

INTELLECTUAL PROPERTY, ECONOMIC DEVELOPMENT, AND THE CHINA PUZZLE

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ABSTRACT

Since the late 1980s, the Chinese economy has been growing at an enviable average annual rate of about ten per cent. Accompanying this unprecedented economic development and growth was the maturation of the modern Chinese intellectual property system. In the 1980s, China introduced its first modern copyright, patent, and trademark laws. A decade later, China revamped its intellectual property system in response to U.S. pressure and did so again in preparation for its accession to the World Trade Organization. At present, China is a proud member of many multilateral intellectual property agreements. Notwithstanding these developments, the enforcement of intellectual property rights in China remains inadequate.

Although commentators often link intellectual property protection with economic development, China thus far has presented a puzzle to those who study this link. While some commentators consider China a paradigmatic case for showing that rapid economic development can take place despite limited intellectual property protection, others have noted gradual improvements in the Chinese intellectual property system as the country became more economically developed. In fact, history suggests that China is now simply following the economic development paths of Hong Kong, Japan, Singapore, South Korea, Taiwan—or even Germany and the United States. It is only a matter of time before China will be converted from a pirating nation to a country that respects intellectual property rights.

This Paper examines the relationship between intellectual property protection and economic development. It begins by exploring the conventional linkage between intellectual property protection and foreign direct investment. It then examines why China expanded its intellectual property protection even though such expansion was unnecessary for attracting foreign direct investment. The Paper concludes by highlighting the country's regional and sectoral disparities, its inadequate development of an enabling environment for effective intellectual property protection, and its improvements in intellectual property protection at both the microscopic and qualitative levels. The Paper takes the view that a better understanding of the role of intellectual property protection in promoting economic development will help provide a more accurate forecast of when China will

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reach a crossover point at which it will find stronger intellectual property protection in its self-interests.

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INTRODUCTION

Since the late 1980s, the Chinese economy has been growing at an enviable average annual rate of about ten per cent. China's imports "tripled from \$225 billion in 2000 to \$600 billion in 2005," and the country "accounted for about 12 percent of the growth of global trade," an impressive jump from only 4 per cent in 2000. Today, China has become one of the world's largest surplus countries, possessing one of the most sizeable foreign exchange reserves in the world.

Accompanying this unprecedented economic development and growth was the maturation of the modern Chinese intellectual property system. Since the reopening of its market to foreign trade in the late 1970s, China introduced its first modern copyright, patent, and trademark laws. A decade later, China revamped its intellectual property system in response to U.S. pressure and did so again in preparation for its accession to the World Trade Organization (WTO). At present, China is a proud member of many multilateral intellectual property agreements, including the Berne Convention, Geneva Convention, Paris Convention, the Patent Cooperation Treaty, and UPOV (International Union for the Protection of New Varieties of Plants).

Notwithstanding these developments, the enforcement of intellectual property rights in China remains inadequate. Every year, U.S. industries are estimated to have lost billions of dollars due to piracy and counterfeiting in the country. As the International Intellectual Property Alliance stated in its recent Special 301 Report, copyright piracy in China resulted in \$2.2 billion of U.S. trade losses in 2006 alone. Of particular concern is the considerable quantity of the infringing products that have been exported to other foreign markets. To protect its industries, the United States has recently requested consultations with China over its failure to comply with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) concerning protection and enforcement of intellectual property rights.

Although commentators often link intellectual property protection with economic development, China thus far has presented a puzzle to those who study this link. While some commentators consider China a paradigmatic case for showing that rapid economic development can take place despite limited intellectual property protection, others have noted gradual improvements in the Chinese intellectual property system as the country became more economically developed. In fact, history suggests that China is now simply following the economic development paths of Hong Kong, Japan, Singapore, South Korea, Taiwan—or even Germany and the United States. It is only a matter of time before China is converted from a pirating nation to a country that respects intellectual property rights.

This paper examines the relationship between intellectual property protection and economic development. It begins by exploring the

conventional linkage between intellectual property protection and foreign direct investment (FDI). Part I argues that, even though intellectual property protection can attract FDI in a country that has a strong imitative capacity and a sufficiently large market, foreign investors are likely to be attracted to China because of its low production costs and considerable market potential. Drawing on recent research that focuses on the “push” explanation of FDI, this Part also shows that the country’s inefficient economic system and preferential treatment of foreign investors have enticed local entrepreneurs to seek out FDI from firms in Greater China. Thus, instead of considering China the proverbial exception to the causal relationship between intellectual property protection and FDI, this Part contends that China illustrates rather well the ambiguity of that relationship and the complex interplay of the different location advantages that affect private investment decisions.

Part II examines why China expanded its intellectual property protection even though such expansion was unnecessary for attracting FDI. Tracing the growing protection to both external pressure and internal push, this Part underscores the intertwined relationship between intellectual property protection and economic development in China. While external pressure from the United States and the Chinese leaders’ willingness to align intellectual property reforms with the national modernization goals provided the momentum needed for early intellectual property reforms, the development of local stakeholders who benefited from stronger protection, the determination to develop a knowledge-based economy, the economic and reputational gains of China’s WTO accession, and the country’s increasing shift towards an export-driven economy were primary drivers for later reforms. This Part argues that, even though stronger intellectual property protection was unnecessary for attracting FDI and, in fact, might have incurred significant social costs, such protection promoted economic development in certain parts of the country and resulted in the creation of local stakeholders who benefited from and lobbied for stronger protection.

Despite the growing benefits of stronger intellectual property protection to China, it remains intriguing to see *when* China will find it in its self-interest to offer stronger intellectual property protection. To provide a more accurate forecast of when China will reach this crossover point, and to better understand the socio-economic impact of the expansion of intellectual property protection in China, Part III highlights the country’s regional and sectoral disparities, its inadequate development of an enabling environment for effective intellectual property protection, and its improvements in intellectual property protection at both the microscopic and qualitative levels. Taking account of these emerging developments is important, because a failure to do so not only would obscure the study of the relationship between intellectual property protection and economic development, but would also make it difficult for policy makers and rights holders to develop solutions to respond to the rampant piracy and counterfeiting problems in the country.

I. INTELLECTUAL PROPERTY, FDI, AND THE CHINA EXCEPTION

A. *The Theory*

Conventional wisdom holds that strong intellectual property protection is needed to attract foreign investment in less developed countries, because firms are reluctant to invest in a foreign country unless they are assured of protection of their intellectual assets and financial investment. However, recent empirical research questions this conventional wisdom. As Carsten Fink, Keith Maskus, Carlos Primo Braga, and other economists have shown, intellectual property protection is more likely to attract FDI only when two additional conditions are met. First, the country needs to have a strong capacity to imitate foreign products and technologies. If local competitors are unable to copy these products and technologies, the business interests of foreign firms are unlikely to be threatened, and intellectual property protection will be unnecessary. Second, the country needs to have a sufficiently large market to enable foreign firms to capture economies of scale or scope. In a country that lacks such a market, foreign firms are unlikely to find it advantageous to move their productions abroad.

Even if these two conditions are met, policy makers still have to question what form of protection needs to be strengthened in order to promote economic development. Paul Heald and Keith Maskus each suggested that firms that seek to establish manufacturing or research-and-development plants are unlikely to require more protection than what is needed to ensure the non-disclosure of technologies brought in by foreign firms. While these firms need trade secrets and contractual protection, firms seeking to establish markets for finished products need copyright, patent, and trademark protection instead. Thus, it is important to separate investment decisions that seek to relocate manufacturing or research-and-development facilities from those that seek to market finished products.

While strong intellectual property protection is a main concern for marketing decisions, a decision to relocate manufacturing facilities is likely to be determined by such “location advantages” as “market size and growth, local demand patterns, transport costs and distance from markets, low wage costs in relation to labor productivity, abundant natural resources, and trade protection that could encourage ‘tariff-jumping’ investments.” Likewise, a decision to relocate research-and-development facilities is likely to be affected by “the level of education and training of the local workforce, the condition of its financial sector, the health of its legal system, and the transparency of governmental procedures.”

To make things more complicated, firms can resort to many different investment strategies, and FDI is only one of them. Using John Dunning’s ownership–location–internalization framework, economists have shown that, even in the presence of favorable location advantages, firms still need to

decide whether they want to serve foreign markets through FDI, export finished products to the less developed market, conduct arm's-length technology licensing, set up joint ventures with local manufacturers or distributors, or ignore the foreign market entirely. As Carlos Primo Braga and Carsten Fink explained:

In order for firms to invest abroad, two further conditions must be met. First, the foreign country must offer location advantages that make it more profitable to locate business abroad. Location advantages are usually associated with factors such as high transportation costs and tariffs, low input prices, access to distribution networks, and local regulatory environments. Second, it must be more profitable for firms to internalize production rather than to sell or license their intellectual assets to independent local firms in the foreign country. Internalization advantages take the form of avoiding transaction costs with potential licensees, controlling inputs, and protecting quality.

While the strength or weakness of intellectual property protection will “influence a firm’s decision to internalize or externalize its intellectual assets,” it is only one of the many location advantages that influence such a decision. As Keith Maskus put it in the FDI context, “IPRs are an important component of the general regulatory system, including taxation, investment regulations, production incentives, trade policies, and competition rules. The joint implementation of an overall pro-competitive business environment matters most for FDI.”

Paradoxically, the strengthening of intellectual property protection may encourage firms to conduct more arm's-length technology licensing, which in turn will result in a reduction of FDI. As Primo Braga and Fink explained, intellectual property protection can affect foreign investment in two negative ways: “First, stronger IPR protection provides title holders with increased market power and could, at least theoretically, cause firms to actually divest and reduce their service to foreign countries. Second, higher levels of protection may cause [transnational corporations] to switch their preferred mode of delivery from foreign production to licensing.” Whether a firm will choose to license will depend on transaction costs—in particular, the robustness of the local regulatory regimes, the existence of a contracting culture and experience, and the availability of information needed to evaluate the transactions. In places where there is limited intellectual property protection, the firm’s need to internalize foreign production to maintain direct control over their proprietary assets may also affect licensing decisions. If the firm chooses to externalize its production through, say, licensing, stronger intellectual property protection arguably would have the “cancel out” effect of reducing FDI.

Finally, most firms do not need to make the difficult decision between relocating their entire facilities and not relocating at all. They can

simply decide which type of operations they want to relocate abroad and whether they want to combine FDI with other investment strategies, such as export, licensing, or establishment of joint ventures. Even if they choose to relocate abroad, they can still decide “where to invest and in what kind of facilities, whether to purchase existing operations or construct new plants (so-called ‘greenfield investments’), which production techniques to pursue, and how large an equity position to take with potential local partners.”

Economists generally distinguish between “horizontal FDI” and “vertical FDI.” While the former refers to the investment made when “firms establish plants abroad to produce the same or similar goods for local or regional markets,” the latter “occurs if plants in different countries produce outputs that serve as inputs in other plants.” Although intellectual property protection affects both horizontal and vertical FDI, the amount and composition of FDI vary according to the impact of such protection on the particular production process.

For example, Edwin Mansfield observed in his influential study for the World Bank that, “[w]hile U.S. firms may be quite willing to invest considerable amounts in sales and distribution outlets and in rudimentary production and assembly facilities in countries with weak protection, their investments in R and D facilities or in facilities to manufacture components or complete products may be more likely to go to countries with stronger protection systems.” Because “[v]ertical FDI is more prevalent among [multinational enterprises] that invest in developing (low-wage) economies, while horizontal FDI tends to characterize the investment decisions of MNEs operating across borders within the industrialized, developed nations,” the amount and proportion of each type of investment may fluctuate with the country’s economic development. As the country becomes more developed economically, the amount of horizontal FDI may increase while that of vertical FDI may decrease.

In sum, countries that lack a strong imitative capacity and a sufficiently large market are unlikely to benefit from stronger intellectual property protection. However, even if countries meet these two prerequisites, stronger intellectual property protection may be unnecessary for attracting FDI. It depends on the complex interactions between the different location advantages, especially when some of these advantages are significant enough to compensate for the lack or ineffectiveness of strong intellectual property protection. Thus, the relationship between the strength of intellectual property protection and FDI remains theoretically ambiguous.

B. *The Practice*

Commentators often consider China as an exception to the causal relationship between intellectual property protection and economic development. However, China is not the exception they suggested. Rather,

it illustrates the ambiguous relationship between intellectual property protection and economic development and the complex interplay of the different location advantages that can affect private investment decisions.

To begin with, China has met the two prerequisites needed for a country to benefit from stronger intellectual property protection. Since the reopening of its market to foreign trade in the late 1970s, China has developed a strong imitative capacity. In fact, such capacity explains China's ability to produce a large amount of pirated and counterfeit products. Moreover, China has seen tremendous economic growth in the past two decades. Today, China boasts a healthy market of hundreds of millions of customers, even though it has yet to offer one billion customers as some would hope.

Nevertheless, intellectual property protection in the country remains inadequate and ineffective, and it is unlikely that foreign firms were attracted to China because of its intellectual property system. Instead, firms often relocate to China to take advantage of the lower production costs and the emerging market. To many of these firms, the lower costs and the promise of an enormous market would easily make up for the losses incurred by ineffective intellectual property protection. While these firms certainly welcome greater intellectual property reforms, they do not find stronger protection a prerequisite for obtaining profits in the first place. In fact, many major Western firms—like Coca-Cola, Kodak, Motorola, Procter & Gamble, and Siemens—have already been enjoying substantial profits for years despite serious piracy and counterfeiting problems. Thus, instead of seeing strong intellectual property protection as the necessary precursor to profitability, they see it more as a means to “increas[e their] already acceptable profit ratios.”

Other firms, especially those that are new to China or are unfamiliar with the local conditions, have been less successful. Nevertheless, they consider the emerging Chinese market too large to ignore. While some consider the losses unavoidable as they build up their market share and improve their position in this emerging market, others write off their piracy-related losses as promotional expenses. The latter approach easily reminds one of the remark Microsoft's founder Bill Gates made a few years ago. When questioned about the widespread piracy of Microsoft software in China, Gates observed: “Although about three million computers get sold every year in China, people don't pay for the software. Someday they will, though. And as long as they're going to steal it, we want them to steal ours. They'll get sort of addicted, and then we'll somehow figure out how to collect sometime in the next decade.”

Recent research, however, has revealed a more complicated picture concerning FDI in China. The amount of FDI in a country does not depend only on “pull” factors, but also on “push” factors, such as those that have made the country unappealing for local production. As Huang Yasheng

pointed out in his provocative book, *Selling China*, the inefficiencies of the Chinese economic system and the country's preferential treatment of foreign investors have led to a large amount of FDI in the country. Because commentators tend to focus on the attractions of the Chinese market, they often ignore how "[t]he poor profitability of the state sector, the credit constraints on the part of Chinese private firms, the insecurity of private property rights, and the weaknesses of domestic firms have all driven up China's demand for FDI."

To Professor Huang, the considerable amount of FDI in China may reflect the weakness, rather than the strength, of the Chinese market. As he explained: "China's low labor—and land—costs do not automatically motivate a Hong Kong firm to *invest* in China; instead, they motivate a Hong Kong firm (or any other firm) to *do more business* with China, as opposed to doing more business with, say, Mexico. China's low labor costs tell us something about the location of a labor-intensive production facility, but not about who owns it." Professor Huang therefore credited the superior regulatory and legal treatments of foreign-invested enterprises as an important motivation for private entrepreneurs in China to seek out FDI from its neighbors. His thesis also illuminates why a substantial amount of investment was derived from businesses in Hong Kong and Taiwan as well as those owned by the Chinese diaspora. After all, if local firms have to reach out for FDI, they are more likely to turn to firms in the so-called Greater China.

In sum, the drastically lower production costs, the country's enormous market, its inefficient economic system, and the preferential treatment of foreign investors have all helped to attract FDI in China. Because these factors more than compensate for the country's weak intellectual property protection, FDI in China increased substantially despite limited intellectual property protection in the country. China therefore is not an exception to the causal relationship between intellectual property protection and FDI, but an ideal case study to illustrate the ambiguity of this relationship and the complex interactions between the many location advantages that affect private investment decisions. After all, as Keith Maskus pointed out, if stronger intellectual property protection always led to more FDI, "recent FDI flows to developing economies would have gone largely to sub-Saharan Africa and Eastern Europe . . . [rather than] China, Brazil, and other high-growth, large-market developing economies with weak IPRs."

II. INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT

"Since 1983, FDI [in China] has grown from less than \$1 billion a year to more than \$60 billion, and it is projected to soon reach \$100 billion annually." Today, China is one of the world's largest recipients of FDI with capital inflows of about \$50 billion, behind the United States and the United

Kingdom. Such an influx of FDI not only provides China with the foreign capital needed for economic modernization, but also results in technology transfer, job creation, development of human capital, and generation of tax revenues. Although economists have pleaded for caution in considering the benefits of FDI to recipient countries, there is no denial that the influx of foreign capital has contributed to China's recent rise to its status as an emerging economic superpower.

As Part I points out, strong intellectual property protection is not always needed for attracting FDI. In fact, stronger protection may reduce investment by encouraging investors to conduct arm's-length transactions by licensing their products. Such protection would also reduce the net gains in economic welfare from increased FDI by incurring significant costs, such as administrative and enforcement costs, adjustment costs due to labor displacement, social costs associated with monopoly pricing, higher imitation and innovation costs, and potential costs resulting from the abuse of intellectual property rights. Stronger intellectual property protection therefore would drain the country's scarce governmental resources, render cutting-edge foreign technologies inaccessible, and stifle the development of local industries. Given the significant costs of strengthening intellectual property protection, Chinese policy makers and commentators understandably were worried that stronger protection would slow down the country's economic progress and therefore would make it difficult for the country to catch up with its Western developed neighbors.

Indeed, as Rod Falvey, Neil Foster, and David Greenaway have shown recently, although intellectual property protection promotes innovation in high-income countries and technology flows in low-income ones, middle-income countries may suffer from offsetting losses due to the reduced scope of imitation. Likewise, as the U.K.-based Commission on Intellectual Property Rights cautioned, "rapid [economic] growth is more often associated with weaker IP protection. In technologically advanced developing countries, there is some evidence that IP protection becomes important at a stage of development, but that stage is not until a country is well into the category of upper middle income developing countries."

If the costs of strong intellectual property protection are not enough, the costs of introducing an inappropriate intellectual property system can be quite high for less developed countries. Although overprotection of intellectual property rights harms both developed and less developed countries, it usually harms less developed countries more than it would harm their developed counterparts. Many less developed countries lack the economic strengths and established correction mechanisms to overcome problems created by an unbalanced system. As the Commission noted, "if anything, the costs of getting the IP system 'wrong' in a developing country are likely to be far higher than in developed countries. Most developed countries have sophisticated systems of competition regulation to ensure that

abuses of any monopoly rights cannot unduly affect the public interest.” Even if stronger intellectual property protection is beneficial to less developed countries in the long run, they may lack the needed wealth, infrastructure, and technological base to take advantage of the opportunities created by the system in the short run.

In sum, all of these potential negative impacts of stronger intellectual property protection lead one to wonder why China introduced reforms to offer stronger intellectual property protection at all. After all, both theories and actual practice have suggested that China would have limited net economic benefits from stronger intellectual property protection during the first decade of the reopening of the Chinese market to foreign trade. Acknowledging the Chinese leaders’ lack of focus on these net benefits in the early development of the modern Chinese intellectual property system, this Part traces the intellectual property reforms to both external pressure and internal push. While external pressure from the United States and the Chinese leaders’ alignment of intellectual property reforms with the national modernization goals provided the momentum needed for early intellectual property reforms, the development of local stakeholders who benefited from stronger protection, the determination to develop a knowledge-based economy, the economic and reputational gains of China’s WTO accession, and the country’s increasing shift toward an export-driven economy were primary drivers for later reforms.

A. External Pressure

Shortly after China reopened its market to foreign trade in the late 1970s, China and the United States signed the Agreement on Trade Relations Between the United States of America and the People’s Republic of China, which, among other things, called for reciprocal protection of copyrights, patents, and trademarks owned by the nationals of the other party. Pursuant to this agreement, China became a member of the World Intellectual Property Organization (WIPO). It also promulgated a new trademark law in 1982 and a new patent law in 1984 and joined the Paris Convention in 1985. Notwithstanding these new developments, China afforded authors and inventors very limited protection, due to the leaders’ concern about establishing new private property interests in a socialist economic system, their belief that strong intellectual property protection is inappropriate for a less developed country like China, and their inexperience with Western forms of intellectual property protection. While the new laws granted individuals rights in their marks and inventions, these statutes included many limits that rendered the original grants largely insignificant.

Concerned about the lack of intellectual property protection in China, copyright in particular, U.S. businesses lobbied their government heavily for stronger pressure on China. In the late 1980s and early 1990s, the U.S. government repeatedly threatened China with a series of economic sanctions,

trade wars, non-renewal of most-favored-nation status, and opposition to China's entry into the WTO. Such threats eventually led to the issuance or signing of two memoranda of understanding in 1989 and 1992, an "agreement" regarding intellectual property rights in 1995 which appeared in the form of an "exchange of letters" with an attached action plan, and an "accord" reiterating China's commitment to strengthening intellectual property protection in 1996.

Although the seldom-mentioned 1989 memorandum of understanding reassured the United States that China would strengthen its protection for computer software, the 1992 memorandum was the "first full bilateral IPR agreement" between China and the United States. In retrospect, the 1992 memorandum was effective in revamping China's intellectual property system. Pursuant to that document, China acceded to the Berne Convention and ratified the Geneva Convention. China also amended its 1990 Copyright Law, issued new implementing regulations, and adopted a new unfair competition law that provided trade secret protection.

Likewise, the 1995 Agreement was effective in helping China create an institutional infrastructure conducive to protecting and enforcing rights created under this new intellectual property regime. The Agreement introduced the State Council Working Conference on Intellectual Property Rights, which was later replaced by the State Intellectual Property Office, as well as the Enforcement Task Forces. To protect CDs, laser discs, and CD-ROMs, the agreement established a unique copyright verification system, proposing to punish by administrative and judicial means any manufacturer of audiovisual products who failed to comply with the identifier requirement. The agreement also called for title registration with the National Copyright Administration and local copyright authorities of foreign audiovisual products and computer software in CD-ROM format. In addition, the agreement required customs offices to intensify border protection for all imports and exports of CDs, laser discs, CD-ROMs, and trademarked goods. The agreement further stipulated that relevant authorities would conduct training and education on intellectual property protection throughout China. Finally, the agreement provided that the Working Conference would develop a transparent legal system while compiling and publishing guidelines regarding application and protection in various areas of intellectual property law.

Notwithstanding these two agreements, piracy remained rampant in China in the mid-1990s, and the United States was estimated to have lost \$2 billion of revenues annually due to copyright piracy. To make things worse, the ineffectiveness of the coercive tactics used by the United States Trade Representative (USTR) has become apparent to not just Chinese negotiators and seasoned commentators, but also the U.S. industries and the American public. Although the two countries reached another "accord" in 1996, that document clearly revealed the limitation of the coercive approach. The

document included neither significant new terms nor terms that improved market access of American products; instead, it merely reaffirmed China's commitment to protect intellectual property rights made under the intellectual property agreement signed the year before.

As industry support decreased, the Clinton administration abandoned its strong-arm tactics shortly after the 1996 negotiations. Although the United States continued to exert pressure on China during the negotiation of China's accession to the WTO, and undertook frequent consultations with Chinese officials, the United States has yet to revive its coercive approach—partly because of the approach's limitations and partly because of its impracticality after China's WTO membership. Under the WTO, countries are prohibited from taking retaliatory measures before they have exhausted all of the actions permissible under the rules. Except in areas that are outside the scope of the TRIPS Agreement, China's WTO membership has greatly constrained the United States's ability to exert external pressure on China in the intellectual property area. To make up for the lack of external pressure, U.S. businesses now exert pressure from within the country—through persuasion, business pressure, and alliances with local stakeholders and authorities.

In February 2005, U.S. policy makers and trade groups again urged the administration to file a formal complaint against China with the WTO Dispute Settlement Body concerning inadequate intellectual property protection. A few months later, the United States, in conjunction with Japan and Switzerland, invoked article 63(3) of the TRIPS Agreement to formally request “clarifications regarding specific cases of IPR enforcement that China has identified for the years 2001 through 2004, and other relevant cases.” In April 2007, the United States finally requested consultations with China concerning its failure to protect and enforce intellectual property rights in pursuance to the TRIPS Agreement. As of this writing, the United States, however, has yet to request the establishment of a WTO dispute settlement panel. If the United States did so, and if China were found to have violated the TRIPS Agreement, external pressure again might play an important role in unleashing and accelerating intellectual property reforms in China.

B. Internal Push

1. Alignment with the National Modernization Goals

While researchers have explored extensively the relationship between intellectual property protection and economic development, they rarely examine the rhetorical effects of the claim that stronger intellectual property protection will promote economic development. The lack of such an examination is understandable considering the difficulty in quantifying and assessing rhetorical effects. Nevertheless, rhetoric is needed to persuade the populace to accept a new government policy, and may also provide the

direction and psychological incentives needed for promoting economic development.

To some extent, the rhetorical significance of the claim that stronger intellectual property protection will promote economic development is similar to the significance of the claim that intellectual property is property. Despite the uneasy analogy of intellectual property to real property, intellectual property rights holders have widely used the rhetoric of private property to push for stronger protection. Meanwhile, foreign rights holders and governments have also used the economic development rationale to entice foreign leaders and policy makers to ratchet up intellectual property protection and, more specifically, to establish the TRIPS Agreement within the WTO. As Daniel Gervais recounted, developed countries and the lobbies that pushed for stronger intellectual property protection believed that “TRIPS was a difficult but essential measure to jumpstart global economic development,” while less developed countries “were told to overlook the distasteful aspects of introducing or increasing intellectual property protection and enforcement in exchange for longer-term economic health.” Similarly, Edmund Kitch argued that less developed countries agreed to stronger intellectual property protection during the TRIPS negotiations because they found such protection in their self-interests, although the negotiation records and the reactions of less developed countries offered very limited support for Professor Kitch’s account.

While the rhetorical linkage of intellectual property to economic development is important to induce less developed countries to offer stronger protection, it is particularly important to a country like China, which has placed heavy emphasis on symbols and political movements and was emerging from autarky and diplomatic isolation. Since the reopening of the Chinese market to foreign trade in the late 1970s, Deng Xiaoping and other reformist leaders advocated a pragmatic “economics in command” approach to replace Mao Zedong’s “politics in command.” Seeing economic wealth as the foundation of China’s power, the reformist leadership believed “whether China could have a rightful place in the world of nations depended on China’s domestic economic development.” These leaders therefore vigorously pushed for the Four Modernizations to develop China’s world-class strengths in agriculture, industry, science and technology, and national defense. They also established Special Economic Zones to transform socio-economic conditions in coastal areas and renewed diplomatic and commercial ties with the United States, Japan, and other Western developed countries. The 1979 U.S.–China trade agreement was a product of this urgent push for greater internationalization.

While economic development was easily justified by the severe need for reforms following the Cultural Revolution, the death of Mao Zedong, and the subsequent arrest of the infamous Gang of Four, the justification for intellectual property reforms remained elusive. Indeed, when China

reopened its market to foreign trade in the late 1970s, both the Chinese leaders and the populace considered intellectual property an alien concept transplanted from Western soil. As William Alford pointed out in his seminal work, *To Steal a Book Is an Elegant Offense*, the notion of intellectual property protection did not take root in China despite earlier attempts to transplant the concept onto the country through bilateral commercial treaties at the turn of the twentieth century and intellectual property reforms during the Republican era. Even if those reforms introduced the concept to the Chinese populace, the numerous class struggles, mass movements, and the Cultural Revolution that rejected ownership of private property virtually eliminated from public consciousness the concept of intellectual property.

Thus, when this concept was reintroduced in the 1980s, the justification for such a concept was badly needed. In his well-cited chapter concerning justifications for intellectual property protection, William Fisher identified four possible justifications—utility, labor, personality, and social planning. For a society that was making a transition from a command economy, rather than today's socialist market economy, the first and second justifications were easily deemed unsuitable. Indeed, early Chinese intellectual property laws were filled with compromises that resulted in what commentators called "socialist legality with Chinese characteristics." While the Chinese leadership was anxious to create a stimulus for inventions and to rehabilitate scientists, inventors, and academics, to make up for the time lost to the Cultural Revolution, the leaders remained gravely concerned about the impact of new intellectual property rights on the country's socialist economic system.

The third justification, which was based on personality theories, was attractive to the Chinese, because it sat well with Communist ideology and the Soviet notion of non-property-based protection of authorship. Recent research by Mira Sundara Rajan, for example, has shown that the Russian Copyright Act of 1928 granted limited recognition to the authors' property interests by "plac[ing] them within the broader context of a non-property theory of authorship." As a 1938 commentary on the Russian Law noted, the Soviet author's right "has the objective of protecting to the maximum the personal *and property* interests of the author, coupled with the assurance of the widest distribution of the product of literature, science and the arts among the broad masses of the toilers." Nevertheless, the personality justification—in particular, its emphasis on moral rights—was inconsistent with foreign demands for stronger intellectual property protection, which reflected the interests of and the more utilitarian approach embraced by Western rights holders.

The most suitable justification was therefore what Professor Fisher described as "social planning," which ranges from the development of the economy to the nurturing of an attractive intellectual culture. As he

explained, “[t]his approach is similar to utilitarianism in its teleological orientation, but dissimilar in its willingness to deploy visions of a desirable society richer than the conceptions of ‘social welfare’ deployed by utilitarians.” This justification therefore fit well with China in the early 1980s, and economic modernization provided the needed “social planning” justification for a new intellectual property system. Since then, intellectual property reforms have been linked to the country’s rapid economic development and have benefited from the push for continuous economic reforms.

Politically, backing the newly-established intellectual property system with rhetoric that was consistent with the national modernization goals was very important. As David Zweig suggested, directions from the leadership and rhetoric that conveys these directions are critical to a country that is undergoing “a fundamental change in [its] international orientation.” Because the Chinese leaders were inexperienced with intellectual property protection and had to constantly struggle with unfamiliar concepts and models introduced during the transitional period, the alignment of intellectual property reforms with the national modernization goals also allowed leaders to defend intellectual property reforms on more familiar terms.

In addition, because reformist leaders were constantly challenged by their more conservative counterparts, who were uncomfortable with the country’s rapid socio-economic changes and the social ills brought about by these changes, the rhetoric allowed the reformist leaders to deflate criticisms of their kowtowing to foreign interests, especially in times of considerable external pressure from the United States. Instead, the leaders could highlight the economic benefits of stronger intellectual property protection and justify intellectual property reforms as an important leapfrogging tool to enable China to catch up with its more advanced trading partners. The reformist leadership could also tie the reforms to the growing nationalist sentiments that longed for China’s regaining its rightful place following centuries of humiliation and semi-colonial rule.

Moreover, the fact that stronger intellectual property protection is unnecessary for attracting FDI does not mean that an increase in protection would not result in more economic development. In fact, it would, at least in certain parts of the country or in selected industrial sectors. The more profits a firm can obtain, the more likely it is to expand its business, and the greater is its investment in or trade with the country. This is particularly true with respect to a country that has a strong imitative capacity and an enormous growing market. Indeed, stronger intellectual property protection may also provide to foreign investors important signals of a favorable investment climate. As Claudio Frischtak noted, a country’s overall investment climate is often more influential on FDI decisions than the strength of intellectual property protection it offers. Likewise, Carsten Fink and Keith Maskus stated that “[a] poor country hoping to attract inward FDI would be better

advised to improve its overall investment climate and business infrastructure than to strengthen its patent regime sharply, an action that would have little effect on its own.” Thus, stronger intellectual property protection might result in more foreign investment from existing investors as well as those who otherwise would not invest in the country. While serious questions remain concerning whether stronger protection would result in net gains in economic welfare within the country, and whether such protection, on balance, would benefit the country, those questions do not negate the fact that stronger intellectual property protection would induce *some* economic development in the country.

In sum, even though stronger intellectual property protection is unnecessary for promoting economic development, the claim that stronger intellectual property protection would promote economic development provided the needed internal push for intellectual property reforms in the first decade and a half following the reopening of the Chinese market to foreign trade. In retrospect, that claim, to some extent, was similar to what psychologists have termed a “self-fulfilling prophecy.” Although people might not be able to prove conclusively whether stronger intellectual property protection would lead to greater economic development, they would accept a higher level of protection if they believed such a link existed. This higher level of protection, in turn, would result in greater economic development in certain parts of the country and in selected industrial sectors. As more local stakeholders stood to benefit from stronger protection, they would lobby for even stronger protection. Eventually, the belief in the benefits of stronger intellectual property protection would result in more economic development, regardless of whether the link existed in the first place. And the cycle would repeat itself.

2. Development of Local Stakeholders

China experienced major economic setbacks after Tiananmen in 1989 and the subsequent turbulent bilateral relationship with the United States and other Western countries. Fortunately, its economy quickly recovered following Deng Xiaoping’s famous “tour” of southern China in 1992. In March 1993, the National People’s Congress incorporated into the Chinese Constitution the concept of the socialist market economy, which contrasted powerfully with a command or centrally-planned economy. Four years later, the private sector was designated an important component of the changing economy, and “red capitalists” were invited to join the Chinese Communist Party at the Sixteenth Party Congress in 2001. Today, the Constitution stipulates that “[c]itizens’ lawful private property is inviolable,” and booming real estate markets appear in many major Chinese cities. Most recently, the National People’s Congress enacted a much-anticipated, yet controversial law to offer explicit protection to private property.

Accompanying this rapid economic development and growth was the emergence of local stakeholders who stood to benefit from stronger intellectual property protection. Consider, for example, the software industry, which has experienced tremendous growth since the mid-1990s. By 1997, the value of the software market had doubled from RMB 6.8 billion in 1995 to RMB 12.6 billion. The Chinese government also has been active in developing the local software industry, establishing bases in Liaoning, Hunan, Shandong, and Sichuan Provinces and in Beijing, Shanghai, and Zhuhai districts.

Today, the number of private software companies has greatly increased. Although state-owned enterprises once dominated the Chinese economy, a large number of employees of these enterprises are now entering the private sector—or, in the Chinese parlance, “plunging into the sea” (*xiàhǎi*). As the late Zheng Chengsi and Xue Hong, two leading commentators on Chinese intellectual property law, observed:

In recent years . . . many software engineers resigned from state enterprises or research institutes, taking software products (finished or unfinished) created during the course of employment with them, and joined private software companies or established their own companies. These private companies immediately produced and marketed the software products, and became competitors of state software enterprises.

In the late 1990s, intellectual property reforms were given a further push by the emerging consciousness of the need to develop a knowledge-based economy. As Lester Thurow noted, “[k]nowledge is the new basis for wealth. . . . In the past, when capitalists talked about their wealth, they were talking about their ownership of plant and equipment or natural resources. In the future when capitalists talk about their wealth, they will be talking about their control of knowledge.” Perhaps under the influence of the internet boom in other parts of the world, the phrase “knowledge economy” suddenly began to appear in major Chinese newspapers, such as *The People’s Daily* and *Guangming Daily*. Government officials used the phrase frequently in their presentations, while Chinese businesses quickly adopted words like “e-commerce” and “e-business” to enhance public image and stock market value.

Although the internet bust a few years later slowed online developments throughout the world, the drive for the development of a knowledge-based economy in China continued, and the Chinese internet population grew exponentially. In October 1997, there were only 299,000 computers connected to the internet and 620,000 internet users. Based on the most recent survey by the China Internet Network Information Center (CNNIC), there are now 58.4 million computers connected to the internet and 137 million internet users, second only to the United States.

As the use of the internet and new communications technologies continues to increase, Chinese policy makers have paid greater attention to issues concerning intellectual property rights in the digital environment. For example, the 2001 copyright law amendments addressed for the first time online copyright issues. In May 2006, the State Council promulgated the Regulations on the Protection of the Right of Communication Through Information Network. Most recently, China acceded to the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. These developments make a lot of sense. Greater certainty over the scope of rights protected on the internet is important to both local and foreign content providers and will greatly facilitate electronic commerce and broadband deployment.

The biggest push for intellectual property reforms in the 1990s was China's accession to the WTO. As China prepared to join the international trading body, it undertook a complete overhaul of its intellectual property system, amending its copyright, patent, and trademark laws. In addition, it introduced a large number of implementing regulations and administrative measures, such as those concerning the registration of computer software and those on the protection of topographies of integrated circuits. To help courts interpret these new laws and regulations, the Supreme People's Court also issued a number of judicial interpretations.

In November 2001, the WTO members finally approved the proposal to admit China to the international trading body during the Fourth Ministerial Conference in Doha, Qatar. After fifteen years of exhaustive negotiations, China formally became the 143rd member of the WTO on 11 December 2001. Although the accession process was complicated and involved many inextricable factors, it would not be far-fetched to argue that China might still remain outside the WTO had it not strengthened its protection of intellectual property rights. Indeed, some commentators considered the WTO membership a major impetus for China's recent improvements in intellectual property protection. As Professors Zheng and Xue explained:

In general, China's entry to the WTO significantly influenced the speed and scope of the development of the Chinese IP law system. It is interesting to note that IP rights reforms kept pace with Chinese WTO negotiations. When the negotiations encountered obstacles, the IP rights reform slowed down; when the negotiations reached agreements to promote the accession process, the IP rights reform accelerated noticeably. Since China has become a member of the WTO, Chinese IP law reform has also peaked.

To some extent, the economic benefits and reputational gains that were associated with China's accession to the WTO far exceeded the socio-economic costs incurred by increased intellectual property protection. By linking the two issues together, the Chinese began to understand that the stakes for the lack of intellectual property protection extended beyond the

intellectual property arena, covering almost every other area that implicates international trade, including agriculture, banking, electronics, insurance, professional services, securities, telecommunications, and textiles. While they might not be excited about introducing stronger intellectual property protection, they certainly were reluctant to give up WTO-related trade benefits that were linked to such protection.

Moreover, the moderate costs of stronger protection required by the TRIPS Agreement were incomparable to the high costs of other reforms required by the WTO accession. If the leaders and the Chinese public were willing to accept the costs of these other reforms, it was natural for them to accept the costs of TRIPS-related reforms. In fact, one could make a strong claim that China could easily recoup its losses in the intellectual property area by obtaining gains in such other trade areas as agriculture or textiles. Even critics of the overall economic benefits of China's accession had a tough time responding to the strong nationalistic sentiments that considered the WTO accession an important means for China to regain its past glory, not to mention the general excitement, rejuvenation, and other psychological benefits brought about by the accession.

Nevertheless, one needs to be cautious about how much one attributes the recent intellectual property reforms to China's WTO accession. Although commentators and policy makers have widely credited the recent changes in the Chinese intellectual property system to the WTO accession, it is important not to overlook the many internal developments within the country, including the Chinese leaders' changing attitude toward the rule of law, the emergence of private property rights and local stakeholders, the increasing concerns about ambiguities over relationships in state-owned enterprises, and the government leaders' active push for modernization. While the WTO accession may be important, China's *guóqíng*, or national conditions, continues to play a very important role in shaping intellectual property reforms in China.

3. Increasing Shift toward an Export-Driven Economy

Today, China is "the world's fourth largest economy and the third largest trading nation." Its factories "make 70 percent of the world's toys, 60 percent of its bicycles, half its shoes, and one-third of its luggage." China also "builds half of the world's microwave ovens, one-third of its television sets and air conditioners, a quarter of its washers, and one-fifth of its refrigerators." As the Chinese economy becomes increasingly driven by exports to other countries, intellectual property protection will become even more important than it was a decade ago. As Daniel Chow explained:

[g]lobal competitiveness in the modern age is directly linked to the level of technology in goods and services. Studies indicate that the higher the level of technology involved in goods and

services, the higher the growth rate of exports. . . . In the 1990s, China began to build a trade surplus with many nations based upon its low manufacturing costs. While China has been able to dominate in low-technology/labor-intensive industries, China realizes that to continue its growth in exports, it must move up the ladder into more technology-intensive goods and services. To do so, China must acquire access to advanced technology.

Indeed, "China, like most nations, encourages exports because export sales contribute to a favorable trade balance and can earn United States dollars or other forms of hard currency." While Chinese companies were content to serve as original equipment manufacturers (OEM) for foreign firms a decade ago, they have now moved into high-end technology markets, such as those for cars and regional jets, while seeking to maintain their competitive edge over low-cost products. Thus, some commentators and pundits suggested that China's export-driven economic growth is likely to lead to greater future confrontations with the United States. As Peter Navarro observed, "[a]ny complete understanding of the Coming China Wars must begin with this observation: China's hyper-rate of economic growth is export driven; and the ability of the Chinese to conquer one export market after another, often in blitzkrieg fashion, derives from their ability to set the so-called China Price."

Consider, for example, trademark protection, which is particularly important to an export-driven economy. The usual criticism of strong trademark protection in an emerging economy is that such protection would force local consumers to pay a premium for well-known foreign brands in exchange for no or very limited benefits. This is particularly true when local consumers are brand-conscious or when their purchase decisions are distorted by their obsession with social status, which they seek to gain by buying or owning more expensive foreign products. Because most of the branded products are made in China, local consumers are often asked to pay a higher price even though the quality of the products is no different from that of products made by local brand owners.

Moreover, by intentionally not offering trademark protection, countries may be able to take a free ride on the investment of foreign trademark holders, by earning profits as if they were selling genuine goods that bear the infringing marks. As foreign brand owners continue to advertise and promote their products, the local copycats would also benefit from the goodwill of the original products without incurring any advertising expenses. Such a competitive strategy, however, is ill-advised, especially for a country that has now become one of the world's largest exporters. As Professor Kitch explained, that strategy "will result in a parasitical business that will always be dependent on the willingness of the targeted countries to tolerate the infringing imports . . . [and that] will never have an established market position that can lay a foundation for the development of an internationally competitive business."

To be certain, local firms can ensure the marketability of their products in foreign countries by using non-infringing trademarks in foreign markets. Indeed, global firms have used that strategy to avoid infringement in selected markets. Nevertheless, such a strategy is costly, because it will not allow for the economies of scale commonly found in global production. That strategy also makes it difficult for local firms to learn how to establish market position by experimenting in the local market with brand development and trademark portfolio management. To some extent, one can see the local market as a “playground” for Chinese export businesses to acquire the needed skills to set up internationally competitive businesses.

A case in point is the leading Chinese personal computer manufacturer, Lenovo (*Liánxiǎng*). When the company sought to expand business overseas a few years ago, it found out that its English name “Legend” had already been registered and used as a trademark or trade name in many foreign countries. To avoid potential infringement, and to ensure that it could become an official sponsor of the 2008 Beijing Olympics, it had no choice but to develop the new “Lenovo” mark, which combined the first two letters of the “Legend” mark with the word “novo.” Interestingly, the “Lenovo” mark has now become famous as a result of the worldwide media coverage of its purchase of IBM’s personal computers division.

Lenovo, however, is not the only one. Compared to a decade ago, a number of Chinese companies have now achieved prominence in the international market, with their trademarks being recognized as well-known outside China. Examples of these famous local brands include Galanz (for microwave ovens), Haier (for household appliances), Huawei Technologies (for telecommunications equipment), Konka (for televisions), and TCL (for televisions). As China increases its exports of goods branded with globally recognized local trademarks, the importance of intellectual property protection to the country’s future economic development cannot be ignored.

From the standpoint of internal economic development in China, trademark protection is even more beneficial than the protection afforded by other forms of intellectual property. The development of globally recognized trademarks requires neither considerable technological expertise nor initial heavy capital investment. Although the global market has been dominated by brands developed by major corporations in developed countries, less developed countries and smaller enterprises have their fair share of famous trademarks that are recognized throughout the world, especially in the fields of beer and liquor production—Bacardi (for Bermuda rum), Corona (for Mexican beer) and Tsingtao (for Chinese beer) easily come to mind. In fact, according to Interbrand, “Bacardi is the world’s 75th most valuable global brand, and with a valuation in excess of \$3 billion, is worth comfortably more than the GDP of the country which produces it.”

From the standpoint of consumer welfare and economic self-sufficiency, it is also helpful to encourage local companies to catch up and

compete with famous Western brands by developing more attractive products and better brand positioning. Instead, this brand building strategy “fits [well] with the government’s strategy of consolidating strategic industries . . . to create national champions that can hold their own in global markets and . . . to restore its imperial glory.” Compared to foreign firms, local firms thus far have been very successful in the Chinese market. In this dynamic, yet immature market, “consumers are still experimenting, and brands come and go with great speed.” As a result, local firms have the opportunity to attain market position and develop the next promising brands.

The ability of local firms to improve consumer loyalty and establish market position has been further enhanced by the failure of foreign firms to understand or adjust to the local market conditions. Studies, for example, have “estimated that less than 10 percent of Chinese consumers have the level of disposable income that can afford to buy Western products.” Yet many foreign businesses ignore this financial reality and insist on focusing on the high-end market, perhaps due to benefits from economies of scope and scale in global production, or to the firms’ reluctance to lower the quality, and often the international reputation, of their products.

A case in point is the microwave market, which Galanz has overtaken recently. “[I]n 1993 only 1 per cent of Chinese consumers had microwaves. Consumption grew—but not in the pattern expected. By early 2000, nearly 90 per cent of the market was in cheaper models, with the Chinese company Galanz dominating.” Similarly, although Whirlpool and Kelon were competitors for the manufacture of washing machines, the local manufacturer quickly won the race. Today, “[a]fter losing more than \$100 million and shutting down most of its factories, Whirlpool . . . manufactures washing-machines for Guangdong Kelon”—a scenario that Whirlpool certainly did not foresee when it began its investment in China.

As China continues to increase exports and develop products under globally recognized trademarks, especially after the much-anticipated push around the 2008 Beijing Olympics (and again during the 2010 World Expo in Shanghai), the existence of effective intellectual property protection is likely to be of paramount importance. Significant improvement in trademark protection is therefore likely to be more important to China than similar improvement in the protection of other forms of intellectual property. In fact, the improved ability of Chinese businesses to develop globally famous brands may ultimately hold the key to converting those Chinese who are skeptical of intellectual property protection to global missionaries for greater intellectual property reforms.

III. IN SEARCH OF A CROSSOVER POINT

Although piracy and counterfeiting problems remain widespread in China, history suggests that intellectual property protection will vastly

improve when the overall benefits of such protection begin to outweigh its overall costs. After all, similar changes occurred in Japan in the 1970s and in Hong Kong, Singapore, South Korea, and Taiwan in the 1980s. At some point in the near future, the development of the Chinese economy will reach a crossover point at which the country will gradually abandon its infamous pirate past to become a champion of intellectual property protection. Similar transformation, indeed, happened in virtually every developed country, including the United States—a former haven for pirated works of Charles Dickens, Anthony Trollope, Gilbert and Sullivan, and many other British and French authors.

Notwithstanding the importance of this crossover point and the considerable historical evidence suggesting the potential for such a dramatic change, there is little, if any, empirical research concerning when this point will be reached. To provide a more accurate forecast of when China will reach this proverbial crossover point, and to better understand the socio-economic impact of the expansion of intellectual property protection in China, this Part highlights the country's regional and sectoral disparities, its lack of an adequate enabling environment for effective intellectual property protection, and its improvements in intellectual property protection at both the microscopic and qualitative levels.

A. Regional Disparities

The fact that China is not a homogeneous country has been stated repeatedly since Westerners first encountered China many centuries ago. China is large, complex, diverse, and “sometimes internally contradictory.” The Chinese speak different languages, enjoy different cuisines, grow up with different cultures, and subscribe to different historical and philosophical traditions. Conditions in Beijing are often very different from those in Guangzhou, and the intellectual property strategies that are effective in Shanghai are likely to fail in a village in western China. The trade patterns found in the coastal areas are also very different from those found in the inland areas.

To make things more complicated, during the rapid economic development in China in the past two decades, “some regions have been positively encouraged to become wealthy before others.” As Deng Xiaoping noted in the early 1980s in response to the country's growing inequality, “some people have to get rich first.” As a result, across the country there were enormous disparities in the levels of wealth and income, the purchasing power of local consumers, and the stages of economic and technological development.

The goods that are in high demand in the inland and rural areas are often very different from those in the major cities and the coastal areas. Because of these differing market conditions, local people in the less

developed parts of China understandably are less aware of the importance of intellectual property protection. Nor do they have much need for it. Those places are also likely to present greater structural problems for intellectual property enforcement, such as inefficient administration, low penalties, shortage of funds, local protectionism, and severe conflicts of interests. Meanwhile, the limited economic and technological developments in these areas have heavily constrained the local resources devoted to research and development efforts.

Sadly, despite all of these divergent regional conditions, intellectual property developments in China are often analyzed as if the country were homogeneous. While it is logical for policy analysts to swap analytical accuracy for practical convenience, the end result unsurprisingly presents only half of the picture—at times a very misleading, if not inaccurate, half. As the Chinese market has expanded further away from the major cities and the coastal areas, a more complete and deeper analysis of the country's regional economic developments is in order.

In June 2006, the Office of the United States Trade Representative altered its decades-old emphasis on country-based assessments in China. Instead of calling for only information about the entire country, for the first time the Office requested information concerning provincial developments. As the announcement in the *Federal Register* stated, “[t]he goal of this [special provincial] review is to spotlight strengths, weaknesses, and inconsistencies in and among specific jurisdictions.”

This new approach not only will promote the interests of U.S. rights holders, but also will help facilitate a better understanding of the divergent protection offered in different parts of the country. To some extent, China is what I have described as “a country of countries.” The economic conditions in different parts of this country are drastically different, and intellectual property protection and enforcement in each of these different parts are unlikely to be the same. Any overall nationwide assessment of intellectual property enforcement is likely to be misleading, if not meaningless.

Since the reopening of the Chinese market to foreign trade in the late 1970s, the country has become heavily decentralized, and problems of local protectionism are now widespread. Today, there are considerable differences between protection at the national, provincial, and local levels. As far as these differences are concerned, the Chinese proverb “the mountains are high, and the Emperor is far away” (*shān gāo huángdì yuǎn*) could not provide a more accurate description. Joseph Massey, the former Assistant United States Trade Representative for Japan and China, recounted the story of a senior USTR official's visit to the southern part of China following the signing of the 1992 memorandum of understanding. In Guangdong province, the official “was told by a senior provincial government leader that ‘Beijing’s agreement’ with the US was ‘mei you guanxi’ (irrelevant) in that southern province.”

Like the level of intellectual property protection, the level of innovation varies considerably among the different parts of China, adding another factor to this already complicated picture. For example, in 2000, “[r]esidents of Guangdong applied for more than 21,000 patents, while people in Hebei applied for only 3,848.” A regional breakdown of 1995 technology data supplied by the State Science and Technology Commission of China showed that while Beijing and Shanghai spent 2.6 and 1.4 per cent of the local GDP, Sichuan and Liaoning, the provinces that came next, spent only 0.6 per cent. Given the inter-relationship between intellectual property protection and economic development, the considerable regional disparities within the country will provide important clues to the future development of intellectual property protection in China.

When China joined the WTO, commentators were divided as to their views of the impact of its accession to intellectual property protection. The so-called China optimists suggested that intellectual property protection in China would improve, because the WTO accession would lead to better economic and living conditions, which in turn would result in greater demand for higher-priced genuine products and luxury goods. When people are poor, they have limited disposable income and are more willing to settle for fake Prada handbags, Gucci shoes, or low-quality video compact discs (VCDs). When they become richer, however, they may start looking for better and fancier legitimate products, especially when they can distinguish between genuine and fake products. Indeed, Ernst & Young recently forecasted that the Chinese luxury market “is expected to grow 20% . . . annually until 2008 and then 10% annually until 2015, when sales are expected to exceed US\$11.5 billion.” Thus, some optimists predicted that “pirates and counterfeiters will . . . gradually move into legitimate businesses[,] and the focus of counterfeiting and piracy will shift away from China to lesser developing countries, such as Vietnam.”

By contrast, the so-called China pessimists suggested that intellectual property protection would be likely to deteriorate in China, due to an influx of foreign products, the growing economic disparity within the country, and the increased desire for products that many people could not afford. As these pessimists claimed, the growing access of foreign products to the Chinese market and the increase in foreign investment and trade would enhance the economic conditions that gave rise to piracy and counterfeiting in the first place. Even worse, the reduced restrictions on export privileges and the elimination of state monopoly over trading rights—both results of China’s WTO commitments—would further allow pirates and counterfeiters to trade more aggressively with markets that have “a strong appetite for low-priced counterfeit goods,” such as Southeast Asia and Eastern Europe. The WTO accession might also create a disincentive for the country to carry out further immediate reforms, while providing China with “leverage against any future pressure to improve its piracy problem.” In the end, according to the

pessimists, the market for counterfeit exports would grow substantially. As Professor Chow summarized:

Recent estimates by the PRC State Council in 2001 indicate that the Chinese economy was flooded with counterfeits valued at \$19–24 billion and that counterfeiting accounted for eight percent of China's GDP. Multi-national companies in China indicate that fifteen to twenty percent of their brands in China are counterfeit, causing annual losses in the hundreds of millions of dollars. Counterfeits made in China are now exported to markets in all parts of the world; there are indications that exports from China will increase sharply for the foreseeable future. According to some accounts, China now accounts for eighty percent of all counterfeits in the world. Counterfeiting and commercial piracy are vital to the economy of many local municipalities and there are now millions of people in China involved in the counterfeiting industry.

By now, it is quite clear that regional disparities in China have undermined the forecasts of both the optimists and pessimists. While stronger intellectual property protection and the emergence of intellectual property-based industries in Beijing, Shanghai, Guangzhou, and other major cities and coastal regions have led to greater improvement of protection in the affected places, piracy and counterfeiting have not migrated out of the country. Instead, they have spread to other parts of the country, whose conditions are no different from those of the big cities a decade ago when intellectual property protection began to strengthen. In light of this migration, intellectual property problems are likely to remain in the country in the near future, even if some of these problems have migrated to countries in Southeast Asia. Thus, it is misleading to look for nationwide solutions to China's counterfeiting and piracy problems, and the USTR's new provincial review offers a refreshing change for collecting information about intellectual property developments in the country.

That approach is also attractive because it will help reduce the frustration of many Chinese, especially those in regions that have undertaken successful intellectual property reforms or made considerable sacrifices in the transition to a regime that is more respectful of intellectual property rights. While intellectual property protection continues to be a problem for foreign rights holders throughout China, one cannot deny the many important developments in the major cities and coastal areas in the last two decades. Following the introduction in the early 1990s of specialized courts filled with judges who possess intellectual property expertise, courts in the major cities have also been greatly improved. These courts now attract foreign rights holders to use the judicial process in lieu of the alternative approach of administrative enforcement. In 2002, for example, a total of 2,080 patent cases (an increase of 30.24 per cent over 2001) and 707 trademark cases (an increase of 46.68 per cent) were adjudicated.

Moreover, a continued insistence on the overall improvement in the country is unrealistic, ineffective, and counterproductive. By ignoring the important successes governments and businesses have made in major cities and coastal areas, such an insistence would create resentment among a large portion of the Chinese, which regard the repeated threats and demands “as American excesses.” Such insistence would also foster a misimpression among local Chinese leaders that, no matter what they do, the U.S. government and foreign businesses will never be satisfied. This misimpression will only erect further barriers to future cooperation, not to mention the lost opportunities for cultivating local allies.

Finally, regional disparities may affect decisions by foreign investors on which provinces to invest in, how much to invest, what forms the investment should take, and what type of technologies will be used in the facilities in a particular region. As regional and local governments fight hard to attract FDI, the picture we will see in China is likely to be more complicated in the near future than it is today. Because gains in one region may also result in losses in another, many local authorities have been particularly concerned about the unemployment and labor displacement problems created by the closure of pirate and counterfeit factories. While the costs of adjustment to job losses and labor displacement are often limited, due to the fact that “copying is typically done in footloose firms with limited capital requirements . . . [and] that former unauthorized factories are [often] licensed to produce by copyright holders because of their expertise,” some regions will certainly suffer more job losses and unemployment than others, due to a lack of skilled labor, education, technological infrastructure, and training facilities. The closures induced by intellectual property reforms therefore may sometimes shift production out of a region or a locality. If problems are likely to linger for a significant period of time, rights holders are likely to encounter severe local resistance and lax enforcement. The divergent protection may even lead to “interregional disputes over intellectual property infringement and enforcement.”

B. *Sectoral Disparities*

While regional disparities have greatly affected the analysis of intellectual property protection in China, the country’s divergent sectoral developments present challenges that are common for analyses of emerging, transition, and other less developed economies. Because industries develop at different paces, and because not all industrial sectors can simultaneously benefit from strong intellectual property protection, these countries are unlikely to have a coherent national intellectual property policy. Instead, the positions taken by national governments often vary depending on the impact of the proposed protection on their fast-growing industries.

For example, based on its existing developments, China is likely to prefer stronger protection of intellectual property rights in entertainment,

software, semiconductors, and selected areas of biotechnology to increased protection in areas concerning pharmaceuticals, chemicals, fertilizers, seeds, and foodstuffs. This rather “schizophrenic” position is understandable because China has fast-growing movie, software, semiconductor, and biotechnology industries. These industries are likely to obtain greater benefits if intellectual property protection is strengthened. Even when policy makers fail to recognize the need for stronger protection, they will provide the information needed to lobby for intellectual property reforms.

By contrast, in fields concerning pharmaceuticals, chemicals, fertilizers, seeds, and foodstuffs, China is unlikely to benefit from greater protection, due to its huge population, continued economic dependence on agriculture, the worries about public health issues, and concerns about the people’s overall well-being. Indeed, because stronger intellectual property protection in these areas is likely to drain the country’s limited economic resources, local leaders would hesitate to use their hard-earned political capital to introduce reforms that would provide benefits primarily for foreign rights holders and their export countries. The likelihood of success for the intellectual property reforms is also greatly reduced by the increased frustration among the local people who would bear the costs of increased protection and by the development of organized efforts against increased protection.

Politics aside, it makes good economic sense for policy makers to develop intellectual property protection that is in line with the country’s economic development. For example, economists have shown that the “length of protection for a given product should be inversely related to the elasticity of demand and the social rate of discount, and positively related to R&D returns.” Edwin Mansfield also found that “[t]here is often little correlation between one industry’s evaluation of the strength or weakness of intellectual property rights protection in a particular country and another industry’s evaluation of the same country.” As he pointed out in his study for the World Bank, intellectual property protection played a major role in the chemical, pharmaceutical, machinery, and electrical equipment industries, but has only marginal significance for the transportation equipment, metals, and food industries. Likewise, Keith Maskus found that “[i]nvestment in lower-technology goods and services, such as textiles and apparel, electronic assembly, distribution, and hotels, depends less on the strength of IPRs and relatively more on input costs and market opportunities. Investors with a product or technology that is costly to imitate may also pay little attention to local IPRs in their decision making.”

In recent works, Dan Burk and Mark Lemley have shown how policy levers in patent law have allowed courts to take account of the different types of innovation in different industries. As they noted, “there is no reason to assume that a unitary patent system will optimally encourage innovation in the wide range of diverse industries that it is expected to cover.” Likewise,

Michael Carroll and Glynn Lunney each highlighted the problem of uniformity cost in intellectual property law. As these commentators have recognized, the divergence of protection in different industrial sectors will allow a country to better tailor its intellectual property system to the needs of local industries. Such tailoring, in turn, would allow the country to take better advantage of its comparative and competitive advantages. After all, a country that has a strong pharmaceutical industry is more likely to benefit from an intellectual property system tailored to that industry's needs than one that is designed to support a strong software industry.

In addition, the problems an industry faces vary according to the nature of its products. In China, for example, "copying rates vary considerably across types of goods, with business applications software experiencing the highest rates and entertainment software next . . . [and] music recordings and motion pictures hav[ing] lower copying rates." Thus, at least for China, there may be more urgent needs to strengthen the protection for business software applications than that for music recordings and motion pictures.

Under the TRIPS Agreement, countries are prohibited from offering discriminatory protection in the patent area. Article 27 states specifically that "patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced." The TRIPS Agreement therefore prohibits countries from deciding whether they want to offer protection to the pharmaceutical industry without offering protection to the biotechnology industry. Put differently, countries cannot pick and choose; they have to offer protection to all industries as long as they remain members of the WTO.

Nevertheless, Article 27 allows all members, including those with great sectoral disparities, to carefully tailor the country's protection to local needs. Because the TRIPS Agreement covers only minimum standards of protection offered by each WTO member, it does not dictate the scope of protection beyond what the agreement requires. The TRIPS Agreement also does not require countries to offer protection of equal scope and strength to all industries. As long as countries do not discriminate between national and foreign rights holders and between the different types of industries, countries are free to introduce legislation that provides additional protection to benefit local industries.

In fact, the preamble of the TRIPS Agreement recognizes "the special needs of the least-developed country Members in respect of maximum flexibility in the domestic implementation of laws and regulations in order to enable them to create a sound and viable technological base." Article 8 of the agreement states that "Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of

vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement.” Moreover, as Professor Heald pointed out:

Nothing in the TRIPS Agreement prevents other countries from similarly favoring local creators of sub-patentable innovation by protecting their work. Although a developing country is unlikely to have numerous strong sectors in its economy, it may have some modest innovators worthy of special protection from competition. For example, if a country has a strong textile industry that occasionally improves its dyeing and weaving techniques, protection of new (but obvious) methods should tend to favor local firms, even if protection is not discriminatory on its face.

For example, commentators have described the benefits of offering *sui generis* or utility model protection, which offers protection of limited duration to minor or incremental innovations that involve low levels of novelty. “[S]tudies in Brazil and the Philippines suggested that effective systems of utility models can promote innovation. Another study demonstrated econometrically that Japan’s system of utility models and widespread licensing of new technologies contributed positively and significantly to its postwar rise in productivity.”

In sum, if we are to fully understand the relationship between intellectual property protection and economic development, we need to pay attention to the different forms of intellectual property and the varying scope of each form of protection. It would be misleading to explore the impact of intellectual property protection as if all of these various forms of protection are based on identical models, offer protection of similar scope and characteristics, and incur similar social costs. With increasing *sui generis* protection for new subject matters and technologies, a clear understanding of the impact on each industrial sector becomes even more important.

Moreover, in China, the protection for different forms of intellectual property varies according to the *xìtǒng*, or functional bureaucratic system, that governs each form of protection. As a result, the philosophies behind such protection and the support it receives from related industrial sectors may affect the level of protection in a particular area. As Andrew Mertha pointed out in his book, *The Politics of Piracy*, a better understanding of the different *xìtǒng* will enable one to understand better the effectiveness of the protection involved, and the potential resistance confronting the push for greater protection in the area. In fact, because of the different degree of effectiveness of each form of protection, rights holders and their attorneys often have to plan which form of protection they want to use to protect intellectual assets. As Keith Maskus, Sean Dougherty, and Andrew Mertha recounted:

One person involved in enforcement claimed that although 90 percent of his investigations involve trademark allegations and 10 percent involve patents, up to 60 percent of these cases could be patent violations. However, enforcement is easier if the case is pursued as a trademark violation. One reason for this bias seems to be that, to date, Chinese authorities have been reluctant to entertain patent cases, evidently in the belief that patent infringement embodies technology transfer and helps meet national technology development goals.

The differences inherent in each *xitǒng* may further affect the pace of reforms for each form of intellectual property. Out of the three dominant forms of intellectual property, trademarks present the least problems for legal reforms. By contrast, copyrights encounter the greatest challenge because of their association with propaganda, thought work, and information control. Patents are somewhat in between, due to their considerable impact on technology transfer and the potential for slowing down the country's modernization efforts by draining foreign exchange reserves in the form of royalty and license fee payments. As Professor Mertha explained, "[t]he copyright bureaucracy . . . is embedded within a *xitong* that concerns itself with cultural, ideological, and value-laden media and is therefore involved in a more politically sensitive environment, even if technical copyright issues themselves are no more or less 'political' than those pertaining to patents or trademarks."

Thus, it is no surprise that trademarks have been protected even during the Cultural Revolution. When China reopened its market for foreign trade in the late 1970s, the trademark law was also the first to be (re)introduced. Meanwhile, the patent law was filled with compromises, while the copyright law was the last to be enacted. Had there not been continuous pressure from the U.S. government and the intention to rebuild international ties after Tiananmen, the introduction of the copyright law might not even have taken place in 1990.

In sum, like regional disparities, sectoral disparities greatly affect the analysis of the relationship between intellectual property protection and economic development. At times, sectoral disparities are the partial result of regional disparities. Taken together, regional and sectoral disparities not only affect the types of industry that are fast-growing in the region, but also the types of pirated and counterfeit products that will become available there. As one commentator suggested:

According to the China United Intellectual Property Protection Centre (CUIPPC), a private business that has been representing Western companies like Coca-Cola, Microsoft and Kodak in China since 1994, there are even regional centres of counterfeiting expertise: imagine Silicon Valley for fakes. So if you are manufacturing in Chaosan, in Guangdong Province, your specialty is likely to be electronics, cigarettes,

pharmaceuticals or CDs. For car parts, it's more likely you'll be in Wenzhou City or the Pearl River Delta. In Yuxiao County, the expertise is in manufacturing fake cigarettes; in Jintan City, it's pesticides.

C. *Inadequate Enabling Environment*

With the expansion of intellectual property protection and the growing interdependence between different bodies of law, a focus on intellectual property laws and enforcement alone often does not fully account for the full extent of such protection. Instead, one may need to understand better the political, economic, and judicial environments that enable effective intellectual property enforcement—something I describe here as the enabling environment for effective intellectual property protection.

So far, commentators have underscored the importance of these complementary factors. Edwin Mansfield noted that “one should recognize that a country's system of intellectual property protection is inextricably bound up with its entire legal and social system and its attitudes toward private property; it involves much more than the passage of a patent or copyright law.” Robert Sherwood reminded us that “some things cannot be legislated.” As he put it bluntly, “until judicial systems in developing and transition countries are upgraded, it will matter little what intellectual property laws and treaties provide.” Paul Heald stated that “a rational strategy for developing countries must not only consider compliance options, but must also account for institutional competency—legislative, judicial, executive, and diplomatic—in order to make the most of available options.” As Maskus, Dougherty, and Mertha summarized in the Chinese context:

Upgrading protection for IPRs alone is a necessary but not sufficient condition for th[e] purpose [of maximizing the competitive gains from additional innovation and technology acquisition over time, with particular emphasis on raising innovative activity by domestic entrepreneurs and enterprises]. Rather, the system needs to be strengthened within a comprehensive and coherent set of policy initiatives that optimize the effectiveness of IPRs. Among such initiatives are further structural reform of enterprises, trade and investment liberalization, promotion of financial and innovation systems to commercialize new technologies, expansion of educational opportunities to build human capital for absorbing and developing technology, and specification of rules for maintaining effective competition in Chinese markets.

As they noted, the effectiveness of intellectual property protection in expanding economic growth and promoting technology development not only depend heavily on economic circumstances and the existence of a sufficiently developed technological base and infrastructure, but also on such

complementary factors as “further structural reform to increase entrepreneurship and flexibility of enterprises; expanded liberalization of restrictions on trade, investment, and technology agreements; and additional steps to ensure competition in domestic markets among firms and across regions.”

In China, the oft-cited barriers to intellectual property reforms include “the difficulties in monitoring a large territory, in collecting evidence of infringement, and in collecting judgments, widespread corruption, abuse by government officials, different values placed on intellectual property infringement, the indistinguishability between public and private entities, local protectionism, and the decentralization of government.” Ironically yet crucially, none of these barriers is directly covered by the TRIPS Agreement or by the many international intellectual property treaties China has ratified.

As I pointed out elsewhere, one of the major defects of the United States’s potential WTO complaint against China over its lack of general enforcement of intellectual property rights is the inability by the United States to show that China’s enforcement in the intellectual property area is worse than its enforcement in other areas. Article 41(5) of the TRIPS Agreement stated specifically that a WTO member state is not required to devote more resources to intellectual property enforcement than to other areas of law enforcement. If China were able to show that their enforcement problems with piracy and counterfeiting were no more excessive than their problems with, say, tax collection (which are very serious), China would be likely to prevail. After all, it is hard to imagine any country putting intellectual property protection ahead of tax collection. Nor does the WTO require it to do so.

Finally, it is important not to ignore the additional protection that is offered outside the intellectual property regime. To protect their intellectual assets, rights holders have increasingly relied on mass-market contracts, such as shrinkwrap or click-wrap licenses. They have also used alternative technological protection measures, such as encryption technology for protecting copyrighted works in digital media and genetic use restriction technologies (GURTs) for protecting seeds. Whether this additional protection will help protect the important intellectual assets will ultimately depend on the additional legal protection in the contract area, or in related areas that govern the circumvention of technological protection mechanisms.

In sum, one has to look beyond the intellectual property system to examine the various complementary factors that are needed to build an enabling environment for effective intellectual property protection. Although the addition of these factors will complicate the analysis and make it more difficult to clearly identify the determinants for economic development, such addition will also provide a more complete analysis that will assess intellectual property enforcement more accurately and realistically.

D. *Micro-level, Quantitative Improvements*

Bilateral intellectual property discussions are inevitably state-centered. As a result, documents emanating from these discussions tend to overemphasize developments at the macroscopic level, rather than the microscopic level. In February 2006, for example, the USTR completed a “top-to-bottom review” of U.S.–China trade relations. Although the importance of undertaking this comprehensive study cannot be ignored, the top-down approach used in conducting the study is somewhat misguided.

First, studies that are conducted using the top-down approach often contain quantitative analyses that rely on the use of basic indicators as proxies for the effectiveness of the country’s intellectual property protection. For example, Section 301 submissions or similar reports are filled with information about which laws have been enacted, which new taskforces have been established, how many patents or trademarks have been applied or granted, how many intellectual property cases have been brought or tried, how cases have been disposed of, and how many criminal prosecutions the local authorities have pursued or completed. Likewise, reports supplied by the Chinese authorities are filled with similar, and often impressive, statistics as well as “war stories” about the efforts these authorities have launched or completed to crack down on piracy and counterfeiting.

To be certain, proxy measures are sometimes needed, and basic indicators can be selected in a way that will tell not only “on the books” stories, but also how written laws have been translated into practice. In fact, these statistics may provide important and useful information about recent intellectual property reforms in China. Nevertheless, just like indices used for ranking intellectual property protection in empirical surveys, the basic indicators are unlikely to “fully capture the complexities and multiple dimensions of modern IPR systems.” An overemphasis on quantitative analysis therefore will lead researchers to overlook the important developments that can be revealed only through qualitative or case-by-case analyses.

Indeed, as seasoned China observers have pointed out, many of the most interesting developments in China were not taking place at the macroscopic level, but rather at the microscopic level. For example, commentators have suggested how village and township elections have provided hope for China’s democratic reforms, while the proliferation of bulletin boards, chatrooms, and web logs has resulted in an expansion of free expression and political discourse in the country. One might even remember David Sheff’s insightful observation in his book about the transformation of mass communication in China, in which the ringing mobile phone in the backroom of a Chinese restaurant belonged to a waiter, rather than the businesspeople inside. Had researchers focused solely on top-down

developments or the statistics supplied by governments or industry groups, they would have missed these important developments.

Like other reforms in China, the most interesting developments in the intellectual property area are now taking place at the microscopic and qualitative levels. For example, many of today's copyright- or patent-based piracy cases are no longer disputes about verbatim copies of protected goods, although such disputes still exist and piracy of music, movies, and computer software remains rampant in the country. Many of these cases also do not involve underground or fly-by-night operations, but rather legitimate businesses that either are ignorant of intellectual property laws or are testing the limits of the law. This line of disputes include those concerning the unauthorized translation or adaptation of copyrighted works, or the infringing use of patented processes in the manufacture of competing finished products.

Moreover, although many of today's intellectual property disputes may sound like traditional piracy stories, they have more complex storylines. Elsewhere, I have discussed how the recent invalidation of Pfizer's patent on Viagra by the State Intellectual Property Office, which was subsequently overturned by a Chinese court, has shown a promising development in which local pharmaceutical manufacturers took the legal route to challenge the patent owned by a major foreign company. In the past, local manufacturers were likely to ignore the law and rely on counterfeits to compete.

Similarly, the celebrated dispute between General Motors and Chery Automobile Company, in which General Motors claimed that the Shanghai-based carmaker copied its Chevy Spark in designing the Chery QQ, was far from a typical intellectual property dispute. That dispute included complicated legal issues raised by the territorial nature of intellectual property rights, General Motors's lack of patents in China, and the complexity created by General Motors's acquisition of Korea-based Daewoo Motor. Had the dispute been a simple infringement case, one has to wonder why it eventually took three years and required the "assistance" of the Chinese government to reach an out-of-court settlement to end the dispute.

In addition to the nature of the disputes, one can explore whether and to what extent the consciousness of intellectual property rights has grown among the Chinese populace. One of the more promising copyright-related developments is the growth of private collective copyright administration bodies. The first of these bodies, the Music Copyright Society of China, was established on 17 December 1992. Today, it represents more than 2,500 "local stakeholders," including Chinese singers, composers, music adaptors, heirs, music publishers and recording companies of Chinese nationality. Meanwhile, a few other collective bodies have been established since 2000. With the recognition of these private administration bodies in the recently revised copyright law, their number is likely to grow substantially. In fact, one commentator has recently suggested the possibility of the institution of a private levy system in light of the country's changing conditions.

Finally, it is important to analyze the impact of changes in the intellectual property system on consumers, in both tangible and intangible forms. Are consumers getting products of better quality and higher reliability? Are they getting products that are more suitable or desirable? Do they have more confidence in shopping in the open market? Do they have more product choices? Do they respect others' legal rights more than they used to? To some extent, finding the answers to some of these questions is just as difficult as examining whether Mark Twain was right that stronger copyright protection in nineteenth-century United States would have prevented young Americans from being polluted by foreign novels that "fill[ed] the imagination with an unhealthy fascination with foreign life, with its dukes and earls and kings, its fuss and feathers, its graceful immoralities, its sugar-coated injustices and oppressions." Nevertheless, a better account of the many intangible improvements in intellectual property protection is likely to enhance the quality of the overall economic analysis.

In the near future, the type of intellectual property infringement in China is likely to be as important as the amount and frequency of the infringement. Thus, the use of the top-down approach and the reliance on basic indicators are likely to be of limited use. Instead of questioning how often infringement takes place, one also has to examine what type of infringement has occurred. Because policy compromises are needed to respond to regional and sectoral variations within the country, region-based, sector-specific, micro-level, qualitative analyses are likely to be more illuminating than those focusing on nationwide, cross-sector, macro-level, quantitative developments. In fact, if researchers continue to use a top-down, nation-based approach, they will not be able to fully account for the progress China has made in recent intellectual property reforms.

CONCLUSION

Many commentators have considered China the proverbial exception to the causal relationship between the strength of intellectual property protection and economic development. This paper rejects that position and contends that China illustrates rather well the ambiguity of the relationship and the complex interplay of the different location advantages that affect private investment decisions. Whether one can develop a complete and accurate picture of this relationship will depend on whether one understands and properly analyses the many different factors that affect those decisions. Compared to other countries, the study of this relationship in China has been made particularly difficult by the uneven development and continuous economic transition.

Nevertheless, a better understanding of this relationship will help provide a more accurate forecast of when China will reach a crossover point at which it will find stronger intellectual property protection in its self-interests. Interestingly, despite the urgency of finding when China will reach

this crossover point and the importance of fully understanding the socio-economic impact of stronger intellectual property protection, the relationship between intellectual property and economic development has been largely under-explored by commentators—Chinese commentators in particular. As Maskus, Dougherty, and Mertha observed:

University scholarship in China (and in other countries) in IPRs is overwhelmingly addressed to legal issues. Many scholars are actively involved in assessing shortcomings in the law and in drafting revisions, and they also participate in training new intellectual property lawyers. Few economists study the processes of technical change in China and how they are affected by market structure, competition, and exposure to foreign technologies and investment. Fewer still examine the relationship between IPRs, technical development, and growth. Accordingly, economists in China either remain unaware of IPR issues or are skeptical about the potential for IPRs to increase technological advance and business development.

Hopefully, this paper will convince policy makers that intellectual property protection should be measured not only in legal terms, but also in socio-economic ones. Although intellectual property protection may not be a prerequisite for economic development and growth, it is an integral and essential part of a complex innovation system that serves as a catalyst for economic development. The sooner Chinese policy makers understand the dynamics of this complex innovation system, the quicker they can harness the system to promote the country's economic development.

ABOUT THE CENTER

The Intellectual Property Law Center at Drake University Law School was founded in fall 2007 to promote global, interdisciplinary understanding of intellectual property law and policy. The Center was established with the generous support of a \$1.5 million gift from Wayne ('72) and Donna Kern of Dallas, Texas, which endowed the Kern Family Chair in Intellectual Property Law, and a \$750,000 leadership commitment award from Pioneer Hi-Bred International Inc., a subsidiary of DuPont.

This new, dynamic Center offers an innovative curriculum, providing students with a solid foundation in both the theoretical and practical aspects of intellectual property law. The Center also features an annual summer institute that brings together judges, policymakers, industry leaders, attorneys, and academics to explore cutting-edge issues at the intersection of intellectual property, biotechnology, and agricultural sciences. In addition, the Intellectual Property Law Center serves as an international research hub, fostering partnerships with leading research institutions from around the world. Every year, the Center sponsors groundbreaking symposia and distinguished lectures; hosts eminent speakers and internationally recognized experts; and develops international research and outreach programs.

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