A Survey of US-China Negotiations on Intellectual Property Protection : Lessons and Policy Options

大阪市大『季刊経済研究』 ISSN 0387-1789
Vol. 21 No. 4, March 1999, pp. 51-71

A Survey of US-China Negotiations on Intellectual Property Protection: Lessons and Policy Options

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Abstract

Intellectual property (IP) protection is a wide-ranging issue relating to fair competition, technology transfer and wielding legality in international trade. IP protection is a highly controversial issue between China and the United States. The US tactics in this dispute are implemented in three purposes:stopping infringements on US-held intellectual property rights (IPRs) in China, entering the Chinese IP markets, and integrating China into a market-based economy and an internationally accepted trading system. At the other end of the spectrum, the issue is a vigorous test to examine whether China can bring IPR violations under control and undertake international obligations in its efforts of acceding to the world market and in its program of technological advancement.This article attempts to expound the two countries' arguments in the dispute and China's current situation in IP protection, survey past researches and try to shed new light on lessons and policy options for the two countries in the issue. The article also attempts to develop a tractable policy analysis in examining the influence of IP protection on China's technology acquisition.

〔Key words〕 intellectual property (IP),enforcement of IP protection,trade imbalance, WTO,technology transfer

Introduction

Intellectual property (IP) industries turn out knowledge goods protected under intellectual property rights (IPRs).IP industries share a major part of US exports and play an important role in US employment.The United States has a comparative advantage in producing goods under patent and trademark protections, such as chemicals, pharmaceuticals, scient instruments, automatic data processing apparatus and air-spacecrafts, as well as the others under copyright protections, such as books, printed matter, sound recordings, movies, TV programs and computer software. IP-intensive exports have not only generated billions of dollars to offset the US trade deficit, but also created well-paid and high-skilled jobs.

However, in past decades, ubiquitous IPR violations have imperiled IP industries, hurt foreign trade, and eroded high-tech competitiveness of the United States. The serious situation led to requests of American exporters and Congress on the US government to take actions to crack down on infringements and enforce IP protection, especially to those countries that are in large trade surpluses with US but lack adequate legal protection for IPRs.

Economic reform and open policy stimulated China's appetite for knowledge products to advance its science and technology, and cultural goods to enrich Chinese recreation. Table 1 illustrates that six selected IP-intensive goods amounted for about 40% of the total US exports to China in 1992-96.

Table 1 Selected US IP-intensive Exports[1] to China in 1992-96 (US$ million)

	1992	1993	1994	1995	1996
Chemicals[2]	245	231	273	302	289
Pharmaceuticals	16	23	19	31	36
Fertilizers	629	293	944	1,204	891
Electrical Mach.& Equip.	464	895	919	1,270	1,433
Air-Spacecraft & parts	2,056	2,229	1,911	1,176	1,708
Printed books,Pictures	10	15	14	11	18
Sub total	3,420	3,686	4,080	3,994	4,375
Total US Exp.to China	7,470	8,767	9,287	11,748	11,978
①／②	45.8%	42.0%	43.9%	34.0%	36.5%

[1] These IP-intensive exports are selected on the coverage of IPRs defined by the United Nations in *Intellectual Property Rights and Foreign Investment*, New York,1993,p.9.

[2] Including organic,inorganic and inorganic compound chemicals.

Source:Compiled from US Department of Commerce,*Merchandise Trade:US Exports by Country*,Aug.1997.(FAS value) .

In parallel with the booming US-China trade in goods emboding IPRs, infringements upon US IPRs in China are also conspicuous. This has led to a backlash of leading US IPR industries to motivate the US government to ask China to ensure an adequate IP protection of the US IPRs in China.

PRMA (Pharmaceutical Research and Manufacturers of America) reported in 1995 that its estimated annual loss due to patent piracy in China totalled US$320 million,[1] almost ten times that of China's pharmaceutical imports from US in that year. In copyright, IIPA (International Intellectual Property Alliance) estimated that Chinese piracy cost America US$0.8 billion in 1993.[2] The US software industry estimated that 94% of the software sold in China was fake, making a loss of US$351 million in 1993 to US software makers.[3]

Moreover, unauthorized goods are exported, which onerously multiplies damage to US IP-intensive exports throughout Asia, where illegally copied software and entertainment products are routinely sold, and urges the US government into a two-track policy of negotiation on IP protection with the Chinese government combined with prosecutions for customs fraud.[4]

This article attempts to survey and evaluate US-China dispute on IP protection. In the first section, we introduce the three US-China negotiations on IP protection and their arguments. In the second section, we discuss about China's progresses and problems in IP protection. The third section is the key part of the article. It focuses on lessons and policy options in US-China dispute on IP protection in three scenarios: (1)US enforcing IP protection on China and US-China trade imbalance, (2)policy implications in the issue, and (3) IP protection and China's technology acquisition. While expounding these problems, the article tries to develop a tractable policy analysis in examining the

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I wish to thank the Referee of KIKAN KEIZAI KENKYU for their corrections and comments to improve the article. I also thank Satoru Nakamoto for his instruction in preparing this article. The writing of this article is financed by a grant from the Graduate School of Economics, OCU. I retain full responsibility for ideas expressed here.

1) Gerry,R., "Outlook:Asia Pacific'95--An Asia-Pacific Prescription", *Chemical Marketing Reporter*, Vol.247,No.21,1995,pp.8-9.

2) US Senate,Hearing before the Subcommittee on International Trade of the Committee on Finance, *Special 301 Trade Remedy*, USGPO,Washington DC,1994,p.39.

3) Royal,W.F., "Battling Chinese Piracy", *Sales & Marketing Management*, Vol. 147, No.4, 1995,p.13.

4) US Government Printing Office, *Economic Report of the President*, Washington DC, 1994,p.222.

influence of IP protection on China's technology acquisition.

I Three US-China Negotiations on IP Protection

The United States deals with infringements on US IPRs in foreign countries using its trade laws, especially the Special 301 Provision of the Omnibus Trade and Competitiveness Act of 1988, which identifies each year the countries involved in IPR violations into four groups:Priority Foreign Countries (PFC), Priority Watch Countires (PWC), Watch Countries (WC) and Special Mention Countries (SMC). Towards PFC, the US trade representative (USTR) can initiate a unilateral investigation and start bilateral negotiations to ask the country to stop violations and enforce IPR laws. If no deals in negotiation, USTR will reserve the right to unilaterally impose high tariff on the named country.

The United States has designated China as PFC three times, (1991, 1994 and 1996), each time followed rounds of negotiations and memoranda of understanding (MOU). In 1991-92 negotiations, US asked China to make and amend IPR laws. Two progresses were reached in the MOU signed on January 17, 1992. In patent, China's Patent Law of 1984 only put the process to make chemicals and pharmaceuticals under patentable subject matter, while products themselves were not mentioned. The MOU of 1992 stipulated that "Patents shall be available (in China) for all chemical inventions, including pharmaceuticals and agricultural chemicals, whether products or processes."[5] In copyright, China promised to accede to the Berne Copyright Convention and the Geneva Phonograms Convention, under which China agreed that no later than the effective date of China's accession to the Berne Convention, the Chinese government would recognize and protect computer program as literary works under copyright law and provide a protecting term of 50 years.[6] Furthermore, China undertook that "where there is an inconsistency between the provisions of the Berne Convention and the Geneva Convention on the one hand, and Chinese domestic law and regulations on the other hand, the international Conventions will prevail subject to the provisions to which China has declared a reservation, which is permitted by those Conventions."[7]

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5) See 1 (a) of Article 1, *Memorandum of Understanding Between the Government of the United States of America and the Government of the People's Republic of China on the Protection of Intellectual Property*,US Government Printing Office, Washington, 1992, p.2.
6) Ibid.,6 of Article 3,p.7.
7) Ibid.,3 of Article 3,p.6.

Negotiations of 1994 focused on the enforcement of IPR laws in China and the US entrance to Chinese IPR market. Besides the request that China must commit to halting piracy and protecting US IPRs in China, the US made claims asking China to (1)regularly report to US on China's police raids on piracy, (2)reduce lawsuit dues and conduct expert testimoney based on the US requests, and (3)permit the US copyright industries to enter China by establishing ventures and distributing goods in China's market.[8] China argued that, first, it had made much efforts to better IP protection since 1992 and that China started from scratch and had done as much in less 20 years in developing a legal system to protect IPRs as industrialized nations did in one century. The US should not ignore these facts in negotiating with China on IP protection. Secondly, IPR laws are related to a country's sovereignty, the US does not have right to force China to change its civil law. Thirdly, some US requests are beyond the scope of IP protection issues. For example, the US request to enter China's cultural market refers to American culture infiltration, of which the Chinese government has been very cautious.[9]The stop-and -go negotiations lasted almost one year until February 26, 1995, when the two sides reached a last-ditch accord just one day before the US sanction came into force. The agreement consists of three parts:(1)Immediate enforcement: exports and imports of pirated CDs, LDs, CD-ROMs and counterfeit trademark goods will be prohibited and infringements strictly punished. An enforcement mechanism will be empowered to investigate and punish infringing activities throughout China, (2)Long-run enforcement:including setting an effective administrative and judicial system, publishing standards to govern the registration and renewal of trademarks in China, enhancing protection against unfair competition, exchanging information and statistics on Chinese enforcement efforts and regular consultations to discuss the adequacy of enforcement efforts, and training Chinese judges, lawyers, students, government

8) Compiled from (1) USTR Kantor,Testimony Before the House Ways and Means Subcommittee on Trade,Hearing,March 9,1995,104th Congress,US Government Printing Office,Washington DC,1995,pp.11-18.(2) Yu,S.and J.Pan, "Weihu Guoji Maoyi zhong Kexue Jishu de Gongping Jingzheng (Protecting Fair Competition in Science and Technology in International Trade) ", *Shijie Jingji Wenhui* (*Collection of World Economy*) ,No.4,1995,Shanghai,pp.19-25.

9) Compiled from Japan-China Association for Economy and Trade,*Ni-Chu Keikei Journal,* and *Shiryo Ni-Chu Keizai* (*Materials of Japan-China Economy*), various issues. And Lu,S. and C.Ye, "Zhishi Chanquan yu Zhong-Mei Jingmao Guanxi (IPRs and China-US Economic and Trade Relations) ", *Jingji Jingwei* (*Economic Review*) ,Journal of Henan Institute of Finance and Economy,No.3, 1995,Zhengzhou,pp.57-72.

officials and businessmen on the nature of IPR and the importance of its protection, (3)Access to China's market:US audio-visual industries and computer software companies will be permitted to establish joint ventures to produce and sell their products in China. China will not put in place quotas, import licensing requirements and other requirements on the importation of US audio-visual products. [10]

The United States named China as PFC the third time in April 1996, for an estimated US$1.8 billion loss of US firms in 1995 due to piracy in China, and for China's failure to implement the 1995 US-China agreement to "stop illegal CD, video and CD-ROM production, to prevent the export of infringing goods, or to honor its promise to grant market access for legitimate audio-visual products." [11] The United States asked China to prove that it would comply with the 1995 agreement by four concrete measures:(1)Crackdown all factories involved in pirated CDs and CD-ROM productions, (2)Intensify enforcement in areas of China where piracy continues to be rampant, (3)Take actions at China's borders to stop bulk cargo shipments of pirated exports, and (4)Reaffirm market access for US IP-related firms and products. The US warned, if China could not accept these terms, it would slap 100% tariff on Chinese exports, mostly textiles, worth US$3 billion. China vowed to retaliate with similar punitive tariffs on US goods. The responding counter sanction would be on everything from frozen beef to minivans. At last, the across-Pacific trade war was averted by signing the 1996 bilateral agreement on combating copyright piracy.

II China's Progress and Problem in IP Protection

It is widely acknowledged that China has made much progress in IPR legislation and legal enforcement since economic reform. Table 2 chronologizes China's main legislations on IPRs and China's acceding to international IPR protecting organizations since 1980. Moreover, since 1992, China has passed or amended a number of IPR laws and honoured its commitments in China-US agreements on IP protection. As mentioned above, China revised its Patent Law in 1992, which greatly expanded to include all tech-

10) US House of Representatives,Joint Hearing before the Subcommittee on International Economic Policy and Trade and Asia and the Pacific of the Committee on International Relations, *The US-China Intellectual Property Rights Agreement: Implications for US-Sino Commercial Relations*, USGPO, Washington DC,1995,pp.39-46.

11) US Executive Office of the President, *Office of the USTR for Immediate Release*, April 30,1996.

Table 2 Chronology of China's IPR Legislations and Acceding to International IPR Organizations Since 1980

Main IPR legislations:
1982,Trademark Law of the People's Republic of China(PRC) (March 1,1983. Amended in 1993 and 1995)
1984, Patent Law of the PRC,(April1,1985.Amended in 1992)
1986, General Provisions of the Civil Law of the PRC(January 1,1987)
1990, Copyright Law of the PRC(June 1,1990)
1991, Regulations of the PRC on Computer Software Protection(June 1,1991)
1993, Anti-Unfair Competition Law of the PRC(December 1,1993)
1995, Customs Rules of the PRC concerning IPRs(October 1,1995)
* Parenthetic dates are the times when legislations become effective
Main acceding to international IPR organizations:
1980, World Intellectual Property Organization(WIPO)
1985, Paris Convention for the Protection of Industrial Property(Stockholm1967)
1989, Madrid Agreement Concerning the Registration of Trademarks
1992, Berne Convention for the Protection of Literary and Artistic Works(Berne Convention, Paris1971)
1992, The World Copyright Convention
1993, Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms(Geneva Convention)
1994, Patent Co-operation Treaty
1994, Nice Agreement concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks
1995, Budapest Pact(concerning preserving micro organism)
1995, Madrid Agreement concerning the International Registration of Trademarks
1996, Locarno Agreement (concerning classification of industrial designs)
1996, Strasbourg Agreement on International Patent Classification
1997, UN International Covenant on Economic, Social and Cultural Rights
1998, UN International Covenant on Civil and Political Rights

Source:Compiled by the author from various China's official documents.

nological inventions, including products and processes, as patentable subject matter, and extended patent protecting duration for invention from 15 years to 20 years, for utility model and design from five years to 10 years (Patent Law of PRC, Section 5, Article 45). The amendment also stipulated that production, sale, use and importation of a patented product must be authorized by its patentee (ibid, Section 1, Article 11).

China's Trademark Law was amended twice in 1993 and 1995, which added service trademarks to legal protection and more clearly defined the transfer, change and renewal of a registered trademark. In 1996, China made a special provision to provide particular protection for famous trademarks and name brands. In 1993, the National

People's Congress of PRC adopted the Anti-Unfair Competition Law, which provides legal protection for unregistered trademarks, trade names, product packaging and trade dress. The fines and compensation standards under the Anti-Unfair Competition Law are more rigorous than those under the Implementing Rules to Trademark Law in 1983. In copyright, the most outstanding progress is China's Customs protecting regulations on IPRs mapped out in 1995, which empowered the Customs to seize and detain pirated imports and exports.

Since the 1990s, many research institutes of IPRs have been set up in China's universities. China's acceding to UN International Covenant on Economics, Social and Cultural Rights in 1997 and to UN International Covenant on Civil and Political Rights in 1998 became the focus of the world. The two accedings signify a higher recognition of IPRs in China as a part of human rights, as compared with the years before the 1970s, during which inventions and technology were considered to be state property. (Some regulations on awards for inventions and technical improvements approved by the PRC State Council in 1963 provided for some forms of patent rights, but under which only a party, instead of an individual, could apply to the State for official recognition of "his" invention. Should the State find the invention useful, the party was granted a registered certificate and given cash awards, meanwhile, the State would retain ownership of the invention.)

In the meantime, a nationwide legal framework began to establish. In 1992, the first Specialized IPR Tribunals were set up in large cities' courts. Considering that some IPR owners who are hurt by infringements do not like to wait for long judicial procedures and pay for trials, China also provides the enforcement of IP protection through administrative channels. [12]

When reviewing the World Intellectual Property Organization's past 20 years of cooperation with China, A. Bogsch, director-general of the organization, pointed out that "China had accomplished all this at a speed unmatched in the history of intellectual property protection." [13]

The development in IPR legislation led to positive results. By 1995, the Patent Bureau of PRC had accepted 520,000 applications, among which 260,000 or 50% were authorized. In 1996, 813 American patents were granted in China, taking 20% of the

12) Information Office of the State Council, PRC, "Intellectual Property Protection in China," *Beijing Review*, June 20-26, 1994, p.15.

13) Ibid., p.10.

Table 3 Patent Applications Granted in China in Selected Years

	1990	1994	1996
Inventions	3,838	3,883	2,976
Domestic	1,149	1,659	1,383
Foreign	2,689	2,224	1,593
Utility models	16,952	32,819	27,171
Domestic	16,744	32,611	26,961
Foreign	208	208	210
Designs	1,798	6,595	13,633
Domestic	1,411	5,507	11,381
Foreign	387	1,088	2,252
Total applications granted in China	22,588	43,297	43,780
Of which foreign applications granted	3,284(14.5)	3,520(8.1)	4,055(9.3)

* Parentheses are percentages of total foreign applications granted in total applications granted in China in these years.

Source:State Statistical Bureau,PRC,*China Statistical Yearbook 1997*,Beijing, p.692.

total 4,055 foreign patents granted in China in the year. Meanwhile, 670,000 registered trademarks remained valid in China's trademark bureaus. (Table 3) In 1996, China's courts accepted 19,000 cases involved in IPR violations, more than 1,000 defendants were investigated and affired the responsibility for crime. [14]

More facts can be elaborated on. In 1994-95, Chinese government ordered to shut down 12 CD plants involved in piracy. In 1996, another six illegal CD plants were closed. Meanwhile, China began to adopt SID (Source Indicating Distinction), any CDs without being sticked SID would be treated as illegal goods and prohibited from selling. In market, Chinese government confiscated about 400,000 pirated audio-visual cassettes in 1996. [15] During the special enforcement after 1996 US-China negotiation, about 600,000 antipiracy inspectors fanned out across China each day raiding shops and marketplaces. In Customs, 1,277 cases of copyright violation in value of US$1.7 million (98% were CDs) were seized in 1994-95, followed by another 619 illegal cases in value of US$1.6 million seized from January to October in 1996 by the Chinese Customs, who also detained the plastic injectors for pirated CD prodution and refused the entry of CD assembly lines. [16]

14) Ministry of Foreign Economic Relations and Trade, PRC, *Zhongguo Duiwai Jingji Maoyi Baipishu* (*Whitepaper of China's Foreign Economic Relations and Trade*) ,Beijing,1997,p.191.

15) Ibid.,pp.187-188.

16) Ibid.,pp.188-189.

The US government also acknowledged China's progress in enforcing IP protection. USTR Barshefsky noted that "China has taken some significant steps to attack rampant piracy." "The system is becoming more transparent, all of China's IPR laws, regulations, and administrative guidance were published, and public knowledge and understanding of IPR laws and regulations is much better than it was." "China's courts have begun to render significant judgments against IPR offenders."[17]

However, problems in China's IP protection are also obvious, among which two phenomena are worth discussing. One is the disparity between central government and locals in IPR enforcement. Another one is the gap between the high-speed IPR law-making and the lagging public education. As acknowledged by the Chinese government, "awareness of IPRs remains underdeveloped in society at large. In some regions and in some governmental departments there is insufficient appreciation of the importance of IP protection."[18]

It is safe to say that the Chinese government knows well the significance of IP protection in its economic reform and open policy. The central government takes the issue as a vital step to promote China's participation in the world market, and to give impetus to the process of China's legality from *renzhi* (rule by man) to *fazhi* (rule by law). As noted, China has completed in less than 20 years the IPR legislations that basically come up to international standards. In addition, the central authorities have made all efforts to beef up IPR enforcement. However, in contrast with these strivings is the slackness of locals who are eager for instant benefits and who think that IPR enforcement will reduce their local earnings. It is revealed that many of the pirate plants are in strong ties to provincial or local leaders. More seriously, central government seems unable to enforce its directives at some local levels.[19] Moreover, the majority of pirate plants are joint ventures with foreign capital investors. In many cases, foreign businessmen bring original CDs into China for copying, and then send the pirated goods to foreign outlets. Local governments wink at this "profitable processing". IPR enforcement officials and inspectors complain that raids in joint ventures become very difficult because these ventures relate to foreign laws.[20]

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17) USTR Barshefsky,Statement before the Senate Foreign Relations Committee, Subcommittee on East Asian and Pacific Affairs,November 29,1995.

18) Information Office of the State Council,PRC,op.cit.,p.17.

19) Guth,R.and T.Uiomonen, "S.O.S.(Save Our Software)",*Computerworld*,Vol.29, No.31,1995,pp.87-88.

20) *Renmin Ribao* (*The People's Daily*) ,Beijing,May 16,1996,p.3.

On the other hand, education has a direct bearing on IP protection. The Chinese concept of IP protection does not keep pace with high-speed law-making. This lagging phenomenon is partly related to its culture. Many people in China do not treat knowledge as commodity or property. This is best reflected by a traditional Chinese saying: *qieshubusuantou* (The man who pilfers books is not a theft because he steals for getting knowledge). This concept has influenced Chinese people for long time, making them apathetic facing the violations upon intellectual properties. Even now, many enterprises' managers do not know what IPRs are, and misunderstand that knowledge should be shared with no need to pay. It is reported that pirate CD plants in south China are not in secret. US trade officials visited them and recorded their names, addresses and telephone numbers.[21] This at least shows the pirate plants do not know what they are doing is a crime.

The shortage of people with expertise in IPRs hinders China's IP enforcement. Lawyer Buxbaum worries that some of the judges assigned to Specialized IPR Tribunals are unfamiliar with the concept of IPs. "It's only beginning to down on people that copyrights and trademarks are property."[22] So far China's enforcement has meant police raids on street markets and retail outlets. But how can a long-run effective legal institution be reached just by thousands upon thousands of inspectors on a mass patrol every day? China is likely to need a combination of a complaince-based IP protection that emphasizes preventing unlawful behavior by enforcing legality and by penalizing "free riders", and an integrity-based IP protection that creates an environment to support legally sound behavior in IP protection and to stress a shared accountability among the Chinese citizens.

Ⅲ Lessons and Policy Options in US-China Dispute on IP Protection

1. US enforcing IP protection on China and US-China trade imbalance

Apparently, trade deficit with China is one of the triggers for American to dispute with China on IP protection. In fact, trade imbalance has been the most controversial issue between the two countries and has dominated the US Congressional Hearings these years when petition is discussed to deal with violations of IPRs in China. Taking

21) Brauchli,M.W., "Chinese Flagrantly Copy Trademarks of Foreigners", *The Wall Street Journal*, June 20, 1994

22) Ibid.

1994 and 1995, according to US trade records,[23] US deficits with China were valued at US$32.1 billion and US$36.8 billion. Meanwhile, the US estimated sale losses due to illicit copying of CDs, CD-ROMs and software in China were respectively US$1.0 billion and US$ 2.2 billion, accounting for 3% and 6% of US trade deficit with China in the two years. Naturally, the United States believes that enhancing IP protection in China can both halt illegal piracy and offset the US unfavourable trade with China.

In the course of negotiations on IP protection, the United States and China threatened to slap tariffs on imports from the other side. For example, in 1996, the US warned it would impose 100% tariff on about US$3 billion imports from China, equalling 8% of US deficit with China in 1995, mainly on textiles, apparel, sportsware and consumer electronics. These items greatly contributed to China's trade surplus with US. China, on the other side, retaliated by the same tariff rate on imports from US, including agricultural products such as cotton, vegetable oil and foodstuff, auto parts, telecommunication equipments, camera and film, tape-recorders, game, game cards, CDs, cigarettes, wine and cosmetics, and would stop the imports of motion pictures, videos and LDs from US. As a large buyer of US agricultural products and telecommunication equipments, China's antisanction put the US into dilemma between IP-related exporters and agriculture-related exporters.

The threatened trade war over IP protection has never materialized since both US and China understand that a trade war would be a lose-lose aftermath. Neither of them can ignore the fact that the United States now is the third largest partner to both China's exportation and importation, and the impact of a trade war on two countries' external trade and employment. In a tariff battle, China would have more to lose because its exports to US rose from US $16 billion to US$54 billion in 1990-96, while the US exports to China just rose from US$5 billion to US$12 billion in same years. For the US, however, the immediate effect on imported goods price of its imposing heavy duty would also be to increase the relative domestic price, which would further increase if US turns to other countries, instead of China, to import the punitive manufactures, seeing that these manufactures' productions are either closed in US or shifted into foreign countries. US retailers and importers oppose applying sanction upon China. L. Jones, director of the US Association of Importers of Textiles and

23) The United States and China have very different records in their bilateral trade. For details about the statistics discrepancies,please see S.Nakamoto and J.Yan, "Transfer of Manufacturing from Hong Kong and Taiwan into Mainland China and Its Impact on China-US Trade," *Osaka City University Economic Review*,Vol.33,No.2,1998,pp.51-72.

Apparel, said: "Imposing 100% duties on Chinese products amounts to a monstrous tax increase for the American public and a devastating blow to America's retailers."[24] Some experts are farsighted in China's enormous market and China's diversifying trading channels since the economic reform and open policy. B. Stokes, a senior fellow at the Council on Foreign Relations in Washington, noted that "the value of imposing punitive tariffs in this and future confrontations is debatable. If US action leads to Chinese retaliation, the cost to the US economy will not only be the continuing losses due to piracy, but also the lost exports. To the extent that European and Japanese companies are willing to tolerate piracy in China, they will reap the benefits of a US withdrawl from the Chinese market."[25] In this regard, even though in a very unfavorable trade position with China, the United States has to weigh the pros and cons before taking any radical tactics to tackle China on IP protection issues.

2. Policy implications in US-China dispute on IP protection

The United States argues with dozens of countries on IP protection, but no one is comparable to China in such a heated conflict with US on the issue. The arguments between US and other industrialized nations such as Japan and western Europeans are less intensified in vertue of their mature and transparent legislation, and their common interests in IP protection towards developing countries, which makes their negotiations be held *inter se.*[26]However, to date, what stands out in US dispute with China on IP protection is the critical importance of a progmatic mechanism of policy-making. US-China dispute on IP protection is in fact a part of Clinton's policy of comprehensive engagement with China, which takes it as a goal to achieve US interests in economic, political, security, human rights and other areas, or as P. Tomsen, acting assistant secretary of East Asian and Pacific Affairs, US Department of State, simply stated that "the purpose of this policy is to pursue all of our interests at levels and intensities required to achieve results, to seek to build mutual confidence and agreement in areas where our interests converge, and through dialogue reduce the areas in which we have differences, and try to make as much progress as possible."[27] In areas of economy and

24) Quoted from *The Daily Yomiuri*,May 17,1996,p.15.

25) Stokes,B., "A Case of Diminishing Returns", *Los Ageles Times*, cited from *The Daily Yomiuri*,June 3,1996,p.10.

26) For details, see J.Yan,"Inducements for the United States to Enhance Intellectual Property (IP) Protection---Special 301:Its Enforcement and Appraisal," *Osaka City University Economic Review*,Vol.34,No.1,1998,pp.31-53.

27) US House of Representatives,op.cit.,p.10.

trade, Tomsen developed the engagement policy, saying that "The IPR and WTO negotiations must also be viewed in the context of our broader strategy of comprehensive engagement. In economics and trade, this strategy has two key elements: First, we seek to fully integrate China into the global, market-based economic and trading system. China's participation in the global economy will nurture the process of economic reform and increase China's stake in the stability and prosperity of East Asia. Second, we seek to expand US exporters' access to the Chinese market. As China grows and develops, its needs for both goods and services imports will grow even rapidly. This market represents a very important opportunity for US firms and workers." [28]

It's quite evident that IP protection issue is a rigorous test for both China and the United States. For China, the enforcement of IP protection will provide evidence that China is willing to play by international rules. Adequate levels of IP protection can not only bring to China a flood of new industries and products but also intensify China's efforts to join in international trading organizations such as GATT and WTO, and expand China's role in international affairs. Moreover, the enforcement will surely show that China is able to establish a mature legal institution, which will improve China's investment climate for foreign capital, high-technology and services.

For the United States, IP protection in China will benefit US industries that are consistent export earners or create more job opportunities in some US most competitive industries. Mostly, US IP-intensive exports will not be required to compete against pirated and counterfeit goods in China and third countries. Moreover, enforcing the MOU with China will test whether Clinton's engagement policy with China is operational, by "pressing China to enter the international community on a commercially reasonable basis," [29] and by proving that "staying involved and engaged with the Chinese--through the difficult times as well as the good ones--is the right course of section," [30] and that, for those in Congress who are looking at this question of China, "constructive engagement is working." [31]

In a word, the enforcement of IP protection is beneficial to both US and China and will make a win-win result. Both China's President Jiang Zemin and the US President Clinton welcomed the US-China agreements on IP protection. Clinton acclaimed: "This

28) Ibid.,p.50.

29) US House of Representatives,op.cit.,p.9.

30) Quoted from Clinton's speech,see *The Daily Yomiuri*, June 20,1996,p.7.

31) Quoted from USTR Kantor's speech,ibid.

(agreement of 1995) is a strong agreement for American companies and American workers... We have used every tool at our disposal to fight foreign barriers against competitive US exports."[32] At last, US-China negotiations on IP protection "demonstrated that, when all sides are determined to seek mutually acceptable solutions through serious and detailed talks, agreement is always possible."[33]

3. IP protection and China's technology acquisition

The issue on technology transfer to less developed countries boasts of an extensive literature. Vernon (1966), Krugman (1979), Dollar (1986), Flam and Helpman (1987), and Grossman and Horn (1988) have analysed the dynamics of product and technology diffusion from advanced countries to developing countries, concentrating on the mechanism of the diffusion process in some certain industries. Frank (1980), Lall (1981), Diwan and Rodrik (1991), Deardorff (1992), Taylor (1993) particularly elaborated how technologies transfer to developing countries, assuming that imitation is the primary source of developing countries' technology acquisition. In the Uruguay Round of GATT, advanced and developing countries viewed technology transfer and IPRs very differently. Developing countries argued that greater IP protection would strenghten the monopoly power of multinationals and effect poor populations by rising the price of IP-intensive goods, while industrialized nations upheld that IP protection is a prerequisite before transferring goods, plant and investment embodying technology to developing countries.

Lall (1981) pointed out that developing countries generally acquire technologies in two ways:licensing and foreign direct investment (FDI). However, the unwillingness of industrialized nations' putting latest technology into licensing and the foreigners' tech-ownership in FDI often hinder developing countries to obtain a new technology. Ernst and O'conner (1992) examined it from another angle, saying that the institution of stricter IPRs has not had entirely negative effects. In some cases, it has proven to be a stimulus to redouble developing countries' efforts to strengthen technology.

Jeong-Yeon Lee's approach is worth more discussing here. He carried out a statistical investigation using data from the US Department of Commerce for 1989-92, and created an equation to show how US FDI in a particular country is related to the perceived strength or weakness of its IP protection. Lee's equation is illustrated as:

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32) US House of Representatives,op.cit.,p.40.

33) Ibid.,p.51.

$$I_j = A_0 + A_1G_j + A_2M_j + A_3P_j + Z^1_j$$

where I_j is the change in US FDI in the J^{th} country (in 1992), G_j is the GDP of the J^{th} country (in 1989), M_j is a dummy variable that equals one for a model country and zero otherwise, P_j is the mean value of three measures of firms in three groups reporting the weakness of IP protection in j^{th} country, (firms reporting that IP protection is too weak to permit investment in joint venture with local partners, firms reporting that IP protection is too weak to permit transfer of their newest or most effective technology to wholly owned subsidiaries, and firms reporting that IP protection is too weak to permit licensing of their newest or most effective technology to unrelated firms), Z^1_j is a random error term.

Using least-squares, Lee estimated the A's in equation and indicated that the effect of P_j always has the expected sign, and is significant in every case. Holding G_j and M_j constant, a 10-point increase in P_j would result in about a US $200 million decrease in US FDI per year.[34]

In 1978, Deng Xiaoping called for *kejiliguo* (building a modern China with science and technology) to realize the four modernizations, which created an urgent demand for foreign technologies. In economic reform and open policy, China's technology acquisition endeavours to attract FDI that carries technological spillovers. Apparently, however, all ways of technology acquisition through FDI--intrafirm tech-transfer, licensing and spillover--are strictly controlled by their investors, who put IP protection as a *sine qua non* for their FDI in China. The supply of new technology for industrializing countries is determined largely by the degree to which they are integrated with the global economy. For a developing country such as China, which follows a socialist pattern, the international IPR system can hardly offer anything in terms of either supplying advanced technology or promoting domestic innovation.

US-China diplomatic normalization in 1979 helped relax the US strict technology export control to China. In 1979-85, US and China signed more than 200 contracts of licensing, technical consulting and technical services, co-production ventures, plants and projects, with a total value of over US $800 million.[35] To make it more significant,

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34) Quoted from Mansfield,E.,*Intellectual Property Protection,Foreign Investment, and Technology Transfer*,The World Bank,Washington,1994,p.33.

35) Qian,G., "A View From a Commercial Official of the People's Republic of China", *Intellectual Property Rights and Capital Formation in the Next Decade*, ed. by C.E. Walker and M.A.Bloomfield,University Press of America, Inc.,1988,p.84.

Table 4 China's Imports of Technology-intensive Plant and Equipment from US, Japan,UK,France and Germany 1991-95 (contractual value,US$ billion)

	1991	1992	1993	1994	1995	Total
The United States	0.14(4)	1.43(22)	0.51(8)	0.59(14)	2.27(17)	4.94(15)
Japan	0.27(8)	1.38(21)	1.75(29)	0.77(19)	2.25(17)	6.42(19)
UK,France,Germany	0.80(23)	1.14(17)	1.04(17)	1.50(36)	4.32(33)	8.80(26)
China's total imp. of tech-intensive plant and equip.	3.64	6.59	6.11	4.11	13.03	33.30

* Parentheses are percentages in China's total imports of tech-intensive plant and equipment in each corresponding year.

Source:Ministry of Foreign Economic Relations and Trade, PRC, *Zhongguo Duiwai Jinji Maoyi Baipishu* (*White Paper of China's Foreign Economic Relations and Trade*),Beijing,1997,p.443.

China rejected the Soviet Union's system of inventors' certificates in favor of a system similar to US. Besides, difficulties in absorbing new technology during the 1960s and the 1970s had influenced Chinese policy makers in the early 1980s to define technologies more broadly to encompass organizational and management skills and know-how rather than just engineering in a norrow sense, and to develop a greater appreciation for the importance of acquiring 'software' as well as technology embodied in physical capital (Ho 1997).

Encouraged by China's economic reform and open policy, Coordinating Committee for Export Control (COCOM) liberalized 30 tech-intensive exports to China in 1985. Meanwhile the US also further adjusted its China policy and permitted 27 items to be directly exported to China, no need to be censored by COCOM, if China pledged not to transship the US technology to a third country and not for dual-use. In 1987, another three items were added to the untied exports. Relaxation of export control doubtlessly stimulated US exports of technological products and equipments to China, which increased from US$ 0.6 billion in 1982 to US$1.7 billion in 1988.[36] Table 4 shows China's imports of tech-intensive plants and equipments from the United States, Japan, Germany, the United Kingdom and France in 1991-95.

As China seeks to improve technological know-how in almost every industry, as it should be, the US is in a good position to expand technical cooperation with China in many ways. It was estimated in 1995 that of the equipment and processes employed in

36) *Guoji Jingmao Xiaoxi* (*Information of International Economy and Trade*) , Beijing,July 3,1997,p.1.

China's industries, 30% were technologically backward, 25% urgently needed to be replaced, and about 35% of the outdated equipment should be abandoned.[37] China has been keen to upgrade technology in virtually every sector, especially giving priority to infrastructure development, such as energy, telecommunication and transportation sectors. Knowing well that the level and availability of technology have a direct effect on advancement of a country's infrastructure, the Chinese have a high regard for US technological products and want to see more US firms in China.

China's policy on absorbing foreign technology can be simply defined in three steps: acquisition, absorption and diffusion. This policy has been widely adopted in the world. Ostroff (1995) explained in broad terms, putting that technology transfer covers the assignment or licensing of patents or other industrial property rights, the provision of technical services, and the sharing of know-how, which is provided in the form of drawings, technical data, and technical specifications. A technology transfer deal can consist of a relatively simple agreement in which a foreign firm allows a Chinese company to use its technology for a set period, or it can involve a far more complex arrangement whereby a foreign firm contributes technical expertise and industrial processing equipment as part of its equity contribution to a joint venture in China. Ostroff's exposition denotes two points. First, in introducing foreign technology by FDI, China can use the "invested" equipments but can not be in possession of their related patents, know-how or other industrial properties, (unless foreign owners sell their IPRs to China). China can only use the technology by an assignment or license "for a set period". Second, in joint venture, foreign intellectual properties are a part of foreign partner's equity. This means not only the IPs are calculated as foreign equity on paper and paid by loyal payment, but also the IP rights should be properly enforced and systematically protected.

Undoubtedly, transferring technology into a country that can not protect IPRs adequately is risky and hazardous for foreign investors. In a survey of 1992 comprising 94 major US firms in six industries, Mansfield (1994) found that 80% of the firms in investment of R&D facilities reported that IP protection is of importance, and 100% of the firms in chemicals and pharmaceuticals responded the same idea. In the survey, the chairman of a major chemical company said: "There is no question that we will not put good product technology in a country where we cannot protect it." Another chemi-

37) McElligott,S., "A Better Mindset on Intellectual Property?" *Chemical Week* (China Supplement) ,Aug.30-Sept.6,1995,pp.7-8.

cal executive stated: "We will not expose technology of any significant value in countries where it is not safe. Where there is a total lack of any protection and rampant piracy.... (In that country) you are assured that pirate competitors will steal anything you send in and use it to compete with you in (that country) and through exports." The third chemical executive put it more radically: "Good laws mean nothing unless they can be enforced and enforcement is something that can only be judged by observing the system over a period of time."[38]

To conclude, technology transfer involves more than just the purchase of technology itself. For a long-run and positive policy of acquiring foreign technologies, China has to now set about two tasks. First, stop the locals' pursuit of parochial interests secured through IPR violations at the expense of national interests. Second, establish an institutional framework of IP protection. With these two tasks fulfilled, China will make better use of its opportunities to import advanced technology and equipment, or otherwise, China's acquisition and absorption of technology will continuously be troubled by problems in IP protection.

Concluding remarks

US-China dispute on IP protection refers to three scenarios: (1)US enforcing IP protection on China and US-China trade imbalance, (2)Policy implications of the United States and China in IP protection issues, and (3)IP protection and China's technology acquisition. The US goal in this dispute is to stop infringements on US-held IPRs in China and to enter the Chinese IP markets. Besides, the US dispute with China on IP protection is a part of the US comprehensive engagement policy with China. This policy aims at integrating China into a market-based economy and an internationally accepted trading system.

US-China dispute on IP protection is also of significance to China. An enforcement of IP protection can provide evidence that China is able to bring IPR violations under control and is willing to play by international rules. This will surely promote China's coming into the WTO and improve China's investment climate for absorbing foreign capital incubating advanced technologies. Domestically, IP protection enforcement can help foster the public conception of fair competition in China and give impetus to China's process of constructing a legal institution.

There is no denying the fact that China has made much progress in legislation and

38) Mansfield,E.,op.cit.,pp.2,3,14 and 29.

enforcement of IPR laws and that potential for US exports to China has been enhanced greatly by US-China agreements on IP protection. It is predicted that China's further IP protection enforcement will open vast vistas for US-China economic and trade relations.

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