation to patent licensing, cost shifting has been attempted by applying the "rule of reason" to cases of restrictive business practices. However, it is questionable that the government and firms of Country B would permit the strategy of Country A. They must react to it in the same way. If a firm of Country B counters with an innovation, reducing unit cost to MC4, Country A can no longer pursue profit-maximizing activities in either market. In turn, the firm of Country B will extract monopoly rents P8VXP9 from the market in Country B and most importantly P5KTP6 from Country A, the latter being an international income transfer from A to B.

What is critical to both Country A and B here is timing or speed of innovation. It is because excess profit will invariably be distributed only to the first countries (firms) that have succeeded in innovation. Countries that have failed to win international R&D competition cannot avoid over-increasing domestic social cost since they have protected IPRs suboptimally. Therefore, governments in two countries may undertake to selectively support strategic industries that are most likely to bring profits from abroad.

Government support of strategic industries is achieved through various industrial policies including subsidies and cooperative research projects, and attempts to create comparative advantage artificially. These policies are often called "strategic trade policy." Even in case of a lost game, discriminatory IPRs policies may allow strategic trade policies to work. For example, the "first-to-invent" principle of the U.S. patent system used to be applied only to U.S. firms, making it necessary for a foreign firm to apply for patents prior to U.S. applications, notwithstanding that the foreign firm invented first.) In Japan, patent application had to be written in Japanese, leaving

U.S. firms at a disadvantage. * In addition to these procedures, private firms can take advantage of injunction at borders (e.g., General Exclusion Order of Section 337 of the U.S. Tariff Act of 1930) and ask for out-of-court settlement, irrespective of the facts of the IPRs infringement. They may also insist invalidation of foreign patents through the legal system. All these practices coerce foreign rivals to increase their unit cost to MC'3 or MC'4 and then help local firms to maintain profits temporarily.

As a result, the level of IPRs protection in developed countries has continued to rise, but at the same time conflicts regarding procedures and practices of IPRs systems have become more severe. TRIPs deals only marginally with the procedure/practice aspects of IPRs. Therefore, conflicts among developed nations will not be necessarily ease under the TRIPs-APEC regime.

2. North-South Conflicts

In contrast to the North-North model, the level of protection itself becomes an issue when developed countries trade with developing ones (Country C in Figure 2). In Figure 2, the asymmetrical structure between Country A and Country C is more emphasized (supposing a two-country system comprising A and C hereafter).

Provided that firms in Country C are not capable of developing useful technologies by themselves, unlike firms in Country A, the government of Country C must take either of the following policies; (i) to import Country A's products; (ii) to have firms in Country A license their technologies to firms in Country C; (iii) to have firms in Country A manufacture their products in Country C (foreign direct investment); or (iv) to lower the level of IPRs protection so that firms in Country C can imitate the technologies of firms in Country A. Alternative (i) may not be preferable for the same reason discussed in the previous Section. This is why developing countries often do not deem "importation" of patented products to satisfy the requirements of "working," and they grant compulsory licenses or invoke patents issued for foreigners on the grounds of non-working. Alternatives (ii) and (iii) deserve consideration since they allow Country C to retain part profits and benefit from technological spillover and an increase in employment. The result is, however, likely to fall short of such expectations if firms in Country A are so multinationalized that they can internalize technology transfer and resort to transfer pricing. That will be the case especially when firms in Country A choose to protect their technologies as trade secrets under laws of contract and tort, but not under a patent system that forces patentees to disclose patented technologies. Then, the government of Country C would prefers alternative (iv).

A clear example of this scenario is India. India led the Group of 10 6 in opposition to

TRIPs during the Uruguay Round. The Indian patent system established in 1970 has the following characteristics:

-- Unpatentable subject matter (statutory bar) is extensively formulated, in consequence chemicals, pharmaceuticals, and other critical technologies are denied product patents (only process patents permitted);

-- Life of patent is extremely short. For example, patent life is five years from patent grant, or seven years from patent application, whichever is shorter, for critical technologies such as pharmaceuticals, and fourteen years from application for other technologies;

-- Conditions for granting compulsory licenses and revocation of issued patents are generous for would-be licensees. For example, a compulsory license can be granted on the grounds that "the reasonable requirements of the public" have not been satisfied at any time after the expiration of three years from the patent issuance.

It is obvious that the objective of the Indian patent system is "targeting" high technologies in which developed nations have comparative advantage so that Indian industries can transfer and learn those technologies. Since more than eighty percent of issued patents in India are registered by foreign firms, and two thirds of these patent applications are from U.S. firms, the Indian patent system apparently aims at transferring income from the U.S. IPRs systems in developing countries of APEC (Category 2 & 3 of Figure 1) are not as "weak" as the Indian system, but the former resembles the latter more or less.

In Figure 2, I apply a dominant firm-local fringe market structure model. This is because firms in Country A will retain their market control power in the short term, even after the government of Country C has lowered the level of IPRs protection for the benefit of local firms which need substantial cost and time to realize perfect imitation. Under this condition, a patentee firm in Country A initially commands monopoly rent P10ydP12 from Country C, but then the rent will be reduced to azce, allowing fringe firms in Country C to obtain triangle P11aP12 (DS represents supply curve of firms in Country C). This triangle is re-transferred income from Country A to Country C.

The IPRs system of Country C may embark on not only import substitution but also export promotion, taking advantage of higher prices in Country A. Firms in Country C can export their imitated goods, "counterfeits," or "pirated goods," which have been legally produced, to the market of Country A, earning P3JP4 (ES represents export supply curve of firms in Country C). This is also an international income transfer from A to C. Moreover, the domestic monopoly rent that was previously enjoyed by the firm of Country A will be reduced to JILQ.

Weak IPRs policies in Country C may prompt the government of Country A to take countermeasures. Typically, Country A intervenes in the market so as to shift ES to the direction indicated in Figure 2. Among such examples is the U.S. patent law amended by the Omnibus Trade and Competitiveness Act of 1988. This law has enabled U.S. patent holders to enforce their rights against importation of products made using the same process as the U.S. patent process. Section 337 of the U.S. Tariff Act can be utilized for the same purpose. These measures are similar to countervailing duties in the sense that they nullify the effects of Country C's trade policies. If Country A is an economically and politically powerful country (or a hegemonic state), it can coerce Country C to shift DS to the indicated direction (i.e., strengthening IPRs protection) by resorting to threats or retaliation. The U.S. bilateral IPRs negotiations with developing countries, which are dependent on threats of trade sanctions through Section 301 and Special 301 of the U.S. Trade Act or reconsideration of Generalized System of Preferences (GSP) status, are interpreted as such.

TRIPs is essentially the same as the U.S. countermeasures against the IPRs policies of developing countries, acting to prohibit weakened IPRs protection. TRIPs acts as a substitute for bilateral coercive negotiations initiated by powerful developed countries, and save negotiation costs (political scientists call such a legitimate structure "international regime"). Therefore, in theory, countries of Category 3 in Figure 1 (China and Taiwan) have no reason to adhere to TRIPs, and countries of Category 2 prefer to delay the implementation of TRIPs.

3. Multilateral Conflicts

Thus far, I have distinguished North-North issues (i.e., conflicts of procedures and practices) from North-South issues (i.e., conflicts of protection levels). As a matter of fact, however, these two types of conflict are often intermingled. For instance, during the Uruguay Round TRIPs negotiations, developed nations (i.e., the U.S., the European Communities, and Japan) acted in concert to press developing countries to agree on strong IPRs protection, while the EC and Japan also demanded the U.S. to correct its discriminatory IPRs procedures and practices.

A hypothetical explanation is derived from Figure 2 if we now regard it as a three-country system. Assume that a firm in Country A (U.S.) has already succeeded in a basic invention reducing unit cost to MC3 and is commanding monopoly rent P2GNP5 in Country A, P7UWP8 in Country B (EC or Japan), and P10YdP12 in Country C (developing country). Provided that fringe firms in Country C export their imitated goods only to the country whose market is the biggest and price is the highest,

profits of Country A will be reduced to JILQ + P7UWP8 + aZce as the result of weakened IPRs protection in Country C, although profits of Country B can remain the same. On the contrary, even if a firm in Country B counteractively has made an improvement in the basic invention by reducing unit cost to MC4 and commands monopoly rent P5KTP6 in Country A, P8VXP9 in Country B, and P12bfP13 in Country C, profits of Country B will be little affected by imitation in Country C. Country B's rent reduction takes place only in Country C, altering P12bfP13 to ebfg. This is because imitated products (whose price is P12) are not price-competitive, and are not exported either to A nor to B (domestic supply curve is shown as DS').

In other words, the victims of foreign infringement of IPRs are always "hegemonic" states or the so-called "center." In turn, the extent of damages determines the enthusiasm of Country A's government towards improving the IPRs system of Country C, while Country B's government is relatively indifferent to it. Therefore, Country B's government can request "rewards" from Country A's government for cooperative action. Country A, however, is not always tolerant of Country B's demand, and when it is not, North-North conflicts will become intensified by the existence of North-South conflicts. In theory, such complex conflicts and bargaining are also destined to arise during APEC negotiations.

Taking account of all of the above theoretical observations, it is possible to temporarily conclude that early and full implementation of TRIPs within the APEC process is hardly possible. But ,in reality, full TRIPs implementation is being realized. The following Chapters will detail this reality and discuss the reasons behind it.

III. Recent Reformation of IPRs Systems in Three Chinas

1. Selecting Case Countries

APEC is a mosaic of heterogeneous economies. It is difficult, therefore, to describe every aspect of the IPRs policies of APEC members. But, as the APEC industrial Property Rights Symposium held in Tokyo in August 1996 revealed, it is possible to point out that the level of IPRs protection in APEC's developing countries has been drastically improving over the last several years. It also seems that overall IPRs protection levels are in the process of further improvement.

In this Chapter, I will confirm this tendency through a close look at recent reformations of IPRs systems in China, Hong Kong, and Taiwan. %

China is chosen here because it is currently notorious for its weak IPRs protection.

China is also one of the key countries which has substantial power to determine APEC's future, including IPRs policy coordination. No copyright laws existed in China when the TRIPs negotiations began, and it was only shortly before the start of these negotiation that the first (weak) patent system was established. Even after the establishment of its copyright system, China has been condemned by the U.S. for pirating computer software and audio-visual products. Sino-U.S. bilateral tensions on IPRs have recently come to a crisis point, with the U.S. side threatening trade retaliation and sanctions.

Hong Kong has been blamed for the free circulation of a vast amount of counterfeit and pirated goods produced internationally. Many developed countries share the impression that the Hong Kong government has allowed, if not encouraged, the illegal trade of imitated goods, and has no respect for IPRs protection. It is widely understood that IPRs infringement in Hong Kong is rooted in its society and corrupt political structure.

Taiwan has also been recognized as a large scale producer and exporter of imitation goods. Taiwan does not accede to any IPRs treaties because of its exclusion from many international policy making bodies. As a result, Taiwan has been exempted from securing IPRs protection for foreign firms. Therefore, pirated software and CDs of foreign origin are legally being produced and sold in Taiwan, and the Taiwanese government does not have any legal obligation to deter this process. Moreover, the increased technological capability of Taiwanese firms is believed to allow them to take advantage of weak patent protection. In turn, these firms are able to challenge the competitiveness of developed countries' high-tech products.

Notably, the above-mentioned countries have benefited from weak IPRs systems substantially. There is no doubt, therefore, that the developed nations of APEC (Category 1 in Figure 1) have been particularly concerned about improving these countries' IPRs systems.

2. Case of China

China had long denied the concept of IPRs because profit monopolization is contradictory to socialist view. In addition, China had not been obliged by any international law to implement TRIPs standards.

Over the last decade, however, China has promulgated many modern IPRs laws and is continuously strengthening them to achieve TRIPs standards. This legislation has included the revised Trademark Law (1982), first Patent Law (1984), the Technology Contract Law (1987), first Copyright Law (1990), revised Patent Law (1992), re-revised

Trademark Law (1993), and the first Anti Unfair Competition Law (1993). In 1991, the 'Provisions on Computer Software Protection' was also issued by the State Council in order to reinforce China's copyright system. Furthermore, in 1992, copyright protection for foreign software became stronger than general copyright protection for local software industries. For example, the term of protection for foreign software is now stipulated as "50 years after publication" while the initial term of local protection remains "25 years after publication." The first Patent Law (1984) was revised in 1992 so that not only process patent but also product patent can be issued for foods and pharmaceuticals, and that the term of protection can be extended from 15 years to 20 years. The amended Patent Law also stipulates that importation of patented products without consent of the patentee constitutes patent infringement, and that the effect of process patent can be extended to the products directly produced by that process. The Trademark Law of 1993 introduced a registration system of service marks. It also toughened criminal sanctions for trademark infringement. When the Anti Unfair Competition Law came into force in 1993, legal protection of know-how and trade secret became available for the first time in China.

China has also made efforts to become a member of major international IPRs forums. It joined the World Intellectual Property Organization (WIPO) in 1980 and acceded to almost all subsequent IPRs treaties. These treaties include the Paris Convention (1985), the Berne Convention (1992), the World Copyright Convention (1992), the Patent Cooperation Treaty (1993), and the Geneva Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms (1993).

As to the enforcement of IPRs, the Chinese government has confiscated more than 3 million illegal audio-visual and electronic products that were domestically produced. Furthermore, the government has closed 12 factories and 6 retail markets for pirated goods. Supervisors have been sent throughout the country in order to check production lines and to prevent infringement. At the borders, the Chinese custom authorities have "took over 16,000 CD which were prepared for export to [Hong Kong] from Guangdong, discovered and seized 19,199 VCD which were prepared for smuggling into China." In Guangdong Province, 30 people were recently arrested for distributing illegal CDs.

Thus, the effectiveness, protection scope and utilization of IPRs protection, including patent, trademark, trade secret and others, has reached the level of developed countries in an amazingly short period, making it difficult to comprehend that there was virtually no IPRs system in China a decade ago.

3. Case of Hong Kong

Since Hong Kong's economy has flourished as a "free port" and has not developed its own manufacturing industries (whose technologies might need IPRs protection), the interests of the public and the government of Hong Kong towards IPRs has been quite low for a long time. Moreover, because of its colonial status, the IPRs system in Hong Kong has been dependent on the legislation of the U.K. to a great extent. For example, there is no localized patent examination system and thus no original grant of patents in Hong Kong. Would-be patentees, whether domestic or foreign, are required to obtain U.K. patent or European patent, designating the U.K. in advance, and then take a procedure to extend its effect in Hong Kong. There has been no local copyright system in Hong Kong.

Hong Kong is, however, destined to revert to Chinese control in July 1997. This means that the IPRs system in Hong Kong will then be independent from the U.K. system, and that Hong Kong's own system will be established and operated in accordance with the doctrine of "one country, two systems." Since Hong Kong is a founding member of the WTO it is obliged to comply with TRIPs obligations, but the Basic Law (between China and Hong Kong) does not require Hong Kong to speed up the implementation process of TRIPs. Therefore, it is at the discretion of Hong Kong to delay implementation until expiration of the transitional period stipulated in TRIPs. If Hong Kong considers that the existing quasi-U.K. system is too "strong," then it may even prefer to weaken the system as the economic theory in Chapter II predicts.

Nevertheless, Hong Kong is keen to take immediate action to modify its IPRs laws to comply fully with TRIPs. The Hong Kong government enacted the Intellectual Property (World Trade Organization Amendments) Ordinance (WTO Ordinance) in May 1996. By this Ordinance, existing systems of patents, copyrights, and trademarks have been explicitly strengthened. Amendments to old Copyright Ordinance, for example, provides protection for performers of musical, dramatic and literary works against unauthorized fixation (recording) or reproduction (broadcasting) of their live performances; gives copyright owners of computer programs and sound recordings the right to prevent renting these works without their consent; and enables right holders to apply to the High Court to ask custom authorities to detain suspected imports of infringing goods. Apart from the WTO Ordinance, The Hong Kong government also legislated two other Ordinances so that the new system can secure protection for plant varieties (1996) and the layout-design (topography) of integrated circuits (1994), both of which had not previously been in the scope of Hong Kong's IPRs

system.

As to the aspect of enforcement, the Hong Kong government has recently made great improvements. As Hong Kong has long been known as a free port and international black market for low-cost infringing goods, the enforcement of IPRs seems to be understood in Hong Kong as an issue of strengthening border control against pirates and counterfeit of copyright or trademark, rather than as an issue of civil procedures for patent infringement/validity trials. The Customs and Excise Department of Hong Kong handled 1,628 cases of copyright infringement at borders, and prosecuted 1,131 persons in 1995. This was almost ten times the number of 1992: 162 cases and 123 prosecuted persons. With regard to trademark infringement, 885 cases were taken up, and 224 firms prosecuted in 1995. In order to prevent illegal import and export, the Hong Kong government has also been eager to disseminate the philosophy of IPRs by means of mass media, warning the public of the severe criminal penalties for infringement. The government has also highlighted to the public the need to cooperate with overseas enforcement agencies.

Furthermore, Hong Kong is at present drafting (or considering) new Ordinances relating to patent, copyright, trademark, and registered design. Although these bills aim to localize and modernize Hong Kong's own IPRs system by July 1997 (reversion of Hong Kong to China), they are not strictly designed to introduce TRIPs standards into the local system, nor to surpass the protection level of TRIPs. Nevertheless, these bills will consequently reinforce IPRs protection.

4. Case of Taiwan

The commitment of the Taiwanese government to strong IPRs policy is manifest in extensive efforts in the revision of laws, in strengthening enforcement measures, and in public enlightenment programs.

Compared with China, Hong Kong, and some other Asian countries of APEC (except Japan and probably Korea), Taiwan has advanced technological capability and commercialization. In addition, high-tech industries in Taiwan, such as the computer hardware sector, are starting to export their products to other countries. Thus, the IPRs system of Taiwan has been relatively strong, even though it still remains inadequate from the viewpoint of the U.S. and Japan.

A series of IPRs legislations since 1992, however, has enhanced IPRs protection in Taiwan towards internationally acceptable levels. The comprehensive revisions of the Copyright Law (1992, with further amendment in 1993), the Trademark Law (1993), the Patent Law (1994), and legislation of new laws such as the Integrated Circuit

Layout Protection Law (1995) and the Trade Secrets Law (1996), have all brought Taiwan's IPRs system up to levels comparable with major IPRs international agreements, in terms of scope, duration, and effectiveness of rights.

For instance, the revised copyright system confers "import rights" that outlaw the importation of any copy of a work without the authorization of the right holder. It also extends the term of copyright to life of the author plus 50 years, or 50 years after the date of first publication of a work.

The 1993 amendments of the Trademark Law added explicit protection for "collective marks" and "certification marks", and adopted the priority system (although the latter is subject to the requirement of reciprocity).

Under the current Patent Law amended in 1994, a patentee has become able to enjoy exclusive rights for 20 years from the filing date of application. A patentee is also offered "import right." Protection for plant varieties is not provided in the Patent Law but is, as is the case in other developed nations, secured under the Plant Seeding Law, which took effect in 1988.

As mentioned earlier, Taiwan has been isolated from important IPRs international treaties and conventions including TRIPs. This means that Taiwan has no obligation to protect foreign technologies and creative works on the basis of National Treatment. In fact, in many cases the rights embodied in Taiwan's IPRs laws are granted only to foreign nationals of countries which have entered into a mutual protection agreement with Taiwan based on reciprocity. But, only a limited number of countries, including the U.S., the U.K., Switzerland, Hong Kong, Spain, and Korea, have such reciprocal relations due to international factors. As a result, local industries in Taiwan have maintained relatively free access to foreign intellectual properties, even under the current modified IPRs system.

The Taiwanese government is attempting to improve this unequal treatment by abandoning the reciprocity principle, and by incorporating the National Treatment principle into IPRs laws. Taiwan proposes this improvement in another series of amendments to existing laws, which is a part of its draft WTO-package legislation.

Proposed revisions to the Copyright Law includes the following new schemes: (i) extension of retroactive protection to 50 years; (ii) protection of performances; and (iii) deletion of provisions concerning compulsory translation licenses. The draft amendments to the Trademark Law provide: (i) explicit recognition of "famous marks"; and (ii) protection of marks incorporating combinations of colors. Finally, the proposed amendments to the Patent Law include the followings: (i) restoration of patent term (which is used to obtain regulatory approvals for marketing pharmaceuticals and

agro-chemicals) up to five years; (ii) decreased likelihood of issuing compulsory licenses; and (iii) heavier burden of proof on the side of the alleged infringer.

Taiwanese border controls designed to detain infringing goods are improving effectively. A striking feature of Taiwan's border policy is its emphasis on export control. To prevent or decrease the export from Taiwan of products bearing counterfeit trademarks, the Trademark Export Monitoring System was established in 1994. Customs authorities use the information which right holders provide to check if exported goods infringe on registered trademarks. A similar export control system is utilized to stop the trade of infringing copyrighted software and compact discs. These measures imply that Taiwan has voluntarily adopted a policy which shifts the DS line to the indicated direction as shown in Figure 2. In addition, of course, the Customs Law contains provisions prohibiting the import of products infringing on patents, trademarks, and copyrights.

Moreover, the government of Taiwan has organized a wide variety of educational programs for the general public. For example, to promote an environment of respect for copyright, the government has sponsored many seminars, lectures, press conferences, game events, and so forth at colleges, private companies, and other appropriate forums.

As has been demonstrated above, the IPRs systems of the three Chinas, which have been denounced by many developed countries, are now approaching full compliance with TRIPs standards. The following chapter will address those factors which have accelerated this process.

IV. Factors Accelerating TRIPs Implementation

1. Conventional Explanations

Some factors have already been pointed out by scholars to explain the improvement of IPRs protection in developing countries generally. The most popular factor identified by these scholars is "coercion" ,

The concept of "coercion" is based on a belief that IPRs systems in Asia are no more than the result of external pressure from the U.S. The "coercion" theory suggests, therefore, that "targeted countries have changed their policies but not their minds." . It also assumes that developing countries do not take the implementation of strong IPRs policy seriously.

The theory that "coercion" has led to strengthened IPRs systems in Asia is supported by

strong empirical evidence. IPRs experts of the three Chinas have admitted that they engaged themselves in IPRs reform quite reluctantly at first. According to these experts, their countries initially "surrendered" to U.S. demands for stronger IPRs protection in order to avoid trade retaliation, and to maintain access to the U.S. market. This is despite the fact that many of these experts believe that U.S. policy disregards the economic interests of developing countries. Undoubtedly, many of the rapid alterations to IPRs policy in developing nations such as those undertaken in South Korea and in Brazil, have resulted from such coercive U.S. trade policies. /

Without bilateral trade consultations with the U.S., it is unlikely that China would have tightened regulations on pirated computer software and audio-visuals. This supports the "coercion" theory presented by Sell 0 that developing nations which attempt export-led economic development have what Keohane and Nye call "vulnerability" 1 to the U.S. because of their relative market size, and that U.S. foreign IPRs policy can exploit this vulnerability.

The content and pace of IPRs reform in developing countries, however, has often been far beyond what the U.S. negotiators of TRIPs initially expected. For example, the export border controls of Taiwan are not required by any provision of TRIPs. The Taiwanese government is planning to establish an independent new bureau, the Intellectual Property Bureau, in order to consolidate and facilitate the processing of all IPRs affairs. Under the proposal, the number of patent examiners will be increased so that the system of retaining outside examiners can be abolished, and the quality of examination raised. As described in the previous Chapter, the Taiwanese government has also invested funds to increase the public recognition of IPRs. In China, the School of Intellectual Property was established in the Law Department of Peking University in 1993 for the purpose of training and supplying human resources for both the public and private sectors. In Hong Kong, a qualification system of patent attorney has recently been proposed. These are all self-initiated policies and not the obvious result of coercion.

In explaining voluntary IPRs improvements in Asia, it may be appropriate to point out the emergence of indigenous technological industries. Because of the rapid economic and technological development of NIES, including Taiwan, these countries experienced a growing interest in the protection of their own IPRs. It is known, for example, that computers made in and exported from Taiwan have been imitated not only in neighboring Asian countries but also in developed nations, and that industrial organizations in Taiwan have lobbied for policy changes to curb IPRs infringement of Taiwanese goods. 2 This factor of improved technological capability cannot, however,

make it completely clear why Asian countries other than NIES are also upgrading their IPRs systems.

Incentives for private companies of developed nations to undertake foreign direct investment (FDI) and technology licensing are understood as another important factor. It is commonly believed that the private sectors of industrial countries hesitate to invest in, or to license to, countries whose IPRs protection is inadequate. This is because their valuable technologies are at risk of being copied without appropriate compensation. Thus, many developing countries which desire technological infrastructure have established and adjusted their IPRs systems at the expense of short-term profits from imitation. This explanation seems applicable to non-NIES Asian countries of APEC, including China.

2. Resurrection of "High Politics" Paradigm

This paper has so far taken it for granted that the world system consists of what Rosecrance calls "Trading States." 3 Within this system, the national interests of states (for example, Country A, B, or C of Figure 2) are always equivalent to the sum of the private economic welfare of strategic industries. In other words, private companies are supposed to undertake business with the intention of enriching the country, while in turn the government is expected to make and implement IPRs policies so that the benefits of companies can be increased. The rationale of pro-patent policy, anti-patent policy, and international conflicts between these two policies, which were analyzed theoretically in Chapter II, is based on such Trading-State assumptions. Thus, if inter-governmental relations in APEC are dominated by so-called "low politics," it would be possible to predict the direction of IPRs policies in China, Hong Kong, and Taiwan.

It is also true, however, that "high politics", concerning political value and power, still exists among members of APEC. Under this concept of "high politics", the protection of IPRs is a secondary economic issue for the three Chinas. This is in comparison with the importance of critical political issues which the three countries are facing in the international arena. IPRs protection will thus be improved drastically and voluntarily in those countries, if it will be effective in helping governments to achieve higher political objectives. Among such objectives is the international recognition of the country itself.

Both China and Taiwan have already declared their willingness to join the WTO. Indeed, both are competing with each other to win membership of the WTO. For both countries, international recognition of their domestic polity as the legitimate "China" is the most important issue upon which all kinds of domestic resources are mobilized.

And, because TRIPs is an essential part of the WTO framework, it has been better for them to incorporate TRIPs standards into their own IPRs systems in advance, thereby assuring other WTO members that they are committed to strong IPRs protection and are qualified to enter the organization.

During the process of rapid IPRs systems reform, however, less attention has been paid to possible distortions in industrial development. Especially in China, whose technological capability is still inferior, developmental distortion seems to have been permitted as an opportunity cost to accede to the WTO. On the other hand, it seems that Taiwan's government views attempts to take advantage of TRIPs (WTO) as a step to towards easing diplomatic isolation, and increasing Taiwan's participation in the international community. In any event, both Chinas are very sensitive to each other's IPRs policy. If either of them raises the level of protection, the other will also raise it counteractively. It is now each other's policies, rather than the attitude of the U.S., that concerns IPRs policy makers in China and Taiwan.

Between China and Hong Kong exists another typical issue of high politics: sovereignty over the territory. As mentioned earlier, Hong Kong will revert to Chinese control on July 1st, 1997. The Hong Kong government, therefore, has to establish its own IPRs system independently from the U.K. system. The doctrine of "one country, two systems" ensures in principle that the new system in Hong Kong will be independent from the Chinese IPRs system. In reality , however, the Chinese IPRs system is permeating the Hong Kong system steadily. For example, it is agreed that the effect of Chinese patent will be extended in Hong Kong if a patentee wishes to do so. Government officials of both territories have met many times, and the Chinese government has made various requests. This seems ironic since Hong Kong's IPRs system (at least its protection level) has historically been much more "advanced" than the Chinese system because of British influence. The Chinese IPRs system has been in existence for only a decade or so, and its effectiveness still remains unknown in many aspects (for example, the quality and reliability of examination). For this reason, the Hong Kong government is anxious about the linkage to Chinese IPRs system, and is undertaking extensive efforts to localize and modernize its own IPRs system while still under the auspice of the U.K. government. This has resulted in the rapid improvement of the IPRs system in Hong Kong.

Pride as a "great power" has also exerted an influence upon shaping Chinese IPRs policy. Initially, when China was blamed by the U.S. for its weak IPRs protection, it resisted U.S. pressure and made compromises reluctantly. China attempted to show its diplomatic robustness, but during the slow process of reform gave other developing

countries, including Taiwan and Hong Kong, opportunities to reform their own IPRs system. The accelerated reform of the IPRs system in China over the last few years can be understood as a strategy to bridge this gap.

Not all of the strong IPRs policies that have been encouraged by "high politics" factors can be seen as "voluntary" or "effective" in the sense of industrial policy. But nor are they the result of external coercion. They have been voluntary reforms and they have, to some extent, been effective in achieving political goals.

This chapter has examined the political factors behind rapid TRIPs implementation. These factors are, however, specific to the three Chinas, and much remains to be discovered towards explaining the TRIPs-implementation process of other APEC members. Instead of doing this, however, I will conclude this Chapter by suggesting that APEC will function as a forum not only for economic cooperation, but also for political competition.

V. Conclusion

This paper has considered various factors of the rapid TRIPs-implementation process among developing Asian countries in APEC. At first, by examining the economic theory of international IPRs conflicts, this paper discussed the significant challenges to the realization of full TRIPs implementation within APEC by the year 2000. But as the reality in China, Hong Kong, and Taiwan has shown, TRIPs implementation has been firmly undertaken in APEC so far. Behind this contradiction is found political competition among APEC members, for which strong IPRs policies are utilized.

The reality of rapid implementation of TRIPs in APEC, however, does not invalidate economic theory. Instead, it makes clear the possible consequences of rapid implementation. The ongoing TRIPs process is neglecting economic rationality, and is essentially an institutionalization of a North-South transfer of income: developed nations will benefit more from full TRIPs implementation. The ongoing implementation of TRIPs represents an income transfer among APEC members, but not a transfer from Non-APEC countries to APEC members. Furthermore, the institutionalization of this North-South pattern will slow down innovation speed in APEC and thus decrease the total welfare of APEC as a whole. The North-South conflict model of Chapter II demonstrates this trend, with technological innovation taking place only in one country (Country A of Figure 2), and R&D competition not stimulated between the two poles.

If an increase in the total welfare of APEC members is desired, therefore, it is necessary to transform the above pattern from a North-South model to a North-North model. This requires technological capability on the side of the South (Country C of Figure 2) to be reinforced, so that both sides can compete on a "level playing field." Technology transfer and technological cooperation are thus justified. Article 67 of TRIPs states "developed country Members shall provide, on request and on mutually agreed terms and conditions, technical and financial cooperation in favour of developing and least-developed country Members." This must be the article APEC implements first if the TRIPs process is to benefit all member countries.

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