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Enforcement, Economics and Estimates

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☞ China; Developing countries; Economics and law; Enforcement; Intellectual property

Introduction

The debate on intellectual property enforcement has been highly contentious at both the international and domestic levels. At the international level, the increasing focus on enforcement standards has led to the negotiation of the highly unpopular Anti-Counterfeiting Trade Agreement (ACTA).¹ A spirited debate on these standards has also slowly emerged in such international fora as the WIPO Advisory Committee on Enforcement and the TRIPS Council of the World Trade Organization (WTO). Despite these ongoing developments, the positions of developed and less developed countries remain far apart.

At the domestic level, countries, especially those in the developed world, have explored the need to introduce greater criminal enforcement and border control to combat piracy and counterfeiting. For almost a decade, copyright holders have explored, with very limited success, legislative and technological solutions to challenges posed by the internet and new communications technologies.² The recent push for the establishment of a graduated response system in France, New Zealand, South Korea, Taiwan, the United Kingdom and other parts of the world provides a timely reminder of the serious online file-sharing problems in developed countries.³

Meanwhile, less developed countries—including both developing and least developed countries—are concerned about the increased bilateral, regional and multilateral demands for tougher intellectual property enforcement. Owing to institutional deficiencies and a lack of resources and expertise, many of these countries have yet to provide effective protection and enforcement. Significant resource constraints have also forced them to make very difficult allocation choices. Because intellectual property enforcement will take away scarce resources from other important public programmes, the enforcement debate to date has been as much about politics and morality as it is about economics.

Thus far, few policymakers, commentators or academics have denied the importance of intellectual property protection and enforcement. If the intellectual property system is to provide right holders with meaningful protection, the rights recognised in the system need to be effectively enforced. What experts continue to disagree about, however, is the type of enforcement standards a country needs to adopt and how much priority it should give to implementing those standards.

* Copyright © 2010 Peter K. Yu. An earlier version of this article was presented at the 2010 International Law Weekend in New York. Part of the article draws on the author's testimony in the hearing before the US International Trade Commission on "China: Intellectual Property Infringement, Indigenous Innovation Policies, and Frameworks for Measuring the Effects on the U.S. Economy" on June 15, 2010. The author is grateful to Rebecca Goodrich, Cory McAnelly and Megan Snyder for excellent research and editorial assistance.

¹ Anti-Counterfeiting Trade Agreement (Text Subject to Legal Review, November 15, 2010), available at http://www.ustr.gov/webfm_send/2379 [Accessed November 18, 2010]; Peter K. Yu, "Six Secret (and Now Open) Fears of ACTA" (2011) 64 SMU L. Rev. 81.

² Peter K. Yu, "The Escalating Copyright Wars" (2004) 32 Hofstra L. Rev. 907; Peter K. Yu, "P2P and the Future of Private Copying" (2005) 76 U. Colo. L. Rev. 653.

³ Annemarie Bridy, "Graduated Response and the Turn to Private Ordering in Online Copyright Enforcement" (2010) 89 Or. L. Rev. 81; Alain Strowel, "Internet Piracy as a Wake-up Call for Copyright Law Makers—Is the 'Graduated Response' a Good Reply?" (2009) 1 W.I.P.O.J. 75; Peter K. Yu, "The Graduated Response" (2010) 62 Fla. L. Rev. 1373.

In the inaugural issue of *The WIPO Journal*, we brought together a group of leading intellectual property experts to examine issues on the cutting edge of the intellectual property debate. This special issue continues this tradition by assembling some of today's leading thinkers on the economics of intellectual property. It addresses a wide variety of topics, which range from patents to open source software and from parallel imports to climate change.

This introductory article focuses on intellectual property enforcement, a topic that is of great importance to both developed and less developed countries. It begins by refuting the simple, and often politically motivated, claim that many countries fail to provide effective intellectual property enforcement by virtue of their lack of political will. Drawing on the latest economic literature, this article shows that high enforcement standards come with a hefty price tag and difficult trade-offs. The article then outlines the challenges in measuring the cross-border economic impact of piracy and counterfeiting. As an illustration, the article discusses the ongoing effort by the US International Trade Commission (ITC) to measure the impact of intellectual property infringement in China on the US economy. The article concludes with an analysis of the various metrics that can be or have been used to develop cross-country comparative analyses. It highlights the continuous disagreement among nations over what metrics should be used. It also suggests new areas researchers can explore in their continuous search for a set of mutually satisfactory metrics that advance the international intellectual property enforcement debate.

Enforcement

One of the central disagreements between developed and less developed countries over intellectual property enforcement concerns its hefty price tag. Strong enforcement requires a substantial investment of resources, the development of supporting institutional infrastructures and the introduction of complementary policy reforms. Although the challenge to obtaining resources to strengthen intellectual property enforcement exists in both developed and less developed countries, this challenge is particularly acute in less developed countries—especially those that are struggling just to meet basic needs, such as the provision of clean drinking water, food, shelter, electricity, schools and basic health care.

Sadly, despite the widely documented hardships of these countries, policymakers and trade groups continue to blindly and unrealistically attribute a country's failure to enforce intellectual property rights to a lack of political will on the part of local authorities.⁴ While the causes of piracy and counterfeiting are multi-faceted and *some* self-interested government actors⁵ indeed have resisted intellectual property reforms, it is rather ill advised and unfair for developed countries and their supportive industries to continue to ignore the high costs of enforcement.

Although commentators have explored ways to build a low-cost intellectual property system⁶—through user fees, outsourcing or streamlined operation—very few have discussed how a country can develop a low-cost but effective intellectual property enforcement regime.⁷ In fact, developed country governments (such as those in the European Union and the United States) and international intergovernmental and

⁴ Peter K. Yu, "Three Questions That Will Make You Rethink the US-China Intellectual Property Debate" (2008) 7 J. Marshall Rev. Intell. Prop. L. 412.

⁵ These actors can come from different parts of the government. In China, for example, they can come from the national, provincial or local governments. Given the heavy decentralization and the ongoing turf wars among the various bureaucracies, it would be misleading to assume that the Chinese government is a monolithic actor.

⁶ e.g. Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy* (London: Commission on Intellectual Property Rights, 2002), pp.145–146; Robert M. Sherwood, *Intellectual Property and Economic Development* (Boulder, CO: Westview Press, 1990), pp.181–185; Sean A. Pager, "Patents on a Shoestring: Making Patent Protection Work for Developing Countries" (2007) 23 Ga. St. U. L. Rev. 755.

⁷ Carsten Fink, "Enforcing Intellectual Property Rights: An Economic Perspective" in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries* (Geneva: ICTSD Programme on IPRs and Sustainable Development, 2009), p.19; Mark Liang, "A Three-Pronged Approach: How the United States Can Use WTO Disclosure Requirements to Curb Intellectual Property Infringement in China" (2010) 11 Chi. J. Int'l L. 285, 300–302. Carsten Fink, for example, called on developed countries or intellectual property right holders to bear the costs of intellectual property enforcement in less developed countries—for example, by introducing "a special levy upon registration and renewal of IP titles".

nongovernmental organisations (such as WIPO, UNCTAD, UNDP, the World Bank and ICTSD) have provided a considerable amount of resources to fund capacity building and technical assistance programmes.⁸ Commentators have also underscored the importance for developed countries and right holders to provide support or subsidies to strengthen intellectual property enforcement in the less developed world.⁹ In fact, article 67 of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) specifically requires developed country members of the WTO to provide “technical and financial cooperation in favour of developing and least-developed country Members”.

Of primary concern to less developed countries are the administrative costs of a strong intellectual property enforcement regime: the costs incurred in building new institutional infrastructures; restructuring existing agencies; developing specialised expertise through training or other means; and staffing courts, police forces, customs offices and prisons.¹⁰ While in the past private right holders funded enforcement costs through civil litigation, the growing demands for criminalisation and public enforcement have led to a gradual shift of responsibility from private right holders to national governments.¹¹

More problematically, such a shift has brought with it significant risks that may ultimately backfire on a country’s goal to use intellectual property protection to attract foreign direct investment (FDI). For instance, strengthening border control requires the development of specialised expertise and sophistication on the part of customs authorities. If these authorities fail to develop the requisite expertise and sophistication, their inconsistent—and at times wrongful—application of new, and usually tougher, border measures may lead to uncertainty and other concerns that eventually frighten away foreign investors.¹² Even worse, the irregularities in applying these measures may become the subject of complaints firms file with their governments. These complaints, in turn, may lead to greater pressure from foreign governments—the United States’ notorious s.301 process easily comes to mind.¹³ In the end, what started as a country’s means to attract FDI and promote economic development ends up being a heavy cost burden on this already resource-deficient country.

Of bigger concern among human rights groups, consumer advocates and other non-governmental organisations are the high opportunity costs incurred by strengthened intellectual property enforcement. Given the limited resources in many less developed countries, an increase in resources in the enforcement area inevitably will lead to the withdrawal of resources from other competing, and at times more important, public needs. These public needs include, among others, purification of water, generation of power, improvement of public health, reduction of child mortality, provision of education, promotion of public

⁸ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy*, 2002, pp.149–151; Christopher May, *The World Intellectual Property Organization: Resurgence and the Development Agenda* (London: Routledge, 2007), pp.61–66; Carlos M. Correa, “The Push for Stronger Enforcement Rules: Implications for Developing Countries” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.35.

⁹ Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.19; Timothy P. Trainer, “Intellectual Property Enforcement: A Reality Gap (Insufficient Assistance, Ineffective Implementation)?” (2008) 8 *J. Marshall Rev. Intell. Prop. L.* 47, 74.

¹⁰ Timothy P. Trainer and Vicki E. Allums, *Protecting Intellectual Property Rights Across Borders* (St. Paul: Thomson West, 2008), pp.705–706; Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.15.

¹¹ Correa, “The Push for Stronger Enforcement Rules” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.42; Li Xuan, “Ten General Misconceptions about the Enforcement of Intellectual Property Rights” in Li Xuan and Carlos M. Correa (eds), *Intellectual Property Enforcement: International Perspectives* (Cheltenham, UK: Edward Elgar Publishing, 2009), pp.28–31; Henning Grosse Ruse-Khan, “Re-delineation of the Role of Stakeholders: IP Enforcement Beyond Exclusive Rights” in *Intellectual Property Enforcement*, 2009, pp.51–52; Susan K. Sell, *The Global IP Upward Ratchet, Anti-Counterfeiting and Piracy Enforcement Efforts: The State of Play* (Geneva: IQsensato, 2008), p.9.

¹² Ruse-Khan, “Re-delineation of the Role of Stakeholders” in *Intellectual Property Enforcement*, 2009, p.52.

¹³ Yu, “Six Secret (and Now Open) Fears of ACTA” (2011) 64 *SMU L. Rev.* (forthcoming).

security, building of basic infrastructure, reduction of violent crimes, relief of poverty, elimination of hunger, promotion of gender equality, protection of the environment and response to terrorism, illegal arms sales, human and drug trafficking, illegal immigration and corruption.¹⁴

The competition between intellectual property enforcement and these public needs is particularly disturbing, as it comes at a time “when global investment in areas of poverty, hunger, health and education is less than half of what is needed to reach the Millennium Development Goals”.¹⁵ The strengthening of intellectual property enforcement, therefore, not only may have an adverse impact on individual countries, but it may also undermine the ability of the global community to achieve these development goals.

The concerns of less developed countries, indeed, can be traced back to the negotiation of the TRIPS Agreement in the mid-1980s and the early 1990s, when these countries registered concerns about the resources needed to set up specialised intellectual property courts or strengthen intellectual property enforcement. At that time, less developed countries were so concerned that they specifically demanded the inclusion of art.41.5 in the TRIPS Agreement.¹⁶ This provision states explicitly that a WTO Member State is not required to devote more resources to intellectual property enforcement than to other areas of law enforcement. Even today, less developed countries continue to insist that art.41.5 is a key concession they won through the TRIPS negotiation process.¹⁷

In addition to administrative and opportunity costs, economists and commentators have identified many other costs, such as adjustment costs due to labour displacement, social costs associated with monopoly pricing, higher imitation and innovation costs, potential costs resulting from the abuse of intellectual property rights, and costs of litigation and litigation error.¹⁸ Although these costs are alarming, how high these costs will be ultimately depends on whether the intellectual property system is appropriately designed.

While an intellectual property system that is tailored to the needs of a rich country is unlikely to work well for a least developed country, there are still many possible ways to design an appropriate intellectual property system for an economically poor and technologically backward country. In fact, the less the system is based on a super-size-fits-all template—such as the one enshrined in the TRIPS Agreement or the recent bilateral and regional trade agreements—the more likely the system is to function well in a resource-deficient environment.

While discussions of capacity and resource constraints often focus on less developed countries, these constraints affect developed countries as well. In the United States, for example, Tim Trainer, the former president of the International Anticounterfeiting Coalition, lamented how “the staff dedicated solely to IPR enforcement [in the US Government] could be counted on two hands”.¹⁹ Likewise, Chris Israel, the former US International IPR Enforcement Coordinator, testified before the US-China Economic and Security Review Commission that “[w]ith finite resources and seemingly infinite concerns, how [the

¹⁴ e.g. Frederick M. Abbott and Carlos M. Correa, *World Trade Organization Accession Agreements: Intellectual Property Issues* (Geneva: Quaker United Nations Office, 2007), p.31; Ermias Tekeste Biadgleng and Viviana Muñoz Tellez, *The Changing Structure and Governance of Intellectual Property Enforcement* (Geneva: South Center, 2008), p.4; Correa, “The Push for Stronger Enforcement Rules” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.43; Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, pp.2, 16; Gregor Urbas, “Criminal Enforcement of Intellectual Property Rights: Interaction Between Public Authorities and Private Interests” in Christopher Heath and Anselm Kampermann Sanders (eds), *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement and Overprotection* (Oxford: Hart Publishing, 2005), p.321; Xue Hong, “Enforcement for Development: Why Not an Agenda for the Developing World” in *Intellectual Property Enforcement*, 2009, p.143; IP Justice, “ACTA’s Misguided Effort to Increase Govt Spying and Ratchet-Up IPR Enforcement at Public Expense: IP Justice Comments to U.S.T.R. on the Proposed Anti-Counterfeiting Trade Agreement (ACTA)”, available at <http://ipjustice.org/wp/2008/03/21/acta-ipj-comments-ustr-2008march/> [Accessed November 8, 2010].

¹⁵ Li, “Ten General Misconceptions about the Enforcement of Intellectual Property Rights” in *Intellectual Property Enforcement*, 2009, p.29.

¹⁶ Carlos M. Correa, *Trade Related Aspects of Intellectual Property Rights: A Commentary on the TRIPS Agreement* (Oxford: Oxford University Press, 2007), p.417; UNCTAD-ICTSD, *Resource Book on TRIPS and Development* (Cambridge: Cambridge University Press, 2005), p.585.

¹⁷ e.g. *China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, Report of the Panel, January 26, 2009, WT/DS362/R, annex B-4, para.33.

¹⁸ Li, “Ten General Misconceptions about the Enforcement of Intellectual Property Rights” in *Intellectual Property Enforcement*, 2009, p.29; Keith E. Maskus, Sean M. Dougherty and Andrew Mertha, “Intellectual Property Rights and Economic Development in China” in Carsten Fink and Keith E. Maskus (eds), *Intellectual Property and Development: Lessons from Recent Economic Research* (Washington, D.C.: World Bank, 2005), pp.302–306.

¹⁹ Trainer, “Intellectual Property Enforcement” (2008) 8 J. Marshall Rev. Intell. Prop. L. 47, 58.

United States] focus[es its] efforts is crucial”.²⁰ In the same public hearing, a former associate commissioner of the US Food and Drug Administration also noted the administration’s focus on getting “the best bang for the regulatory dollar ... [and going] after the big time criminals”.²¹ Even Tim Phillips, a strong advocate of tough enforcement, acknowledged the impossibility for the New York Police Department “to raid all the warehouses all of the time without swallowing the entire NYPD anti-counterfeiting budget and taking officers off other duties”.²²

To some extent, developed countries are confronted with the same type of resource-related challenges as those found in less developed countries. Given the similar challenges, one has to wonder whether it is intellectually dishonest to continue to insist on attributing intellectual property enforcement problems to a lack of political will on the part of local authorities. It is also worth exploring whether significant national divergences in enforcement costs, available resources and public policy priorities will warrant special and differential treatment for at least some less developed countries.²³

Although commentators tend to focus on the costs and benefits of the intellectual property system, a successful intellectual property system does not depend on laws and policies alone. It also relies on the introduction of complementary policy reforms. As Keith Maskus observed:

“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.”²⁴

Likewise, Claudio Frischtak found that a country’s overall investment climate was often more influential on FDI decisions than the strength of its intellectual property protection.²⁵

Moreover, as I and other commentators have pointed out, the successful effective enforcement of intellectual property rights depends on the existence of an “enabling environment” that provides the needed pre-conditions for successful intellectual property law reforms.²⁶ These pre-conditions include, among others, a consciousness of legal rights, a respect for the rule of law, an effective and independent judiciary, a well-functioning innovation and competition system, sufficiently developed basic infrastructure, established business practices and a critical mass of local stakeholders. It therefore may be unrealistic to expect strong intellectual property enforcement when these much-needed pre-conditions have yet to materialize.

If the intellectual property system is to be welfare-enhancing, countries may also need to put in place correction mechanisms or safeguard measures to ensure an appropriate balance between proprietary interests and public access needs. If such mechanisms do not exist, the intellectual property system could pose significant harm to the country when the system goes out of balance. While developed countries have the resources and regulatory mechanisms to reduce the impact of an unbalanced system—such as

²⁰ *Intellectual Property Rights Issues and Counterfeit Goods: Hearing before the U.S.-China Economic and Security Review Commission*, 109th Cong. 9 (2006) (written testimony of Chris Israel, International IPR Enforcement Coordinator, US Department of Commerce).

²¹ *Intellectual Property Rights Issues and Counterfeit Goods: Hearing before the U.S.-China Economic and Security Review Commission*, 109th Cong. 183 (2006) (oral testimony of Peter Pitts, President, Center for Medicine in the Public Interest, New York).

²² Tim Phillips, *Knockoff: The Deadly Trade in Counterfeit Goods* (London: Kogan Page, 2005), p.36.

²³ Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.16; Claudio R. Frischtak, “Harmonization Versus Differentiation in Intellectual Property Rights Regime” in Mitchel B. Wallerstein, Mary Ellen Mogege and Roberta A. Schoen (eds), *Global Dimensions of Intellectual Property Rights in Science and Technology* (Washington, D.C.: National Academy Press, 1993), p.98.

²⁴ Keith E. Maskus, “The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer” (1998) 9 *Duke J. Comp. & Int’l L.* 109, 129.

²⁵ Frischtak, “Harmonization Versus Differentiation in Intellectual Property Rights Regime” in *Global Dimensions of Intellectual Property Rights in Science and Technology*, 1993, pp.99–100.

²⁶ “Creating an Enabling Environment to Build Respect for IP: A Concept Paper by Pakistan”, November 4, 2009, WIPO/ACE/5/11, available at http://www.wipo.int/edocs/mdocs/enforcement/en/wipo_ace_5/wipo_ace_5_11-annex1.pdf [Accessed November 8, 2010]; Ricardo Meléndez-Ortiz, “Foreword” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.xii; Peter K. Yu, “Intellectual Property, Economic Development, and the China Puzzle” in Daniel J. Gervais (ed.), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS Plus Era* (Oxford: Oxford University Press, 2007), pp.213–216.

through the development of competition or antitrust laws or other public interest safeguards—less developed countries often do not.²⁷ It is, therefore, no surprise that the UK Commission on Intellectual Property Rights expressed concern that “the costs of getting the IP system ‘wrong’ in a developing country are likely to be far higher than in developed countries”.²⁸

Finally, in a cost-benefit analysis of an intellectual property enforcement regime, there remain some difficult questions about the distributional effects of increased intellectual property enforcement.²⁹ While countries tend to focus on *net* economic gains when determining whether they should sign on to new or tougher standards, many of them ignore the fact that these gains will not be fairly distributed unless a well-functioning transfer mechanism already exists to allow the anticipated winners to share the new benefits with the potential losers. As Frederick Abbott reminded us about the adverse public health implications of the bilateral and plurilateral free trade agreements:

“The problem with ... using net economic gains or losses as the developing country benchmark is that gains for a developing country’s textile or agricultural producers do not directly translate into higher public or private health expenditures. Salaries for part of the workforce may increase and government tax revenues may rise, and this may indirectly help offset pharmaceutical price increases. However, in order for the health sector not to be adversely affected, there must be some form of transfer payment, whether in the form of increased public health expenditures on pharmaceuticals, by providing health insurance benefits, or other affirmative acts. In a world of economic scarcity, the prospect that governments will act to offset increases in medicines prices with increased public health expenditures is uncertain.”³⁰

In sum, the debate about intellectual property enforcement cannot be reduced to a simple question about a government’s political will to enforce intellectual property rights. Rather, it involves complex questions about whether that government can discharge its heavy cost burdens, whether it can justify the trade-offs between intellectual property protection and other competing public needs and whether it has introduced the much-needed complementary policy reforms. The success of an intellectual property enforcement regime, therefore, depends on both its *internal* design and the *external* conditions. Because many of these external conditions work in tandem with the intellectual property system to promote creativity and innovation and to provide an appealing investment climate for foreign firms, they are both interdependent and mutually reinforcing.

Economics

In June 2010, the ITC held a public hearing on the impact of intellectual property infringement and indigenous innovation policies in China on the US economy.³¹ This hearing, along with two new studies, was initiated at the request of the US Senate Finance Committee. While the first study focuses on the development of a framework to measure the effects of intellectual property infringement and indigenous innovation policies in China on the US economy, the follow-up study will document these effects. Drawing on the ITC’s efforts to conduct these studies and my earlier testimony at the public hearing, this section outlines six different challenges in measuring the cross-border economic impact of piracy and counterfeiting.

²⁷ Peter K. Yu, “TRIPS and Its Discontents” (2006) 10 Marq. Intell. Prop. L. Rev. 369, 382–383.

²⁸ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy*, 2002, p.4.

²⁹ Anupam Chander and Madhavi Sunder, “The Romance of the Public Domain” (2004) 92 Cal. L. Rev. 1331; Margaret Chon, “Intellectual Property and the Development Divide” (2006) 27 Cardozo L. Rev. 2821; Peter M. Gerhart, “The Tragedy of TRIPS” [2007] Mich. St. L. Rev. 143; Keith E. Maskus, “Introduction” in Keith E. Maskus (ed.), *Intellectual Property, Growth and Trade* (Amsterdam: Elsevier Science, 2008), p.2.

³⁰ Frederick M. Abbott, “The Cycle of Action and Reaction: Developments and Trends in Intellectual Property and Health” in Pedro Roffe, Geoff Tansey and David Vivas-Eugui (eds), *Negotiating Health: Intellectual Property and Access to Medicines* (London: Earthscan, 2006), p.33.

³¹ *China: Intellectual Property Infringement, Indigenous Innovation Policies, and Frameworks for Measuring the Effects on the U.S. Economy: Hearing before the U.S. International Trade Commission*, 111th Cong. (June 15, 2010).

The first three challenges are of a general nature and relate to virtually all surveys of intellectual property protection and enforcement. The first challenge concerns the difficulty in determining which US industries are relevant to the studies. With the ubiquity of intellectual property-related goods and services, intellectual property protection and enforcement affects virtually all industries. The only differences among these industries seem to be how much and how significant. The growing impact of intellectual property standards is indeed the reason why intellectual property has now moved from a legal backwater to the forefront of the domestic and international policy debates.

In the past decade, the publishing, recording, movie, software and game industries have greatly emphasised their important contributions to the US economy.³² Their assessments include not only their direct contributions, but also the contributions of other supporting industries, including those whose positions may differ significantly from theirs.³³ In recent years, however, these other industries have become more active in documenting their own economic contributions. The Computer and Communications Industry Association, for example, pioneered a study to measure the contributions of the so-called fair use industries.³⁴ Even though this new set of studies is just as self-interested as the entertainment industries' studies, the proliferation of studies from disparate industries that take drastically different policy positions does make salient the importance of, and challenges to, determining the relevant industries for analytical purposes.

The second challenge concerns the difficulty in collecting data to illustrate the extent of piracy and counterfeiting. Admittedly, practical challenges to collecting data about illicit activities exist. As a result, self-interested trade groups often have to collect the data themselves.³⁵ Nevertheless, given how these data are collected, they remain highly suspect. In fact, unless the data are corroborated by independent researchers, studies that rely solely or primarily on them are likely to run into a serious "garbage in, garbage out" problem.

Consider, for example, the figures supplied by the Business Software Alliance (BSA) in its effort to document global piracy rates.³⁶ Policymakers, commentators and academics have widely questioned their accuracy. While a draft Australian government report described these statistics "as a 'self-serving hyperbole', 'unverified and epistemologically unreliable'",³⁷ Gary Shapiro, the president of the Consumer Electronics Association, called these figures "absurd on [their] face" and "patently obscene".³⁸ Ivan Png further demonstrated that the BSA's change of consultants had led to a change in methodology for measurement, which, in turn, resulted in systematic effects on published piracy rates.³⁹ Sadly, despite these many criticisms, the industry-supplied figures remain in wide use among policymakers, researchers and the mass media.

³² Nam D. Pham, *The Impact of Innovation and the Role of Intellectual Property Rights on U.S. Productivity, Competitiveness, Jobs, Wages and Exports* (Washington, D.C.: NDP Consulting Group, 2010); Stephen E. Siwek, *Copyright Industries in the U.S. Economy: The 2003–2007 Report* (Washington, D.C.: Economists Incorporated, 2009).

³³ For example, the supporting industries include the "manufacturers, wholesalers and retailers of ... VCRs, personal computers and usage dependent products including blank recording material". However, these firms are likely to disagree with the positions taken by the core intellectual property industries.

³⁴ Computer and Communications Industry Association, *Fair Use in the U.S. Economy* (Washington, D.C.: Computer and Communications Industry Association, 2007); Computer and Communications Industry Association, *Fair Use in the U.S. Economy* (Washington, D.C.: Computer and Communications Industry Association, 2010). For the purposes of these studies, fair use industries include "manufacturers of consumer devices that allow individual copying of copyrighted programming; educational institutions; software developers; and Internet search and web hosting providers".

³⁵ Sherwood, *Intellectual Property and Economic Development*, 1990, p.68; United States Government Accountability Office, *Intellectual Property Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* (Washington, D.C.: United States Government Accountability Office, 2010), pp.16–17.

³⁶ Business Software Alliance and International Data Corporation, *Seventh Annual BSA/IDC Global Software Piracy Study* (Washington, D.C.: Business Software Alliance and International Data Corporation, 2010).

³⁷ Li, "Ten General Misconceptions about the Enforcement of Intellectual Property Rights" in *Intellectual Property Enforcement*, 2009, p.25.

³⁸ "Software Piracy: BSA or Just BS?", *Economist*, May 21, 2005, p.93.

³⁹ I.P.L. Png, "On the Reliability of Software Piracy Statistics" (2010) 9 Elec. Com. Res. & Applications 365.

Among the flaws in the BSA study, the most widely criticized are the highly incredulous one-to-one substitution rate between legal and infringing goods and the overvaluation of pirated and counterfeit goods.⁴⁰ As Carsten Fink observed in an issue paper he wrote before joining WIPO as its first-ever chief economist:

“[BSA’s assumption] that, in the absence of piracy, all consumers of pirated software would switch to legitimate copies at their current prices ... is unrealistic—especially in developing countries where low incomes would likely imply that many consumers would not demand any legitimate software at all. Accordingly, estimated revenue losses by software producers are bound to be overestimated.”⁴¹

Indeed, it is virtually impossible to count as lost sales those products that firms cannot sell in less developed countries. At best, the figures reflect the retail value of pirated goods based on US prices, or whatever prices researchers have set.⁴² Those figures, however, are drastically different from lost sales.

An additional problem concerns the failure by these studies to recognise the existence of a wide variety of offsetting welfare benefits. As the US Government Accountability Office (GAO) pointed out in its recent study, although piracy and counterfeiting may affect the core intellectual property industries, these industries, along with those in other sectors and individual consumers, may have obtained offsetting benefits. As stated in the study:

“[C]onsumers may use pirated goods to ‘sample’ music, movies, software, or electronic games before purchasing legitimate copies, which may lead to increased sales of legitimate goods. In addition, industries with products that are characterized by large ‘switching costs’, may also benefit from piracy due to lock-in effects ... [Moreover,] companies that experience revenue losses in one line of business—such as movies—may ... increase revenues in related or complementary businesses due to increased brand awareness. For instance, companies may experience increased revenues due to the sales of merchandise that are based on movie characters whose popularity is enhanced by sales of pirated movies. One expert also observed that some industries may experience an increase in demand for their products because of piracy in other industries. This expert identified Internet infrastructure manufacturers (e.g., companies that make routers) as possible beneficiaries of digital piracy, because of the bandwidth demands related to the transfer of pirated digital content. While competitive pressure to keep one step ahead of counterfeiters may spur innovation in some cases, some of this innovation may be oriented toward anticounterfeiting and antipiracy efforts, rather than enhancing the product for consumers.”⁴³

Although the GAO study did not go further, one could easily question how much of the losses the intellectual property industries claimed to have suffered would be cancelled out by these benefits. If the benefits indeed outweigh the claimed losses, the country will have a *net* economic gain even though the core intellectual property industries may have suffered losses.

The third challenge concerns the complexity of intellectual property laws and the significant differences between “law on the books” and “law in action”—two areas that economists sometimes ignore.⁴⁴ Consider patent law, for example. It is pointless to assume that the length of patent protection to be a static 20 years

⁴⁰ United States Government Accountability Office, *Intellectual Property Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods*, 2010, pp.17–18.

⁴¹ Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.13.

⁴² Li, “Ten General Misconceptions about the Enforcement of Intellectual Property Rights” in *Intellectual Property Enforcement*, 2009, p.25.

⁴³ United States Government Accountability Office, *Intellectual Property Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods*, 2010, p.15.

⁴⁴ Maskus, “Introduction” in *Intellectual Property, Growth and Trade*, 2008, p.3; Jonathan Putnam, “The Law and Economics of International Intellectual Property: A Primer” in *Intellectual Property, Growth and Trade*, 2008, p.84. On the challenges in mapping legal doctrines with economic ideas, see Suzanne Scotchmer, *Innovation and Incentives* (Cambridge, MA: MIT Press, 2004), pp.97–118.

without taking into consideration maintenance or renewal fees and potential regulatory delays.⁴⁵ Likewise, it will be ill advised to focus on the total patent count if many of the counted patents are likely to be invalidated upon legal challenge.⁴⁶ At the international level, it is also worth thinking more about the complications caused by the prosecution of identical patents by firms in different jurisdictions with varying patent quality.⁴⁷

In addition, it is highly important to distinguish between infringement on the one hand and piracy and counterfeiting on the other—a distinction that policymakers and industry groups often overlook.⁴⁸ Microsoft,⁴⁹ MGM,⁵⁰ Twentieth Century Fox⁵¹ and Universal Studios⁵² have all been found to have repeatedly infringed others' intellectual property rights. Yet most would find it absurd to classify these firms as "repeat pirates". The important policy question, therefore, is not whether these firms have infringed—and in these examples, repeatedly infringed—but whether such infringement is a necessary part of doing legitimate business and how large the infringement-innovation ratio is. John Walsh, Ashish Arora and Wesley Cohen, for example, found that many university and industrial researchers use patented technology without a license when patent protection prevents them from gaining access to the needed research tools.⁵³

It is important to remember that creativity and innovation often involve risks. Some industries, indeed, are more vulnerable to litigation than others—think newspapers and broadcasters in the copyright context⁵⁴ and software developers in the patent context.⁵⁵ Because an intellectual property system where firms are highly concerned about legal risks is likely to greatly stifle creativity and innovation, researchers need to think more about whether they should limit their studies to piracy and counterfeiting, as opposed to all forms of infringement.

Moreover, many intellectual property issues cannot be examined by focusing on economics alone. To be certain, many non-legally trained researchers have acknowledged their limited knowledge of intellectual property laws and the judicial process. Some laws also remain unsettled. Nevertheless, researchers will greatly benefit from a better understanding of the interplay between law and economics. These benefits are, indeed, why law schools in the United States and elsewhere have now championed the "law and economics" approach. Thanks in no small part to the pioneering efforts of William Landes and Richard Posner, an ever-growing number of scholars have conducted research using this approach—through cross-disciplinary collaborations or otherwise.⁵⁶

While the first three challenges appear in virtually all surveys on piracy and counterfeiting, the next three challenges relate specifically to the ITC studies. The fourth challenge concerns the difficulty in quantifying such intangibles as the promotion of free speech, free press and democratic transition. As

⁴⁵ Christine Greenhalgh and Mark Rogers, *Innovation, Intellectual Property, and Economic Growth* (Princeton: Princeton University Press, 2010), pp.36–37, 167–169; Ashish Arora, "Intellectual Property Rights and the International Transfer of Technology: Setting out an Agenda for Empirical Research in Developing Countries" in World Intellectual Property Organization, *The Economics of Intellectual Property: Suggestions for Further Research in Developing Countries and Countries with Economies in Transition* (Geneva: World Intellectual Property Organization, 2009), p.46; Scotchmer, *Innovation and Incentives*, 2006, p.69; Peter K. Yu, "The International Enclosure Movement" (2007) 82 *Ind. L.J.* 827, 837 fn.40.

⁴⁶ Correa, "The Push for Stronger Enforcement Rules" in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, pp.42–43.

⁴⁷ Jonathan Eaton and Samuel Kortum, "Patents and Information Diffusion" in *Intellectual Property, Growth and Trade*, 2008, p.92.

⁴⁸ Mitchel B. Wallerstein, Mary Ellen Mogege and Roberta A. Schoen, "Introduction" in *Global Dimensions of Intellectual Property Rights in Science and Technology*, 1993, p.11.

⁴⁹ e.g. *i4i Ltd P Ship v Microsoft Corp* 598 F. 3d 831 (Fed. Cir. 2010); *Z4 Tech., Inc v Microsoft Corp* 507 F.3d 1340 (Fed. Cir. 2007).

⁵⁰ e.g. *Sheldon v Metro-Goldwyn Pictures Corp* 309 U.S. 390 (1940); *Barsha v Metro-Goldwyn-Mayer* 90 P. 2d 371 (Cal. Ct App. 1939).

⁵¹ e.g. *L.C. Page & Co. v Fox Film Corp* 83 F. 2d 196 (2d Cir. 1936); *Fader v Twentieth Century-Fox Film Corp* 169 F. Supp. 880 (S.D.N.Y. 1959).

⁵² *Stewart v Abend* 495 U.S. 207 (1990); *Twentieth Century-Fox Film Corp v MCA, Inc* 715 F. 2d 1327 (9th Cir. 1983); *Woods v Universal City Studios, Inc* 920 F. Supp. 62 (S.D.N.Y. 1996).

⁵³ John P. Walsh, Ashish Arora and Wesley M. Cohen, "Working through the Patent Problem" (2003) 299 *Science* 1021.

⁵⁴ The House Report on the 1976 US Copyright Act declared: "broadcasters and newspaper publishers ... are particularly vulnerable to [the] type of infringement suit" where the infringer was not aware and had no reason to believe that its acts constituted an infringement of copyright. H.R. Rep. No.94–1476, at 162.

⁵⁵ "[S]oftware patents accounted for 38 percent of the total cost of patent litigation to public firms during the late 1990s". James Bessen and Michael J. Meurer, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk* (Princeton: Princeton University Press: 2008), p.22.

⁵⁶ William M. Landes and Richard A. Posner, *The Economic Structure of Intellectual Property Law* (Cambridge, MA: Belknap Press of Harvard University Press, 2003).

economists have widely noted, depending on a country's market size and conditions as well as its imitative or innovative capacity, inadequate intellectual property protection can affect a country's ability to generate taxes, create jobs, transfer technology, diffuse knowledge, attract FDI, increase trade flows and develop human capital.⁵⁷ The lack of protection, nevertheless, can *enhance* welfare by encouraging the free flow of information.

For example, the reuse of copyrighted content helps provide information that otherwise may not be available. The provision of affordable communications technologies—whether licensed or not—also helps enlarge the much-needed public sphere. Although many assume that only certain types of information—such as news stories—will help promote democratic transition and civil society development, this is not entirely true. Entertainment products that are uncontroversial, highly commercial and seemingly frivolous could easily contain useful political information. While many of these commercial products may have been created to provide entertainment, in some countries they also supply an important window to the outside world. In addition, the creative reuse of pre-existing materials can promote the development of a vibrant democratic culture, which in turn affects a country's political future.⁵⁸

It is not uncommon to find Hollywood movies or American television programmes portraying different forms of government, the need for checks and balances or separation of powers, and the protection of constitutional rights and civil liberties. The three prequels to *Star Wars*, for example, are filled with issues concerning corruption, slavery, federalism, democracy, racial tension and the American Government. Although I would not go so far to claim that the broadcast of the television series *Dallas* in East Germany led to the collapse of the Berlin Wall, as some suggested, I also hesitate to claim that Western entertainment products played no role at all. After all, it is more than simple trade protectionism when countries choose to ban Hollywood movies from their domestic markets!

As far as intellectual property enforcement in China is concerned, one area that researchers have largely overlooked is its relation to the way the masses communicate. Because of heavy information control, it is highly important that the public can reuse, without permission, materials previously approved by censors or that are only available abroad. To provide an alternative source of information, they may need to repost copyrighted stories, videos or photos that otherwise would not have been available. They may also need to repurpose pre-existing materials to address issues that they otherwise cannot discuss because of government censorship.

At times, parodies, satires, coded words, euphemisms and allusions to popular culture are the dominant vehicles of communication.⁵⁹ Materials that are seemingly unrelated to the intended original message may need to be used to create associations, build in tacit meanings, provide emotional effects and ultimately avoid censorship. Whether it is a remix of video clips from Western movies, the synchronisation of contents to rock 'n roll songs or the modification of news reports from foreign media, repurposed contents carry within them rich "hidden transcripts" that provide important social commentary.⁶⁰

An additional concern relates to the potential for intellectual property rights to be used as a pretext to suppress or silence dissent.⁶¹ After all, many of the reused contents are copyrighted. Only a few months ago, the *New York Times* provided a detailed report on the complaints by an outspoken Siberian environmental activist group about how Russian authorities had confiscated their computers (as well as

⁵⁷ e.g. Keith E. Maskus, *Intellectual Property Rights in the Global Economy* (Washington, D.C.: Institute for International Economics, 2000); Maskus, "The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer" (1998) 9 *Duke J. Comp. & Int'l L.* 109; Carlos A. Primo Braga and Carsten Fink, "The Relationship Between Intellectual Property Rights and Foreign Direct Investment" (1998) 9 *Duke J. Comp. & Int'l L.* 163.

⁵⁸ Jack M. Balkin, "Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society" (2004) 79 *NYU L. Rev.* 1.

⁵⁹ Ashley Esarey and Xiao Qiang, "Political Expression in the Chinese Blogosphere: Below the Radar" (2008) 48 *Asian Surv.* 752.

⁶⁰ James C. Scott, *Domination and the Arts of Resistance: Hidden Transcripts* (New Haven: Yale University Press, 1990).

⁶¹ William P. Alford, "Making the World Safe for What? Intellectual Property Rights, Human Rights and Foreign Economic Policy in the Post-European Cold War World" (1997) 29 *NYU J. Int'l L. & Pol.* 135, 144–145; Yu, "Three Questions That Will Make You Rethink the U.S.-China Intellectual Property Debate" (2008) 7 *J. Marshall Rev. Intell. Prop. L.* 412, 424–432.

those of other advocacy groups and opposition newspapers) in the name of protecting Microsoft's copyrighted software.⁶² That report eventually generated a raging public debate about the need to re-examine intellectual property protection and enforcement through the lens of corporate social responsibility.

In short, there are clearly costs to strengthened intellectual property protection and enforcement. Some of those costs, however, are hard to quantify. Although commentators have widely embraced democratic society and the promotion of human rights and civil liberties, the value of these benefits are often ignored in economic analyses—through convenient definitions, unrealistic assumptions or crafty interpretation of the researchers' mandates. As Amartya Sen reminded us, freedom and democracy are important because of:

- “1) their intrinsic importance;
- 2) their consequential role in providing political incentives for economic security;
- 3) their constructive role in the genesis of values and priorities.”⁶³

The fact that freedom and democracy are not readily measurable does not mean that we should ignore their uneasy relationship with stronger intellectual property enforcement. In fact, given their paramount importance, freedom and democracy deserve greater recognition in empirical studies on intellectual property enforcement.

To be certain, it is fair to ask why intellectual property right holders need to subsidise free speech developments in foreign countries. However, if a country, like the United States, has already decided to provide funding to promote free speech developments in other countries, that question seems to be more about internal allocation of gains and losses through the legislative process than about whether subsidies should be made in the first place. For instance, should the entertainment industries be able to seek compensation from a pool of funds that have been earmarked for the promotion of democratic transition and civil society development? Should the government provide tax benefits to those whose works have been used to promote democracy and the protection of human rights—for example, by allowing entertainment firms to write off democracy-inducing losses? Should the government introduce an alternative means of compensation to support democracy-inducing activities—such as the purchase at reasonable cost of blanket licenses for civil society organisations? More challengingly, could the government introduce some of these measures without getting into a subjective and highly political debate about what democracy, freedom and human rights are?

The fifth challenge concerns how to determine what researchers should cover in a highly dynamic, complex and interdependent global environment. While it is not that difficult to determine the impact of pirated CDs, VCDs and DVDs on the entertainment industries—although researchers continue to disagree over the ultimate figures—it is much more difficult to determine the overall impact of piracy and counterfeiting in China on the US economy.

Consider the following broader questions. Should researchers consider as part of the US economy those Chinese firms that come to the United States and thereby produce US jobs? How should researchers handle those cheap, infringing materials American firms use as inputs in their outsourced productions in China? Should researchers consider as a benefit that piracy has developed in China a pool of cheap, but highly specialised labour that American firms can use for legitimate purposes? Should they consider as a benefit that piracy has led many American products—including Microsoft software—to become the industry standard and thereby produce network effects? What about those Chinese students who now want to study in the United States because they have watched pirated American television programmes? What about those Chinese tourists who now want to visit Disneyland, the Universal Studios, the Empire State Building,

⁶² Clifford J. Levy, “Using Microsoft, Russia Suppresses Dissent”, *New York Times*, September 12, 2010, p.A1; Clifford J. Levy, “Microsoft Changes Policy Amid Criticism It Backed Suppression of Dissent in Russia”, *New York Times*, September 14, 2010, p.A4.

⁶³ Amartya Sen, *Development as Freedom* (New York: Anchor Books, 1999), p.246.

the bridges in Madison County, Iowa or other places in the United States after they have seen those places in pirated US movies? These are all difficult questions that could raise serious complications when researchers study the cross-border economic impact of piracy and counterfeiting.

Moreover, piracy and counterfeiting can provide benefits to US consumers. Policymakers and industry representatives have a high tendency to equate pirated or counterfeit products with sub-standard goods.⁶⁴ However, this tendency is somewhat misguided. Foreign businesses in China have repeatedly complained about how counterfeit products are made in what they call “ghost shifts”.⁶⁵ In these shifts, many of the infringing goods are made to the same specifications by the same factories using the same personnel and raw materials. Understandably, there may be limited quality control for infringing products. There may also be cost-cutting measures, especially when the manufacture of the products involves difficult processes or costly raw materials. The infringing factories may even want to introduce irregularities to distinguish the licensed goods from their unlicensed counterparts—or at least count those rejected irregular licensed goods as acceptable unlicensed products.

Nevertheless, it is incorrect to assume pirated products are *always* inferior. It is even more incorrect to assume infringing goods will *always* harm consumers. In many situations involving ghost shifts, factory overruns or contract disputes that have resulted in a *technical* loss of legal authorisation, the only difference between the legitimate goods and their infringing counterparts may be legal authorisation. Because the infringing goods in these situations are of the same standard, or close to that standard, the unauthorised production of those goods may actually result in a consumers’ surplus: consumers are now getting the same products for a much lower price. While ghost shifts, factory reruns and the continued production amid contract disputes may be bad for intellectual property right holders, they could be good for US consumers.

The final challenge concerns the interactions between intellectual property protection and a country’s competitive position. Although it is widely recognised that strong intellectual property protection is important to American firms, greater intellectual property protection in China can also weaken the US competitive position. This point sounds counterintuitive, but it actually makes sense. From a long-term competition standpoint, greater intellectual property protection will make China more innovative and therefore more competitive. Such increased competitiveness will slowly erode away the competitive edge that the United States has enjoyed as a result of its much higher intellectual property standards.

In fact, if all countries offer the same level of intellectual property protection and enforcement, other location factors—such as market size and growth or costs of labour, transportation or raw materials—will be determinative.⁶⁶ As China offers stronger intellectual property protection, more American and multinational firms may consider relocating to China to take advantage of its lower production costs and considerable market potential.⁶⁷ More technology will be transferred as a result, and more US jobs—a key focus of the ITC studies—will be outsourced.

It is no coincidence that many research and development (R & D) intensive industries remain located in the United States—and for that matter, other countries with a strong intellectual property system. It is also worth noting that many researchers and highly educated people choose to stay in the country.⁶⁸ To some extent, weaker intellectual property protection abroad may have helped keep US jobs in the R & D

⁶⁴ Li, “Ten General Misconceptions about the Enforcement of Intellectual Property Rights” in *Intellectual Property Enforcement*, 2009, pp.20–21.

⁶⁵ Phillips, *Knockoff: The Deadly Trade in Counterfeit Goods*, 2005, pp.25–28.

⁶⁶ Examples of other location factors include local demand patterns, distance from markets, access to natural resources, trade protection, education and training of the local workforce, the condition of the financial sector, the health of the legal system and the transparency of governmental procedures. Paul J. Heald, “Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game” (2003) 88 *Minn. L. Rev.* 249, 258–259; Maskus, “The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer” (1998) 9 *Duke J. Comp. & Int’l L.* 109, 123.

⁶⁷ Peter K. Yu, “Trade Barriers Won’t Contain China’s Cars”, *Detroit News*, October 25, 2007, p.15A.

⁶⁸ Sherwood, *Intellectual Property and Economic Development*, 1990, p.156; Edmund W. Kitch, “The Patent Policy of Developing Countries” (1994) 13 *UCLA Pac. Basin L.J.* 166, 173–176.

intensive industries, especially amid the current global economic crisis. Stronger intellectual property protection and enforcement in China, therefore, is a double-edged sword: it can help and hurt the US economy at the same time.

In sum, although it is easy to point out the harmful effects of piracy and counterfeiting in China on the US economy, it is rather hard to determine their overall impact. The assessment of such impact depends on a wide variety of factors, including some of those that are hard to quantify and not readily measurable as well as those that have yet to receive significant research attention. The challenges the ITC now encounters in undertaking its two studies, therefore, provide a good illustration of the immense challenges researchers continue to face in their efforts to measure the cross-border economic impact of piracy and counterfeiting.

Estimates

While it has been challenging to undertake research on the cross-border economic impact of piracy and counterfeiting, it is equally challenging to figure out how to compare a multitude of countries with different sizes, economies, market conditions, technological proficiencies, institutional infrastructures and cultural backgrounds. One of the critical challenges in comparative analysis is to locate the *tertium comparationis* (what to compare).

Consider, for example, a cross-country comparison of piracy and counterfeiting—a topic on which many policymakers, industry groups and academic commentators have focused. Should researchers compare the countries based on the total amount of piratical and counterfeiting activities (or the amount of pirated or counterfeit goods they produce)? Should researchers measure the countries against an idealised yardstick of effective intellectual property protection and enforcement? Should the comparisons take into account the various stages of development—and if so, should the stages be determined based on self-selection,⁶⁹ GDP, per capita income or the Human Development Index? Does it matter how established the intellectual property system in these countries is? Should researchers rely on subjective perceptions of firm managers—an approach used in Edwin Mansfield’s seminal study and the World Economic Forum’s *Global Competitiveness Report*?⁷⁰ Should researchers consider both the quality and quantity of enforcement—for example, does it matter whether enforcement is “consistent, transparent, and procedurally fair”?⁷¹

Let’s continue to use China for our illustrations. If researchers focus on the total amount of piratical and counterfeiting activities, China is likely to be found one of the world’s biggest pirates by virtue of its huge economy and high export volume. The outcome is likely to be the same in the short term, regardless of whether China has worked very hard to strengthen intellectual property protection and enforcement. It is, indeed, no surprise that China has more piratical and counterfeiting activities than, say, Georgia, Zimbabwe, Bangladesh and Moldova. According to the latest BSA survey—my earlier criticisms notwithstanding—all of these countries have piracy rates of more than 90 per cent and are considered the world’s biggest pirate nations.⁷² By contrast, China’s piracy rate was merely 79 per cent, and the country was not even included in the list of the world’s top 25 pirate nations.⁷³

Moreover, many of the piratical and counterfeiting activities occur in China because of its low costs of production, labour and distribution. At present, China is the low cost provider of many different categories of goods and services. As Oded Shenkar wrote in 2005:

⁶⁹ Self-selection is the method the WTO uses to determine a country’s developing country status.

⁷⁰ Edwin Mansfield, *Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer* (Washington, D.C.: International Finance Corp, 1994); World Economic Forum, *The Global Competitiveness Report 2010–2011* (Geneva: World Economic Forum, 2010), p.367.

⁷¹ Martin K. Dimitrov, *Piracy and the State: The Politics of Intellectual Property Rights in China* (Cambridge: Cambridge University Press, 2009), p.6.

⁷² Business Software Alliance and International Data Corporation, *Seventh Annual BSA/IDC Global Software Piracy Study*, 2010, p.7.

⁷³ China was 26th in the survey, in a tie with Botswana, Ivory Coast, Kenya and Nicaragua.

“China-based 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.”⁷⁴

Given the large amount and variety of products China manufactures, it is understandable why pirates and counterfeiters consider China an ideal location for manufacturing their products. Indeed, if an organised crime syndicate in Europe or the United States, as opposed to China, needs to produce infringing products, they are likely to select China as a place of production for no other reason than it makes simple business sense. It is important to remember that pirates and counterfeiters are rational businesspeople who seek profits and opportunities!⁷⁵

By contrast, if researchers focus on piracy and counterfeiting on a per capita basis, China is likely to be saved by its 1.3-billion population. Other less developed countries may also fare better. As Aaron Schwabach observed with respect to the study conducted for the Motion Picture Association of America:

“In only four of the countries listed in the [study] as the top ten markets for losses to U.S. producers does the average person steal more from U.S. studios than do the Americans themselves. Three of these four countries are developed members of the European Union: France, Spain, and the United Kingdom. Mexico aside, the developing countries on this list have far lower per capita piracy rates ... Russia, often portrayed in the media as a lawless Wild West dotted with organized-crime fiefdoms, has a per-capita rate only slightly higher than that of notoriously law-abiding Japan, and lower than that of equally staid Germany.

With China, the difference is exceptionally stark: The per capita cost of piracy is negligible, an order of magnitude lower than Germany’s.”⁷⁶

Likewise, China is not much of an outlier if researchers compare China with other countries at comparable levels of economic development. This finding is actually not surprising. From Germany to the United States to Japan, all of today’s industrial powers have passed through what I have described as the “crossover point”.⁷⁷ Even though both the United States and Japan have now become major *demandeurs* for strong global intellectual property enforcement norms, both of them had a chequered past as one of the world’s biggest pirate nations.⁷⁸ As William Kingston reminded us:

“From the start of the industrial revolution, every country that became economically great began by copying: the Germans copied the British; the Americans copied the British and the Germans, and the Japanese copied everybody.”⁷⁹

If researchers are willing to make comparison based on the age of the country’s intellectual property system, China may also fare quite well vis-à-vis other countries in both the developed and less developed worlds. The present Chinese intellectual property system was instituted shortly after the country’s re-opening to foreign trade in the late 1970s. The trade mark, patent and copyright systems in China were established in 1982, 1984 and 1990, respectively. Even if one is willing to trace the Chinese intellectual property

⁷⁴ Oded Shenkar, *The Chinese Century: The Rising Chinese Economy and Its Impact on the Global Economy, the Balance of Power, and Your Job* (Upper Saddle River, N.J.: Wharton School Publishing, 2005), pp.2–3.

⁷⁵ Fink, “Enforcing Intellectual Property Rights” in *The Global Debate on the Enforcement of Intellectual Property Rights and Developing Countries*, 2009, p.15; Thomas Lagerqvist and Mary L. Riley, “How to Protect Intellectual Property Rights in China” in Mary L. Riley (ed.), *Protecting Intellectual Property Rights in China* (Hong Kong: Sweet & Maxwell Asia, 1997), p.17; Peter K. Yu, “From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China” (2006) 55 Am. U. L. Rev. 901, 949.

⁷⁶ Aaron Schwabach, “Intellectual Property Piracy: Perception and Reality in China, the United States, and Elsewhere” (2008) 2 J. Int’l Media & Ent. L. 65, 74.

⁷⁷ Peter K. Yu, “The Global Intellectual Property Order and Its Undetermined Future” (2009) 1 W.I.P.O.J. 1, 10–15.

⁷⁸ William Kingston, “An Agenda for Radical Intellectual Property Reform” in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (Cambridge: Cambridge University Press, 2005), p.658; Yu, “The Global Intellectual Property Order and Its Undetermined Future” (2009) 1 W.I.P.O.J. 1, 12–13.

⁷⁹ Kingston, “An Agenda for Radical Intellectual Property Reform” in *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime*, 2005, p.658.

system back to the one the imperialist powers imposed on China through gun-boat diplomacy at the turn of the 20th century, the age of this adolescent intellectual property system is still far younger than that of the fully grown adults in the United States and Western Europe.⁸⁰ The system is also much younger than many of the colonial intellectual property systems that the imperialist powers put in place in Africa, Asia and Latin America.⁸¹

In the United States, for example, the copyright and patent systems were established as early as the 18th century. The US Constitution of 1789 stated explicitly that:

“Congress shall have Power ... to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”

In Europe, one could trace the origin of the patent system to as early as the Renaissance. On March 19, 1474, the Venetian Republic adopted its first patent law to encourage inventors and reward them for ingenuity.⁸² The Venetian patent statute has since inspired the development of patent systems in France, the Holy Roman Empire and other parts of Europe.

Notwithstanding this substantial headstart, Italy and many other European countries—such as France, Portugal and Spain—continue to have a piracy rate of between 40 to 50 per cent, according to BSA at least.⁸³ If these countries have a tough time reducing piracy despite many centuries of headstart, one cannot help but appreciate the tremendous progress China has made in fewer than 30 years of intellectual property law developments (or even 100 years if one counts the imperialist years and ignores all the interruptions from revolutions, warlordism, wars, the UN trade embargo, class struggles and political turmoil⁸⁴). A piracy rate of 79 per cent does not seem to be too high when other more economically developed and technologically advanced countries can only reduce their rates to half of China’s current level despite having a well-functioning intellectual property system for many more centuries.

If the challenges in selecting these metrics are not daunting enough, researchers also need to consider whether they should focus on only certain types of intellectual property rights or piratical and counterfeiting activities. For example, intellectual property covers a large and ever-expanding variety of rights, such as copyrights, patents, trade marks, trade names, geographical indications, industrial designs, layout designs of integrated circuits, plant varieties, trade secrets and other undisclosed information, sui generis database rights and the protection of traditional knowledge and cultural expressions.

It would be misleading to use patent as a proxy for intellectual property rights, even though many researchers have done just that. Most commentators have also treated trade marks separately owing to their very different justifications and goals. In fact, what intellectual property rights a country needs may depend on the type of FDI it wants to attract.⁸⁵ If one counts the protection of traditional knowledge and

⁸⁰ William P. Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford: Stanford University Press, 1995), pp.37–38; Peter K. Yu, “Piracy, Prejudice, and Perspectives: Using Shakespeare to Reconfigure the U.S.-China Intellectual Property Debate” (2001) 19 BU Int’l. L.J. 1, 6.

⁸¹ India, for example, enacted a patent law in 1856, based on the British Patent Law of 1852.

⁸² Stephen P. Ladas, *Patents, Trademarks, and Related Rights: National and International Protection* (Cambridge, MA: Harvard University Press, 1975), p.6; Peter K. Yu, “Currents and Crosscurrents in the International Intellectual Property Regime” (2004) 38 Loy. L.A. L. Rev. 323, 330.

⁸³ Business Software Alliance and International Data Corporation, *Seventh Annual BSA/IDC Global Software Piracy Study*, 2010, p.13.

⁸⁴ Despite commercial treaties with the US, Britain and Japan at the turn of the 20th century, China did not introduce substantive copyright, patent, and trademark laws until 1910, 1912 and 1923, respectively.

⁸⁵ Firms that seek to market finished products, for example, may need a different mix of intellectual property protections from those that seek to merely relocate their manufacturing or R & D facilities. Heald, “Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game” (2003) 88 Minn. L. Rev. 249, 258–260; Maskus, “The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer” (1998) 9 Duke J. Comp. & Int’l L. 109, 119–128.

cultural expressions, some less developed countries may even argue that developed countries remain some of the world's biggest pirates because of their engagement in "biopiracy",⁸⁶ not to mention their strong and continuous resistance to the protection of traditional knowledge and cultural expressions.⁸⁷

It is also important not to focus solely or primarily on physical piracy while ignoring similar problems on the internet. Although less developed countries, especially those in Asia, have been heavily criticised for their lack of protection and enforcement of intellectual property rights with respect to optical discs, it is important to remember that online piracy has been rather serious in virtually all developed countries. In the past decade, for instance, the US entertainment industries have labelled a large number of American teenagers and college students as "pirates", notwithstanding the fact that they look and behave quite differently from the Asian pirates thousands of miles away. Since 2003, the recording industry alone has filed lawsuits against more than 35,000 individuals in the United States for illegal distribution of copyrighted works via peer-to-peer networks.⁸⁸ Courts in the developed world, such as Australia, Canada and the United States, have also been inundated with cases addressing secondary copyright liability.⁸⁹ Given the massive online "piracy" in the United States and other developed countries, it is not surprising to find policymakers, commentators and the general populace in less developed countries complaining about the double standards used by developed country governments and industry trade groups.

Although the discussion in this section thus far focuses on intellectual property enforcement alone, it is worth exploring further whether researchers should go beyond the intellectual property field to look at other areas of law enforcement—for example, tax collection, human and drug trafficking and illegal arms sales. To be certain, some would find this approach rather curious given the incommensurability of the different areas. After all, why should researchers compare apples with oranges? Patrick Glenn, however, provided a convincing response to this question in his leading comparative law text, *Legal Traditions of the World*:

"[H]ow do we know there is such difference if comparison has not somehow, already, taken place? Think of apples and oranges and how you can actually compare them. There are obvious criteria of roundness, acidity, colour, sweetness, price, and so on."⁹⁰

Indeed, both apples and oranges are fruits; people do compare their taste and nutritional value when deciding what fruit to eat. They are also easier to compare than, say, apples and beef (although vegetarians and vegans would do so as well).

With respect to intellectual property enforcement, researchers should therefore think about whether they should compare intellectual property enforcement challenges with other unrelated challenges that are equally widespread and systemic. For example, in the United States, serious enforcement problems exist with drug possession and trafficking and illegal arms sales. While the existence of enforcement problems in these areas does not excuse other countries from a lack of intellectual property enforcement, the discussion of these seemingly unrelated problems does allow us to better appreciate the inherent challenges in confronting problems that are widespread and systemic.

⁸⁶ "Biopiracy is seen as a new form of Western imperialism in which global seed and pharmaceutical corporations plunder the biodiversity and traditional knowledge of the developing world. Biopiracy is the unauthorized and uncompensated expropriation of genetic resources and traditional knowledge." Susan K. Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge: Cambridge University Press, 2003), p.140.

⁸⁷ Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants and Indigenous Knowledge* (Vancouver: UBC Press, 2006); Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (Cambridge, MA: South End Press, 1997).

⁸⁸ Fred von Lohmann, "RIAA v. The People Turns from Lawsuits to 3 Strikes", available at <http://www.eff.org/deeplinks/2008/12/riaa-v-people-turns-lawsuits-3-strikes> [Accessed November 8, 2010].

⁸⁹ e.g. *Metro-Goldwyn-Mayer Studios Inc v Grokster, Ltd* 545 U.S. 913 (2005); *BMG Canada Inc v John Doe* [2005] F.C. 193 (Can.); *Universal Music Austl. Pty Ltd v Sharman License Holdings Ltd* (2005) 65 I.P.R. 289 (Austl.).

⁹⁰ H. Patrick Glenn, *Legal Traditions of the World: Sustainable Diversity in Law*, 3rd edn (Oxford: Oxford University Press, 2007), p.43.

Such comparisons are beneficial for at least three reasons. First, they will raise important questions about how countries can work together to share lessons and best practices, identify common or comparable challenges and ultimately formulate the much-needed solutions to target the crux of the enforcement problems. Secondly, such comparisons will help change the tone of the intellectual property enforcement debate. If countries continue to focus only on areas where some countries have limited enforcement problems while others have very serious ones, the debate will remain an adversarial one with a tone that is closer to accusation—or worse, confrontation—than co-operation. Thirdly, such comparisons take into account the fact that intellectual property enforcement goes hand in hand with other forms of law enforcement. Because there is a significant overlap in infrastructure, personnel, training, techniques and procedures, solutions in one area of law enforcement can easily illuminate another.

It is also worth exploring whether researchers should focus narrowly on the existing intellectual property system. Should researchers go behind the present standards to think more about the ultimate goals of having a well-functioning intellectual property system—for example, economic development, promotion of creativity and innovation, diffusion of knowledge, transfer of technology or facilitation of environmental sustainability? Should researchers rethink enforcement considering the fact that many innovative ways now exist to spur creativity and innovation (including those that are not based on intellectual property protection and enforcement)? Should researchers re-evaluate the suitability of traditional intellectual property standards for stimulating creativity and innovation in countries with limited resources and a small market?⁹¹ Should researchers take into account enforcement measures that are not available in the Western world or currently enshrined in international treaties—for example, a parallel system of administrative and criminal enforcement that was challenged in the recent United States-China WTO dispute?⁹² Should enforcement be reconceptualised by taking account of *both* rights and responsibilities—for example, by focusing on abuse of rights or restraint on trade in addition to protection of right holders? If the answer to any of these questions is yes, what should researchers take into account in their comparative analyses?

Finally, commentators continue to question whether we can actually compare countries that are unique, such as Brazil, China and India. With highly uneven economic and technological developments, these countries can be as technologically proficient as developed countries, yet as economically poor on a per capita basis as many other less developed countries. Many commentators, indeed, have considered these so-called “BRIC countries” sui generis. Some commentators also noted the need to replace the focus on economic development with one on technological proficiency.⁹³ In short, the arrival of these middle-income countries has raised important questions about how researchers should undertake cross-country comparative analyses.

Intellectual property enforcement is of paramount importance to both developed and less developed countries. While the former have expressed grave concerns over the growth and spread of piracy and counterfeiting, the latter are equally concerned about the lack of protection for traditional knowledge and cultural expressions.⁹⁴ Notwithstanding these shared interests, the positions of these two groups of countries have yet to converge. If we need to get these groups to finally understand their shared interests, a greater appreciation of the challenges in developing mutually satisfactory metrics for measuring piracy and counterfeiting is badly needed.

⁹¹ Fink and Maskus, “Why We Study Intellectual Property Rights and What We Have Learned” in *Intellectual Property and Development*, 2005, p.5.

⁹² “China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights”, Report of the Panel, January 26, 2009, WT/DS362/R; Peter K. Yu, “The TRIPS Enforcement Dispute” (2011) 89 Neb. L. Rev. (forthcoming).

⁹³ Shamnad Basheer and Annalisa Primi, “The WIPO Development Agenda: Factoring in the ‘Technologically Proficient’ Developing Countries” in Jeremy de Beer (ed.), *Implementing the World Intellectual Property Organization’s Development Agenda* (Waterloo, ON: Wilfred Laurier University Press, 2009).

⁹⁴ Peter K. Yu, “Cultural Relics, Intellectual Property, and Intangible Heritage” (2008) 81 Temp. L. Rev. 433, 452–453.

Conclusion

The development of the intellectual property system has presented many challenging questions for policymakers, industry executives, commentators and academics. As the economist Fritz Machlup noted half a century ago in his critical evaluation of the US patent system:

“If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.”⁹⁵

While his timeless “inconclusive conclusion” has been widely cited and successfully captures the immense challenge to evaluating the patent system “as a whole”, commentators who quoted his words tend to omit the next, and arguably equally important, sentence:

“This last statement refers to a country such as the U.S.—not to a small country and not a predominantly nonindustrial country, where a different weight of argument might well suggest another conclusion.”⁹⁶

This omitted sentence is of critical importance to the less developed world. It speaks to the important need to tailor the intellectual property system to local needs, conditions, interests and priorities.

In addition, it is worth recalling Professor Machlup’s emphasis on “the basis of our present knowledge”. Since the negotiation and entering into effect of the TRIPS Agreement, an abundance of studies have been undertaken to examine the economic implications of higher intellectual property standards for less developed countries. There is, therefore, no denial that the state of our *present* knowledge has advanced further than what it was half a century ago.⁹⁷ If Professor Machlup was unsure about whether the patent system as a whole would benefit less developed countries when he wrote the study, his doubts have now become even clearer today, when many less developed countries are struggling to obtain access to textbooks and essential medicines and technologies.

Today, many less developed countries have failed to develop a balanced intellectual property system that is sensitive to their local needs, national interests, technological capabilities, institutional capacities and public health conditions. While the TRIPS Agreement, WIPO-administered treaties and other multilateral and regional agreements have laid down the minimum standards for intellectual property protection and enforcement, they say very little about whether those standards, in fact, have struck an optimal balance for participating countries.

Worse still for less developed countries, the older international treaties, such as the Paris and Berne Conventions, were all legacy agreements that were established during the colonial era with very limited participation from these countries.⁹⁸ While the later agreements were more inclusive, they were at best uneasy political compromises between developed and less developed countries.⁹⁹ The TRIPS Agreement, for example, involved a complex cost-benefit calculus involving a large number of trade items. Some less

⁹⁵ Fritz Machlup, *An Economic Review of the Patent System* (Washington, D.C.: Subcommittee on Patents, Trademarks, and Copyrights, Senate Committee on the Judiciary, 1958), p.80.

⁹⁶ Some of the rare exceptions are the UK Commission on Intellectual Property Rights, Hazel Moir and David Vaver. Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy*, 2002, p.16; Hazel V.J. Moir, “Are Gene Patents Good for Us?”, Submission to the Senate Community Affairs Committee, available at http://www.aph.gov.au/senate/committee/clac_ctte/gene_patents/submissions/sub20.pdf [Accessed November 8, 2010]; David Vaver, “General Introduction” in *Intellectual Property Rights: Critical Concepts in Law* (London: Routledge, 2006), Vol.1, p.15.

⁹⁷ Michele Boldrin and David K. Levine, *Against Intellectual Monopoly* (Cambridge: Cambridge University Press, 2008), pp.243–244.

⁹⁸ Ruth L. Okediji, “The International Relations of Intellectual Property” (2003) 7 *Sing. J. Int’l & Comp. L.* 315, 323–325; Peter K. Yu, “International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia” [2007] *Mich. St. L. Rev.* 1, 3–5.

⁹⁹ On the origins of the TRIPS Agreement, see Daniel Gervais, *The TRIPS Agreement: Drafting History and Analysis*, 3rd edn (London: Sweet & Maxwell, 2008), pp.3–27; Jayashree Watal, *Intellectual Property Rights in the WTO and Developing Countries* (The Hague: Kluwer Law International, 2001), pp.11–47; Yu, “TRIPS and Its Discontents” (2006) 10 *Marq. Intell. Prop. L. Rev.* 369, 371–379.

developed countries have also complained about the coercive pressures from developed country governments, industry trade groups and multinational corporations as well as their rather limited knowledge at that time of the full implications of high intellectual property standards, especially in relation to other issue areas. A greater empirical evaluation of the existing international intellectual property system, therefore, deserves our urgent empirical attention.

To open up this second volume, we are very fortunate to have a number of distinguished scholars to guide us through the analysis of some highly complex economic questions. Although lately the economics of intellectual property have received considerable policy and scholarly attention in developed countries and at the international intergovernmental level,¹⁰⁰ rigorous economic analysis and empirical assessment remain wanting in many less developed countries, not to mention the continuously limited pool of home-grown economists that have intellectual property-related expertise. I hope you will find this special issue timely, informative and stimulating, and I strongly encourage you to explore the economic underpinnings and empirical basis of both the domestic and international intellectual property systems.

¹⁰⁰ e.g. *Intellectual Property and Development*, 2005; Greenhalgh and Rogers, *Innovation, Intellectual Property, and Economic Growth*, 2010; Maskus, *Intellectual Property Rights in the Global Economy*, 2000; Scotchmer, *Innovation and Incentives*, 2006; World Intellectual Property Organization, *The Economics of Intellectual Property*, 2009.