



PREFERENČNÉ OBCHODNÉ DOHODY A PRÁVA DUŠEVNÉHO VLASTNÍCTVA: NEPRESKÚMANÉ PROBLÉMY

PREFERENTIAL TRADE AGREEMENTS AND INTELLECTUAL PROPERTY RIGHTS: UNEXPLORED ISSUES

*Keith E. Maskus*¹

Jedna z menej známych, avšak dôležitých črt súčasných preferenčných obchodných dohôd je špecifikácia presných štandardov ochrany práv duševného vlastníctva. Predkladaný článok zhodnocuje rozsah týchto politík na príklade preferenčných obchodných dohôd vynegociovaných Spojenými štátmi americkými a Európskou úniou s rozvojovými štátmi. Ekonomovia a experti v oblasti medzinárodných vzťahov nevenovali dosiaľ dôvodom súčasných zmien prakticky žiadnu analytickú pozornosť, rovnako ako neštudovali ani ich socioekonomické dôsledky. Článok sa venuje niekoľkým oblastiam, v ktorých by detailnejšia analýza priniesla významné pokroky v našom chápaní súčasných trendov.

Kľúčové slová: preferenčné obchodné dohody, práva duševného vlastníctva, TRIPS, Transpacifické partnerstvo, zemepisné označenia, patent.

One of the lesser-known, but important, features of recent Preferential Trade Agreements (PTAs) is the specification of rigorous standards of protection for intellectual property rights (IPRs). This paper reviews the extent of these policies in PTAs negotiated by the United States and the European Union with developing countries. Economists and scholars of international relations have paid virtually no analytical attention to the reasons for these changes, nor have they studied their socioeconomic impacts. Several areas are

¹ Keith E. Maskus. University of Colorado Boulder, UCB 256, Boulder, CO 80309, United States of America, e-mail: keith.maskus@colorado.edu.

Keith E. Maskus is Arts and Sciences Professor of Distinction at the University of Colorado, Boulder, USA. He has been a Lead Economist in the Development Research Group at the World Bank. He is also a Research Fellow at the Peterson Institute for International Economics and serves also as a consultant for the World Trade Organization and the World Intellectual Property Organization. Maskus received his Ph.D. in economics from the University of Michigan in 1981 and has written extensively about various aspects of international trade.

discussed in which detailed analysis would do much to advance our understanding of this important trend.²

Key words: preferential trade agreements, intellectual property rights, TRIPS, Trans-Pacific Partnership, geographical indications, patent.

JEL: O34

1 INTRODUCTION

A major reformulation of required protection of intellectual property rights (IPR) was begun with the foundation in 1995 of the World Trade Organization (WTO), which featured, as one of its primary outcomes, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). The TRIPS Agreement sets out numerous areas in which WTO members must adopt minimum standards for protecting and enforcing patents, trademarks, copyrights, plant variety rights, and related IPR.³ It also brings IPR into the WTO's dispute settlement mechanism, marking the first time in history that government policies in this area are potentially subject to binding international enforcement. Along with fact that WTO membership is now nearly universal, these features have greatly expanded the global scope and coverage of IPR. Indeed, this policy multilateralization has proceeded far beyond that in any other significant element of "behind the border" business regulation, such as competition policy, labor rights, and fiduciary standards in banking and finance.

One might imagine that such changes would meet the needs of economic interests favoring strong global IPR standards, such as research-intensive biochemical and pharmaceutical firms, major digital content providers, software companies, and developers of new environmental technologies. However, perhaps because there has been little progress since 1995 in negotiating additional trade and IPR rules at the WTO, with its moribund Doha Development Round nearly abandoned, these interests have moved elsewhere to push further policy reforms. The two primary areas in which this has happened are bilateral investment treaties (BITs), which offer strong investor guarantees to IPR owners, and preferential trade agreements (PTAs), which increasingly feature "TRIPS-Plus" requirements for increasing the scope and enforcement of IPR (Roffe and Spennemann 2006, Maskus 2012a). Thus, for example, in several recent PTAs negotiated by the United States and the European Union, the intellectual-property chapters embody elevated protection against generic competition in medicines, stricter limits on the ability to download and experiment with digital goods, and stronger enforcement expectations. As noted below, this trend continues

² I am grateful to Martin Grancay for inviting me to the 2014 Conference on International Relations organized by the Faculty of International Relations at the University of Economics in Bratislava.

³ For extensive discussion see Maskus (2012a) and Deere (2009).

even more strongly in the Trans-Pacific Partnership (TPP) Agreement between the United States and several countries in Latin America and East Asia.

Table 1: Changes in the GP Patent-Rights Index

<i>Income level</i>	<i>1990</i>	<i>2000</i>	<i>2010</i>	<i>% rise</i>	<i>Sample</i>
LI	1.72	2.24	2.67	55	33
LMI & MI	1.54	2.91	3.30	115	44
UMI	2.01	3.36	3.84	91	13
HI	3.33	4.33	4.40	32	24
<i>Countries</i>	<i>1990</i>	<i>2000</i>	<i>2010</i>	<i>% rise</i>	
India	1.03	2.27	3.76	264	
China	1.33	3.09	4.21	216	
South Africa	3.03	3.75	3.88	28	
Brazil	1.28	3.43	3.43	169	
Mexico	1.02	3.22	3.75	266	
South Korea	3.69	4.13	4.33	17	
Taiwan	1.26	3.29	3.74	198	
Singapore	2.04	4.01	4.21	106	
Israel	2.78	3.96	3.96	43	
Hungary	2.12	3.88	4.33	105	
Portugal	1.67	3.96	4.33	474	
Jordan	0.58	2.70	3.30	160	
Japan	3.88	4.67	4.67	20	
USA	4.68	4.88	4.88	4	

Notes: LI (low income) covers countries with 2003 GNI per capita (PPP) less than \$2,500. LMI (lower middle income) and MI (middle income) covers the income range \$2,500 to \$11,000. UMI (upper middle income) covers the income range \$11,000 to \$20,000. HI (high income) covers countries with 2003 GNI per capita (PPP) greater than \$20,000.

Source: Computed by the author from Ginarte and Park (1997) and updated figures; World Bank (2005).

As noted in Table 1, which depicts changes since 1990 in a well-known index of the strength of national patent laws, the impact has been to sharply increase the protection of IPR across the world, especially in low-income and middle-income

developing economies.⁴ Thus, for example, the sample of lower-middle-income (LMI) and middle-income (MI) countries more than doubled the legal protection of patent rights over two decades. India, China, Taiwan, and Brazil all adopted major reforms in this period. Most illustrative of the impact of PTAs are the changes in Mexico, which had to adopt much stronger standards because of the North American Free Trade Agreement (NAFTA), Jordan, which entered into a free-trade agreement with the United States in 2001, and Portugal, which needed to harmonize its IPR regime after acceding to the EU.

Implementing these changes has been controversial, particularly in developing countries where the potential gains from stronger IPR, whether in growth in domestic innovation or inward technology transfer, could be accompanied by significant increases in costs of imitating technologies, gaining access to medicines and new agricultural varieties, and managing IP-related competition issues (Cimoli et al. 2014). Credible econometric studies to date find considerable evidence that technology flows have expanded to the middle-income economies, if not the small and poor economies.⁵ However, there is little indication of growing innovation beyond a few rapidly industrializing countries, nor is there much evidence of additional R&D in technologies of particular need in poor countries, such as essential medicines and specific environmental goods. Overall, the jury remains out on the likely economic effects.

A remarkable fact is that, despite their potentially great importance, economists have so far completely ignored the role of BITs and PTAs and their interactions with IPR, in both theoretical and empirical treatments. This lacuna seems to stem from the facts that the questions are difficult to analyze and data are scarce. However, the area is ripe for economic research, as I discuss in this overview paper. Thus, in the next section I review briefly the major IPR policies engineered in recent PTAs. In the third section I outline some institutional and policy issues that should be addressed analytically in order to work out basic tradeoffs that emerge in setting IPR standards within regional trading preferences. I also set out some empirical questions that could be usefully studied in this regard, suggesting that the joint impacts of PTAs and IPR reforms on trade could be substantial. I offer final remarks in the concluding section.

2 POLICY CHANGES AND ANALYTICAL QUESTIONS

It is of interest to describe the most important IPR requirements set out in recent trade agreements. An important point is that PTAs mandating TRIPS-Plus standards overwhelmingly involve a major developed economy, such as the United

⁴ These data refer to the Ginarte-Park (GP) index, which has been widely used to characterize patent reforms and assess their impacts. See Ginarte and Park (1997) for a full explanation.

⁵ A review of such studies is in Maskus (2012a).

States or the European Union, and one or more small developing economies, a situation we might call a North-South agreement. The former countries have a strong export orientation in IPR-intensive goods and are home to the headquarters of technologically sophisticated multinational firms, while the latter largely import such goods and are net recipients of FDI. Such developing countries would not ordinarily choose to strengthen their IPR regimes beyond TRIPS. The fact that they do so within the context of PTAs suggests they hope to gain market access and more inward FDI flows, even as they risk higher costs to acquire new goods. This is the fundamental international tradeoff linking IPR reforms to membership in PTAs.

United States

To illustrate, Table 2 sets out the primary TRIPS-Plus requirements established in seven recent PTAs involving the United States.⁶ The United States prefers that countries provide extensions to patent coverage and scope in several ways. One is to narrow the exclusions from patentability and, in particular, to extend eligibility to life forms, including genetic sequences and biotechnological research tools. In five of seven cases the agreement includes a commitment by the U.S. trading partner or partners to enact patent protection for higher-order life forms, going beyond the requirement in TRIPS Article 27.3(b). Plant varieties are another area in which patents could be provided, which happened in Chile, Morocco, and Peru, while members of the Central American Free Trade Agreement, which includes the Dominican Republic (CAFTA-DR) are committed to using best efforts to implement plant patents.⁷ However, in some PTAs the partner countries have been asked to join the International Union for the Protection of Plant Varieties, known by its French acronym, UPOV. The current version of this treaty is UPOV 1991, which permits limited exceptions to the breeder's exclusive rights.

⁶ This table is taken from Maskus (2012a), which offers additional discussion.

⁷ These practices were already in Australian law.

Table 2: A Comparison of TRIPS-Plus Elements in Selected U.S Free Trade Agreements

<i>Agreement</i>	<i>Date into force</i>	<i>Patents eligibility</i>	<i>Pharma term extension</i>	<i>Pharma 2nd use</i>	<i>Generic ban</i>	<i>Working</i>
Jordan	December 2001	Life	Yes	Yes	Notification	Imports
Chile	January 2004	Life	Yes	No	Yes	TRIPS
Singapore	January 2004	Life	Yes	No	Yes	TRIPS
Australia	January 2005	Life	Yes	Yes	Yes	Imports
CAFTA-DR	2005-2009 ^a	TRIPS	Yes	No	Yes	TRIPS
Morocco	January 2006	Life	Yes	Yes	Yes	TRIPS
Peru	Signed April 2006	TRIPS	Yes	No	Yes ^b	TRIPS
<i>Agreement</i>	<i>C License</i>	<i>Test Data</i>	<i>Plant Varieties</i>	<i>Parallel Trade</i>	<i>CR Term</i>	
Jordan	Restricted	Equal	UPOV 1991	No	TRIPS	
Chile	TRIPS	5 + 10	Patents	TRIPS	L+70, 70	
Singapore	Restricted	5 + 10	UPOV 1991	TRIPS	L+70, 70	
Australia	Restricted	5 + 10	Patents	No (Patents)	L+70, 70	
CAFTA-DR	TRIPS	5 + 10	UPOV 1991; commit to patents	TRIPS	L+70, 70	
Morocco	TRIPS	5 + 10	Patents	No (Patents)	L+70, 70	
Peru	TRIPS	5 + 10	Patents	TRIPS	L+70, 70	
<i>Agreement</i>	<i>Software</i>	<i>Digital CRs</i>	<i>Anti-circumvention</i>	<i>Exceptions</i>		
Jordan	TRIPS	WCT, WPPT	Yes	TRIPS		
Chile	TRIPS	WCT, WPPT	Yes	Limited ^c		
Singapore	TRIPS	WCT, WPPT	Yes	Limited		
Australia	TRIPS	WCT, WPPT	Yes	Limited		
CAFTA-DR	TRIPS	WCT, WPPT	Yes	Limited ^c		
Morocco	TRIPS	WCT, WPPT	Yes	Limited		
Peru	TRIPS	WCT, WPPT	Yes	TRIPS		

Notes: ^aCAFTA-DR was signed into law in the United States in 2005 and was implemented in other member countries at various times between 2006 and 2009. ^bPeru must prevent generic entry but offer entrants the chance to oppose validity of the patent in force. ^cChile and members of CAFTA-DR have greater flexibility than those in other “limited” FTAs to permit copyright exceptions in software de-compilation, research, education, and government use.

Source: Maskus (2012a).

A key US demand for partners is to provide patent-term extensions for drugs and agricultural chemicals in cases where health authorities issued marketing approvals with undue delays, a provision that exists in all seven PTAs. Another is for authorities to grant “second use patents”, or protection to existing drugs that are shown to be effective in treating indications beyond that in the initial claims. This provision exists in three of the seven PTAs. Yet another is to restrict experimental use of patented materials and ban their use by generic drug-makers.

A sharp TRIPS-Plus restriction requires health authorities to ban the registration of any generic drugs during the lifetime of a patent. Specifically, this linkage precludes approval of any generic entry until the drug regulatory authority could certify that no patent would be violated by it. Table 2 shows that for Jordan the requirement is only that the patent owner be notified of the identity of any firm asking for marketing approval of a generic during the patent term. This provision was upgraded to a ban on generic entry in the agreements with Chile, Morocco, Singapore, CAFTA-DR, and Peru.

An important issue is protection against unfair use of confidential test data submitted for marketing approval in chemicals and pharmaceuticals. The United States has exported its standard of five years for medicines and ten years for agricultural chemicals in all seven cases. Thus, during these periods exclusive marketing rights exist in such circumstances, even if a patent is not ultimately granted. This policy also effectively extends patent rights in cases where they are granted, if marketing approval comes late in the patent period.

There are also differences in the PTAs as regards the legality of parallel imports, or goods brought into a country without the approval of the patent or copyright owner. Jordan agreed to make such imports illegal in copyright-protected goods, while Australia and Morocco did so for patented products. Australia remains open to parallel imports in copyrighted goods. The remaining PTAs do not address the issue and therefore adopt national discretion as provided in TRIPS Article 6.

Turning to copyrights, the United States has consistently negotiated a term of protection of life plus 70 years for authors and composers and 70 years for works of corporate or institutional authorship. These terms exceed the TRIPS protection periods of life plus 50 years and 50 years, respectively. As for digital goods, the basic level of protection arises from a pair of treaties negotiated at the World Intellectual Property Organization (WIPO). These agreements are the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonogram Treaty (WPPT), known together as the “Internet Treaties”. Each PTA partner is required to ratify these accords, which require countries to enact laws against circumvention of technological controls and digital rights management. The treaties also call for copyright protection for performers, broadcasters and of cross-border rights in satellite transmissions. Regarding limitations

and exceptions to copyrights, such as fair use, the United States negotiated tighter disciplines than those in TRIPS in five of seven cases.

The European Union

The European Union also bases its current trade policy on bilateral trade agreements. It has reached Partnership Agreements, Association Agreements, and traditional PTAs with nearly 30 countries, including numerous developing nations in the Middle East, North Africa, Eastern Europe, East Asia, and Latin America.⁸ A major priority is to expand international protection of selected European geographical indications (GIs), which are exclusive rights to use a place name that ties a good to its origin in a particular location. These rights generally accrue to wines and spirits but increasingly are being used around the world to designate high-quality and distinctive food products, apparel, and other goods.

In the PTAs it negotiates, the EU asks for protection of selected GIs that is equivalent to its own high levels. In its early agreements with significant wine-making and spirits-producing nations, including Australia in 1994, Chile (2002), Mexico (1997) and South Africa (1999), the EU achieved effective equivalence. Each partner country must protect GIs at a level that follows the systems in the countries where the products originate. Thus, countries must overturn and deny the use of trademarks that replicate European GIs and must phase out the use of generic geographical terms, such as champagne or port. This approach continued in more recent agreements with Caribbean countries, Ecuador, and Peru and Colombia, among others. In contrast, TRIPS permits continued good-faith use of generic names and trademarks that are similar to GIs if they had already been on the market.

Partners in EU PTAs must provide this protection on a reciprocal basis, effectively requiring automatic registration of EU-certified GIs rather than a local examination process consistent with TRIPS. These nations also must reserve use of the listed names exclusively for the products originating in the partner countries where they were originally registered. Finally, countries must protect “traditional expressions” associated with the production of wines and spirits, such as Reservas, Tawny, Grand Cru, and Eiswein.

Except for GIs, earlier EU agreements said little about IPR, generally asking partners to offer non-discriminatory access to protection and adhere to a number of international conventions. More recently, EU negotiators have sought considerably greater protection in copyrights, pharmaceutical patents, confidential test data, and plant varieties. Thus, agreements with Jordan, Tunisia, Morocco, Mexico, Bangladesh, South Korea, Egypt, Algeria, Lebanon, and Syria require partners to join several

⁸ See http://ec.europa.eu/trade/policy/countries-and-regions/agreements/#_europe. Horn et al. (2010) and Drexler et al. (2014) offer detailed discussion.

specialized copyright and plant IPR conventions. The South African agreement requires patents in biotechnological inventions. Similar requirements were entered into draft agreements with certain ASEAN nations, along with patent-term extensions and data exclusivity. In early 2011 the EU Parliament approved an FTA with South Korea that calls for both patent extensions and ten-year data protection.

Notably, the EU has had little success in achieving TRIPS-Plus standards in its ongoing negotiations with India on a bilateral PTA. Because it sees them as means of protecting traditional agriculture, India has agreed to strong protection for GIs. However, it has not agreed to patent-term extensions, protection of test data, or rigorous protection of plant varieties. Neither has it accepted the EU's *sui generis* protection system for databases.

Trade preferences and BITs

The United States and the EU also tie their trade preferences and bilateral investment treaties to IPRs. Thus, effective intellectual property protection is expected of developing countries hoping to benefit from trade preferences in the US market. For example, Colombia and Peru are beneficiaries of the American generalized system of preferences and the Andean Trade Promotion and Drug Eradication Act. All of these laws impose high standards for IPRs. As for BITs, both the United States and the EU now generally include provisions treating IPRs as equivalent to other forms of property owned by investors in partner countries (Maskus 2012b). Thus, investors may deploy their IPR as they wish under all legal provisions, non-discrimination requirements, and investor arbitration procedures essential to BITs.

The Trans-Pacific Partnership (TPP)

The TPP, currently in its late stages of negotiation, is a potential trade and investment agreement among 12 countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam. It is often referred to as the first “mega-regional PTA” in that it involves trade preferences among many countries across three continents at considerably different levels of economic development. The draft agreement features, among other things, considerable tariff liberalization, potential cuts in agricultural support and service trade barriers, safeguards for environmental and labor standards, and investor guarantees similar to those in BITs.⁹

Most relevant here is that the TPP, if it accepts language favored primarily by the United States, would embody several TRIPS-Plus standards in intellectual property, including many that go beyond those appearing in prior PTAs. The most significant of

⁹ It is difficult to characterize the TPP precisely because it was negotiated in confidence and the text has not been formally released to the public.

these are as follows.¹⁰ First, the TPP would extend patent eligibility to areas not mandated by TRIPS or most PTAs, including surgical, therapeutic, and diagnostic methods and plants and animals. It also would require patents for new uses of existing products or methods, even if the new use does not enhance the efficiency of the product. These requirements would significantly expand the scope of patents in the region, since relatively few TPP participants have such laws. Second, the TPP language on digital copyrights would require strong protection against unauthorized downloading, even in the form of temporary copies, to an extent that exceeds even American law. It would state that anti-circumvention measures to defeat digital rights protection, even if done without knowledge, are illegal. TPP also sets the minimum term of copyright to life plus 70 years.

Third, TPP would affirm that GIs may be protected as basic trademarks, which is the US standard, rather than be subject to the specific rules of TRIPS and the EU PTAs. Fourth, new obligations would exist for countries with respect to civil and criminal enforcement of intellectual property. Criminal sanctions must be available against willful copyright and trademark infringement on a commercial scale, even if it was done for reasons other than financial gain. Finally, the judicial systems of member countries must provide for preliminary injunctions against suspected infringers within specific time limits, such as ten days. Both the existence of such injunctions, and the associated time limits, will be new in the legal systems of some developing countries in the TPP. Even the United States has no such time limits in its rules regarding injunctions.

In short, the TPP would go well beyond TRIPS and even the TRIPS-Plus approach in recent PTAs. One evident US strategy is to set a high baseline for IPR protection in the Asia-Pacific region, with the ultimate intention of holding China to those same standards.

3 ANALYTICAL QUESTIONS

This overview suggests a number of tentative lessons to be drawn about trade agreements and IPR. First, the major industrialized economies, typified by the United States and the EU, now focus their efforts on negotiating additional PTAs rather than pursuing the multilateral route in the WTO. One obvious reason is that it is easier to achieve more regulatory harmonization when negotiations take place between a limited number of countries and there is an asymmetric size relationship. Second, despite a generally similar menu of IPR policy options, there remains significant variation across PTAs in available standards. Third, the number of PTAs with elevated IPR standards continues to rise and, increasingly, is focused on “mega-regionals” such as the TPP.

¹⁰ These comments are summarized from a 2013 WikiLeaks publication of the confidential IPR chapter. Since there has been no subsequent release this description may be outdated.

All of these facts are interesting and raise analytical questions that economists and international relations scholars could fruitfully address. I highlight some of those questions in the following paragraphs.

Political economy

The inability to date of the EU to conclude a PTA with India points up an interesting fact. When it comes to intellectual property, major countries in the North have had considerably greater success negotiating stronger rights in PTAs with small nations in the South than with large countries. A similar example is that the United States has not been able to entice Brazil into a PTA, in part because Brazil, like India, strongly prefers to set its own IPR standards and limitations.

This observation suggests that it would be interesting to study the conditions under which developing countries agree to enter into PTAs with IPR chapters that establish much higher standards than they would likely select on their own. The answer could be as simple as a willingness to swallow these requirements in the context of a larger agreement offering more market access in major trading partners. Trade authorities may also see within-PTA IPR reforms as a means of signaling to multinational firms that their technologies and know-how would be safe from imitation and expropriation, perhaps distinguishing their economies from other developing nations. These arguments seem too simple, however, for at least two reasons. First, PTAs rarely offer significant additional market access in the North, where trade barriers are already low. Second, developing countries could choose on their own to offer stronger IPR standards, and achieve the associated signaling gains, but few do so in the absence of a North-South PTA.

At the other end, we could ask how the Northern country seeking stronger IPR standards selects potential negotiating partners in the South. Presumably, there are broader economic and strategic factors in these decisions than the desire to reform intellectual property rights, including geographical proximity, factor endowments, and foreign relations. Still, one might wonder why the United States would pursue a PTA with Jordan and not with Lebanon, or why the European Union would select Peru and Colombia but not Bolivia. In many cases, but by no means all, the partner countries are more likely to have domestic imitative capacities that make their companies stronger competitive threats under weaker IPR regimes. If so, PTA selection is a form of strategic trade policy. Part of the answer might be an attempt to install stronger regulatory systems, including in IPR, in countries that act as local policy leaders, with the potential for these higher standards to spill over into reforms in third countries as a competitive matter. Whether these spillovers exist has not been studied and doing so could yield important insights. Overall, then, a close study of the endogenous

formation of North-South PTAs with strong IPR chapters would shed light on these basic questions.

Effective discrimination

The fact that standards for protecting IPR differ among trade agreements raises a number of interesting economic and legal questions that have been little addressed in the literature. One might be concerned that variable IPRs across PTAs raises the potential for economic discrimination, in which firms from partner countries receive improved regulatory treatment in IPR than do firms from non-member nations. At a legal level, this is unlikely because PTAs are obliged to set IPR standards that do not discriminate among all WTO members. Thus, the PTAs pursued by both the United States and the EU adopt clauses ensuring both national treatment and the most-favored-nation (MFN) principle, with both applying to all WTO countries. Indeed, the TRIPS Agreement contains no GATT Article 24-like exception to non-discrimination in IPR and so formal differences in treatment would be subject to challenge. It is worth noting that this requirement implies that each PTA with a substantive IPR chapter has the effect of ratcheting up effective global protection standards.

Nonetheless, it is worth thinking about effective economic discrimination. The problem relates to the second-best nature of both IPR and regional trade and investment preferences. The essence of PTAs is to discriminate in commercial policies, which can generate both economic efficiency and waste. In this context, the economic discrimination within PTAs could generate sub-optimal decisions about where firms might deploy their intellectual property assets. It is possible to theorize about the possibility of *intellectual property creation* (IPC) versus *intellectual property diversion* (IPD) (Maskus 1997). The former takes place when more intellectual property is created and marketed within a TPA, strictly due to the expansion of markets and the replacement of inefficient technology developers (e.g., those local to developing-country partners) with efficient ones (e.g., those from the EU). More integrated markets could also help rationalize technology, R&D, and product-development decisions across PTA members, though with the asymmetries inherent in North-South agreements the potential for diffusing such processes to poorer partners seems limited.

Intellectual property diversion occurs to the extent that fewer inventions, creations, and new products owned by firms in non-member nations are marketed within a given PTA. This could take the form of reduced demand for those firms' products, reduced incentives for non-members to innovate products of regional interest, reductions in FDI coming from outside the PTA, and market-based exclusions of such firms from local technology partnerships and joint ventures. All of this could occur, even if the legal standards are non-discriminatory. No economists have begun to study this important question of the balance between IPC and IPD.

Policy inconsistency

A remarkable feature of many PTAs mentioned in this article is that individual countries have signed multiple agreements that have mutually inconsistent IPR standards. That is, the expectation of how a particular piece of intellectual property would be registered and protected may vary across agreements. For example, the US agreements with Peru and Colombia mandate that geographical indications may be protected as trademarks and collective marks, which as noted above is a less rigorous approach. The corresponding EU agreement with the same nations requires that GIs be protected along the lines of the much stronger standards in Europe. In most circumstances this difference may not be important for firms can choose the mode of protection. Inevitably, however, circumstances will arise in which a product that could infringe a protected GI is registered as a trademark, with considerable legal uncertainty attached to its status. Moreover, a product could be protected under one system in one PTA member and under another in a second member, presumably with no limitation on trade between them. Would infringement occur under these circumstances and how would it be defined?

Similar inconsistencies may arise with respect to patenting standards for genetic resources and the scope of allowable exceptions and limitations to copyrights, since both issues are treated differently in various PTAs to which a country may be party. At present there is no evident way to reconcile these differences, though legal scholars argue that the stronger protection standard would prevail. The difficulty here is that there is no objective means of determining which standard is stronger: trademarks and GIs are different mechanisms but one is not necessarily more protective than the other. This issue will need to be sorted out in the courts of each country but solid legal analysis could contribute to its resolution.

Interrelationships between trade policy and IPR

An essential question, to which no analytical or empirical efforts have been applied to date, relates to whether trade policies and IPR reforms complement or offset each other, and whether these interrelationships are mutually efficient or generate enhanced distortions. One example was discussed above, the possibility that non-discriminatory IPR standards could still generate effective discrimination in the presence of PTAs. Trade economists have focused their attention on the trade and investment effects of PTAs, measuring the impacts of tariff cuts on cross-border economic activity and welfare. This analysis has proceeded with little reference to accompanying changes in regulatory policy, such as technical product standards and IPR. On the other side, empirical studies to date focusing on intellectual property reforms and trade have proceeded virtually without reference to PTAs, despite the fact that those rules are often the result of participation in trade agreements.

This segmentation is surprising, given the clear possibility that trade policy and IPR reforms may have complementary or substitutable impacts going beyond their separate contributions. To date there is very little analytical work linking trade liberalization to optimal patent policy, though they interact in both a strategic sense and in terms of economic efficiency. Nor are there studies of how tariff cuts or investment liberalization interact with IPR. This is a considerable shortcoming in the trade literature and numerous opportunities exist to push this knowledge frontier forward. Following are three illustrative areas of research.

First, measures of intellectual property protection could be incorporated into both econometric studies linking trade liberalization to trade and FDI flows. The simplest approach would be to interact variables capturing IPR with membership in PTAs or BITs to see if there are joint effects and whether these differ by type of agreement and industry. A more comprehensive study would link IPR to the costs of engaging in bilateral trade in a structural gravity equation, with the primary idea being to ask whether patent reforms affect fixed or variable costs of trade and the extent to which impacts interact with tariff cuts and PTA membership.

Second, it is important to move beyond estimating the effects of PTAs on trade and investment to understanding impacts on innovation and technology transfer, as measured by detailed intellectual property statistics. There could be significant joint effects of trade preferences, investment policies and IPR reforms that would alter both trade and patenting decisions. While it has not yet been done, studying the joint impact of PTAs on trade in goods and patent applications and citations would spark considerable interest.

Third, it would be interesting to investigate whether trade policy and IPR interact as strategic complements or substitutes, and whether this relationship is different within PTAs. These relationships likely vary across industries and working to understand them would open new questions about the potential effects of PTAs on trade and investment creation and diversion. It would also be useful to study whether the fact that some countries are members of multiple PTAs, with potentially inconsistent IPR rules, may limit their efficiency gains from trade and also affect innovation prospects.

4 CONCLUDING REMARKS

As documented here, the last twenty years have witnessed a major change in the scope of global IPR policies. These changes are primarily the result of various trade agreements, starting with TRIPS but including many preferential trade arrangements and bilateral investment treaties, which continue to proliferate. The latter process, of mandating IPR reforms in North-South PTAs, has advanced very far and yet essentially has escaped the attention of international relations scholars and analytical

economists. This is a remarkable oversight given the potential importance of the underlying policy changes for economic development, public health policy, and trade.

What few studies we have to date have barely scratched the surface of the structural questions about which we would like to have solid evidence. Why are particular trading partners selected to negotiate PTAs and are the adopted IPR standards appropriate for their needs? Are the inconsistencies in legal standards, even within a country that signs multiple PTAs, likely to be a source of uncertainty that could limit investment and efficiency? What are the interrelationships between PTAs, BITs, and IPR reforms? What are the business channels that matter in establishing these relationships? These, and many others like them, are critical questions that need to be investigated and I hope that scholars in both political science and economics will accept that challenge. Our degree of ignorance is currently too great to offer meaningful advice on the wisdom of this increasing tendency to link trade preferences with intellectual property rights and related regulatory issues.

REFERENCES:

1. CIMOLI, M. – DOSI, G. – MASKUS, K. E. – OKEDIJI, R. L. – REICHMAN, J. H. – STIGLITZ, J. E. (eds.) (2014): *Intellectual Property Rights: Legal and Economic Challenges for Development*. Oxford: Oxford University Press, 2014.
2. DEERE, C. (2009): *The Implementation Game: The TRIPS Agreement and the Global Politics of Intellectual Property Reform in Developing Countries*. Oxford: Oxford University Press, 2009.
3. DREXL, J. – GROSSE RUSE-KHAN, H. – NADDE-PHLIX, S. (eds.) (2014): *EU Bilateral Trade Agreements and Intellectual Property: For Better or Worse?* Berlin: Springer-Verlag, 2014.
4. GINARTE, J. C. – PARK, W. G. (1997): Determinants of Patent Rights: A Cross-National Study. In *Research Policy*, 1997, Vol. 26, No. 3, pp. 283-301.
5. HORN, H. – MAVROIDIS, P. C. – SAPIR, A. (2010): Beyond the WTO? An Anatomy of US and EU Preferential Trade Agreements. In *The World Economy*, 2010, Vol. 33, No. 11, pp. 1565-1588.
6. MASKUS, K. E. (1997): Implications of Regional and Multilateral Agreements for Intellectual Property Rights. In *The World Economy*, 1997, Vol. 20, No. 5, pp. 681-694.
7. MASKUS, K. E. (2012a): *Private Rights and Public Problems: The Global Economics of Intellectual Property in the 21st Century*. Washington DC: Peterson Institute for International Economics, 2012.
8. MASKUS, K. E. (2012b): Technology Transfer: Regulatory Issues and International Investment Agreements. In DRABEK, Z. – MAVROIDIS, P. C.

- (eds.): *Regulations of Foreign Investment: Challenges to International Harmonization*. Singapore: World Scientific Publishing, 2012, pp. 277-306.
9. ROFFE, P. – SPENNEMANN, C. (2006): The Impact of FTAs on Public Health Policies and TRIPS Flexibilities. In *International Journal of Intellectual Property Management*, 2006, Vol. 1, No. 1-2, pp. 75-93.