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THE BUSINESS OF INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT: DID THE WTO GET IT RIGHT?

Lobbies of the so-called knowledge industry and brand-based business succeeded in introducing strict protection of intellectual property rights (IPRs) into the World Trade Organization (WTO). However, it is often questioned whether the resulting WTO Agreement on Trade-related Intellectual Property Rights (TRIPS), as it stands, may serve development objectives. This article (i) presents the interplay of business and pro-development forces during the multilateral trade negotiations, (ii) evaluates the impact of the TRIPS agreement, (iii) reports on the current South-North conflicts of interest in the trading system and (iv) suggests that the positive business incentives for companies in low-income economies – rather than stricter rules and policies based on threats – might constitute a more effective users in developing nations.

Keywords: Copyrights, Doha Round, economic development, innovation, intellectual property, lobbies, public health, trademarks, traditional knowledge, patents, TRIPs Agreement, WTO

1. INTELLECTUAL PROPERTY RIGHTS AND THE INTERESTS OF DEVELOPING COUNTRIES

Intellectual property (IP) is information with economic value. Property rights to intellectual assets span those ideas, inventions and creative expressions on which there is a public willingness to bestow the status of property (Sherwood, 1990). Intellectual property rights cover industrial property, copyrights and neighbouring rights. Industrial property principally concerns protection of inventions through patents and trademarks. The subject matter of copyright is usually described as literary and artistic work. "Neighbouring rights" are the rights of performers, broadcasters, and others who do not author works, but play an important role in communicating them to the public.

The rationale for government protection of IPRs depends on the type of the intellectual property concerned. The first category of IPRs comprises

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knowledge goods such as copyrights and neighbouring rights, patents or industrial designs, i.e., goods which are the result of research and development (R&D) – as distinguished from knowledge goods, trademarks and marks of origin which are essentially aimed at product differentiation useful in performing marketing functions (Kapferer, 1991; Leduc, 1990).

Knowledge is a public good in that the stock of knowledge is not reduced with its use and, therefore, the marginal cost of defusing knowledge is zero. This means that – at least from a static efficiency perspective – knowledge goods should be free goods. However, the latter perspective does not take into account that innovation requires R&D efforts and that with a zero price, investors would have no incentive to pay for R&D activities. A zero price is therefore socially sub-optimal in a dynamic perspective. There is empirical evidence to suggest that protection of intellectual property is needed not so much to promote inventions (many of which would take place without protection) but to offer incentives to R&D which turn pure knowledge into products or production processes (i.e., innovations). The extent of protection afforded to innovations has therefore an impact on investment in R&D.

Copyrights or patents grant an author or inventor a temporary monopoly over the reproduction of a work or the use of the innovation concerned. The monopoly rents enable higher profit, providing an incentive for knowledge creation. IPRs also contribute to public disclosure, since full description of the innovation concerned is a necessary condition for the grant of a patent and public disclosure induces efforts to "invent around the patent" which is a main source of technological progress (Markus, 2000).

State authorities are, thus, concerned with maintaining an optimal mix between a temporary monopoly and the benefits of free access to knowledge. Whether a given IPR regime is optimal depends on the objectives and circumstances of the countries involved. Conflicts of interest between developed and developing countries are, therefore, likely to occur constituting a challenge to the international efforts towards IPR harmonization (Kostecki, 1991).

2. INTELLECTUAL PROPERTY RIGHTS AS A TRADE ISSUE

International trade in products embodying IPRs has expanded considerably as the share of manufactures in merchandise trade has increased, and the share of 'high-technology' (HT) products in internationally traded goods has grown. From the 1980s on, creators of IP, mainly based in developed countries, began to realize that inadequate

protection of IPRs in export markets reduced their profits. Although trade in counterfeit goods had been an irritant for many years, trade in goods embodying 'stolen' knowledge became even more important as technologies for duplication improved. Resulting conflicts were often addressed through bilateral channels, with the threat of trade sanctions. In the United States the two main instruments used for that purpose were Section 337 of the 1930 US Tariff Act, and Section 301 of the 1974 Trade Act, as amended by the 1988 Omnibus Trade and Competitiveness Act (Box 1). The EU maintained similar institutional arrangements, but has been a much less active user (Blakeney, 2004).

Box 1
Sections 301 and 337 of US Trade Law

Under Section 301, the US President has an option to retaliate against foreign practices which are thought to restrict US exports. What such practices are is not well defined and it is left to the President's discretion whether to retaliate. A Section 301 action should be initiated by US firms, and initially involves pressure being exerted on the foreign government to adjust. If the adjustment is not sufficient, attempts to negotiate agreements may be made. If negotiations fail, the US Administration may retaliate by restricting access to its market.

The Omnibus Trade and Competitiveness Act of 1988 rendered 301 even more threatening since it called for formal investigations of private complaints creating a so called 'Super 301' procedure that required the US Trade Representative (USTR) to establish an inventory of unfair practices abroad, to select priority targets, set deadlines for action and to restrict the exports of these countries which refused to respond. That Super 301 was complemented by a new 'Special' 301 provision that pertained to the identification of nations where protection of IPRs was inadequate.

Section 337 allows for investigations to determine whether producers of products imported into the US benefit from unfair trade practices and are injuring an efficiently operating US industry. What these practices are is not well-defined, but many of the cases considered involved claims of infringement of US-held IPRs. The Omnibus Trade and Competitiveness Act of 1988, subsequently renewed in 1991 and 1999, eliminated the need to demonstrate that the unfair practice had injured a domestic industry if the allegation concerned a violation of IPRs. The WTO TRIPS agreement precludes unilateral action, as allegations of violations of the agreement are to be pursued through WTO dispute settlement mechanisms. This constituted an important motivation for developing countries to agree to TRIPS. However, Section 301 still constitutes a potential – though substantially reduced – threat as the US may retaliate if authorized by the WTO Dispute Settlement Body.

The IP business lobbies maintained that infringements of IPRs constituted a matter of piracy and theft and called for stricter multilateral rules and enforcement. Most developing countries were of a different view and held that protection of IPRs was a domestic policy matter. Stronger IPRs were seen by them as detrimental to their economic development resulting at the same time in a negligible loss for IP-intensive industries. In particular, patent protection was perceived as undesirable to food security (cost of seeds or fertilizers) and to the health of poor segments of the population (higher prices for drugs). However, opposition in the developing world was not universal, since companies in low-income economies that depend on FDI and licensing for technology, producers of indigenous and traditional knowledge as well as legal experts specialized in IPR issues favoured stronger national IPRs.

While joining the World Trade Organization (WTO) and being forced to accept the Agreement on Trade-related Intellectual Property Rights (TRIPS) governments recognized a set of common substantive rules in the IPRS area. The acceptance of TRIPS by developing nations reflected a Uruguay Round package deal, comprising a mix of incentives and threats. The threat was represented by the fear that if they refused TRIPS they would be increasingly vulnerable to unilateral arm-twisting. Incentives included the *quid pro quo* offered by developed nations and consisting of the phase-out of the Multi-Fiber Agreement (MFA), a deal on agriculture and removal of voluntary export restraints arrangements which badly hampered developing country exports prior to the WTO creation (Kostecki, 1987). A growing perception that IPRs might also be beneficial for economic development equally played a positive role (Abbott, Corea, 2007).

3. INTERNATIONAL ARRANGEMENTS DEALING WITH INTELLECTUAL PROPERTY RIGHTS

There are numerous international conventions which lay down standards for protection of intellectual property; these comprise the Paris Convention (on patents), the Berne Convention (on copyright), the Rome Convention (on sound recordings and music), the Performance and Phonograms Treaty and the Treaty on Intellectual Property in Respect of Integrated Circuits. These and other conventions are administered by the World Intellectual Property Organization (WIPO), a Geneva-based UN body. Both the Paris and Berne Conventions were first negotiated over a century ago, and have been

periodically updated and expanded. Little harmonization took place, however, and many conventions did not go much beyond agreement on the national treatment principle.

Producers of knowledge goods were not happy with the existing international treaties and sought to fill certain gaps during the Uruguay Round. For example, the Paris Convention does not specify the minimum duration of patents or define what should be patentable. There is no international agreement on proprietary business information or trade secrets. Standards of protection for computer software and sound recordings were considered too weak. IP business lobbies also maintained that existing agreements dealt inadequately with counterfeiting and that national laws on trademarks were weak or insufficiently enforced. Finally, developed country business sought an effective mechanism for multilateral dispute settlement as existing IP agreements did not contain effective procedures in this regard. A major attraction of the GATT/WTO system is that it has an enforcement mechanism.

4. THE MULTILATERAL TRADE NEGOTIATIONS ON INTELLECTUAL PROPERTY RIGHTS

The negotiations on TRIPS during the Uruguay Round were politically and technically difficult because the issue involved both a North-North (US vs. EU) and a North-South split and was largely new. Developed countries, led by the United States, sought a comprehensive agreement on standards for protection covering a wide range of IPRs and effectively enforced through the WTO dispute settlement system as well as through domestic regimes. Developing countries – led by India, Brazil and Egypt – were willing to cooperate on counterfeit but not on IPRs. Their objective was to ensure that unilateral measures to protect IPRs did not cause barriers to legitimate trade and did not strengthen the monopoly power of multinational corporations.

Many developing countries considered that the right place for setting and enforcing IPR standards was the World Intellectual Property Organization (WIPO) – which already administered some 20 multilateral conventions – and individual governments themselves. They also wanted industrialized nations to renounce the option of unilateral trade sanctions and called for a credible commitment to multilateral dispute settlement. However, Third World nations were not a cohesive bloc. Certain countries considered that stricter IPR protection was in their interest because of the link between IPRs

and FDIs. Others feared to be undercut by competitors in those developing economies which did not maintain adequate legal IPR protection.

However, it was the scope for cross-issue tradeoffs that ultimately mattered in the Uruguay Round in solving the North-South confrontation. In exchange for accepting TRIPS, developing nations were promised a better market access for their textile, clothing and agricultural exports. Without a deal on IPRs it is unlikely that the Agreements on Textiles and Clothing, on Agriculture or on Safeguards could have been concluded (Hoekman, Kostecki, 2009).

5. THE WTO APPROACH TO TRADE IN INTELLECTUAL PROPERTY

The TRIPS agreement is an integral part of the WTO and it had to be accepted by all WTO members. It is an ambitious agreement that covers copyrights and related rights (rights of performers, broadcasters and phonogram producers), layout-designs of integrated circuits, geographical origin indications, trademarks, marks of origin, industrial designs and patents. The agreement: (i) establishes minimum substantive standards of IPRs protection; (ii) prescribes procedures and remedies which should be available to enforce these rights; and (iii) extends basic GATT principles such as nondiscrimination and transparency to IPRs.

The WTO builds upon the main international conventions administered by WIPO but in a number of instances it goes beyond existing standards. With respect to copyrights, WTO members should comply with the substantive provisions of the Berne Convention for the protection of literary and artistic works (except regarding protection of moral rights). Computer software is to be protected as a literary work under the Berne Convention, and copyright is to be extended to computerized databases – something that was not part of that Convention before. Another significant addition includes the provisions on rental rights; performers are to be given protection from unauthorized recording and broadcast of live performances (bootlegging). Here again, WTO goes beyond the Rome Convention on rights of performers, producers of sound recordings and broadcasters. The TRIPS agreement requires governments to allow recording companies from one country to attack unauthorized reproduction and sale of its products within another country. The protection for producers of sound recordings and

performers is to be for at least 50 years, while broadcasting stations are granted a twenty-year period of protection.

The TRIPS provisions define the types of brands eligible for protection as a trademark or service mark and specify the minimum rights that must be granted to brand owners; brands that have become well known in a particular market enjoy additional protection. (For example, owners of foreign brands may not be forced to use their brands in conjunction with local brands). Governments must provide means to prevent the use of any geographical indications that mislead consumers and are required to discourage any use that would constitute unfair competition. Trademarks containing a geographical indication that mislead the public on the true origin of the product are to be refused. Geographical indications (GIs) for wines and spirits are given specific protection and a multilateral system of registration and notification of geographical indications for wines is to be put in place.

The protection of industrial designs was also strengthened under TRIPs relative to existing international rules. Designs are to be protected for a minimum period of 10 years. Owners of such designs may prevent the importation, sale, or production of products bearing a design that is a copy of the protected one. WTO countries must comply with the substantive provisions of the Paris Convention (1967) on patents. At least a 20-year patent protection is to be provided for almost all inventions, including both processes and products. The 20-year shorter limit implies harmonization toward the standards maintained by industrialized countries. This was an important requirement since certain countries – including certain developed WTO nations – provided for shorter patent terms and had to lengthen that protection. TRIPS patent provisions called for profound changes in many countries. Prior to WTO some 29 nations did not recognize patents for pharmaceutical products, and 39 countries provided no protection for plant varieties (Braga, 2004).

The permitted exclusions from patentability comprise plants and animals (with exception of microorganisms), computer programs, as well as biotechnological processes. However, plant varieties must be given protection, either through patents or through special or more specific systems. Inventions may be excluded from patentability for reasons of morality, public order or because of their therapeutic, diagnostic or surgical usefulness. As a general rule, rights conferred in respect of patents for processes must extend to the products directly obtained by the process.

The Treaty on Intellectual Property in Respect of Integrated Circuits (1989) provides the basis for the protection of layout designs of integrated

circuits. The TRIPS Agreement goes beyond this agreement by requiring a minimum protection period of 10 years and extension of rights to products incorporating infringing layout designs (Hoekman, Kostecki, 2009).

Trade secrets and know-how of commercial value are protected against acts that conflict with honest commercial practices such as breach of confidence. However, the relevant provision of TRIPS (Article 39), does not define what acts are unfair, leaving governments free to allow for reverse engineering (UNCTAD-ICTSD, 2005). Test data on agricultural or pharmaceutical chemicals submitted to the authorities with a view of obtaining marketing approval shall also be protected against unfair commercial use.

The WTO governments should provide procedures and remedies for effective enforcement of IPRs by – both foreign and national – right-holders. Such procedures are to be fair and equitable, entail reasonable time limits and should not be unnecessarily complicated or costly. The WTO recognizes that some IPRs licensing practices may have adverse effects on trade or impede the transfer and dissemination of technology. It allows for governments to specify in their law practices or conditions that constitute an abuse of IPRs and give rise to intervention.

Many TRIPS provisions are applied with immediate effect, or after one year following the date of entry into force of the WTO; developing countries were entitled to a four year delay (with the exception of MFN and national treatment) and the least developed countries (LDCs) were granted extensions through 2016.

6. TRADE DISPUTES CONCERNING INTELLECTUAL PROPERTY

During the first decade of the WTO over two dozen cases referring to intellectual property were submitted for dispute settlement. Most of these cases involved the major developed countries but several also concerned developing nations (Box 2). The US was the most active early user of TRIPS dispute settlement, with the majority of cases brought against the EU. It complained, *inter alia*, of an alleged lack of protection of trademarks and geographical indications for agricultural products and foodstuffs, failure to grant copyright and neighbouring rights in certain EU member states, non-enforcement of IPRs in Greece, Denmark's failure to make provisional measures available in the context of civil proceedings involving IPRs, and Portugal's term of patent protection. The EU in turn has taken the US to task

on legislation that precludes registration or renewal of a trademark if it was previously abandoned by a trademark owner whose assets were confiscated under Cuban law and a law that permitted commercial entities such as bars and restaurants to play music and television without payment of royalties (Hoekman, Kostecki, 2009).

Box 2
The First TRIPS Disputes: Music Royalties in Japan and the India's "Mailbox" Provision

The first dispute settlement cases brought under TRIPS were against Japan, by the US and EC (WT/DS28 and WT/DS42). Japan did not provide at least a 50 year copyright protection for sound recordings. The case never went through the panel process since Japan reached a "negotiated solution" with the complainants, agreeing to revise its legislation.

The first case under TRIPS to go both through the panel and Appellate Body stages was initiated by the US in 1996 (WT/DS50). The US challenged India's implementation of the so called 'mail box' provision (Art. 70 of TRIPS) with respect to patents for pharmaceutical and agricultural chemicals. The "mailbox" clause specifies that a developing country delaying implementation of TRIPS in an area of previously unprotected technology must secure the legal security of patent applications. This was meant that no subsequent claimant should be able to assert the same patent once the transition period for implementing the TRIPS expired. India was judged not to be in compliance with Article 70.9 of the TRIPS Agreement by failing to establish a system for the grant of exclusive marketing rights. Two related cases were subsequently brought against Argentina.

Developing countries have also become more pro-active in safeguarding their IPR interests. For example, tea plantations in the region of Darjeeling launched a campaign to protect the 'Darjeeling' brand from foreign imitations, with a Belgian watchdog agency asked to identify the use of the name 'Darjeeling' in international markets. Thailand requested in 1998 the US Administration to revoke registration of the 'Jasmati' rice trademark of a US firm. Objections have also been raised to the use of variants of the name Basmati for rice, with India taking steps to protect 'Basmati' as a geographical indication.

7. THE DOHA ROUND NEGOTIATIONS ON TRIPS

IPRs remained among the most controversial North-South issues also in the Doha Round negotiations where IP lobbies continued to push for the extended reach of the patent system, reinforced protection of copyrights and neighbouring rights and stricter rules on geographical indications. The developed country IP lobbies argued that their strategy of reinforced

protection would favour development because (a) R&D activities in developing economies would increase and because (b) positive effects of trademarks and geographical indications would benefit developing countries in terms of protection of traditional knowledge and biodiversity. The critics raised concerns about higher prices and access to essential medicines, limited availability of new seed varieties, and risks of abusive licensing practices. The Doha Round developments concerned mainly public health issues, traditional knowledge, biodiversity and geographical indications.

Public Health. The TRIPS Agreement recognizes that IPRs should not get in the way of pressing public policy needs. In a case of an important public health emergency, if local drug manufacturers are unable to produce enough to satisfy the demand for the medicines protected by patents, a government can require the producer to license the medicine to other firms. However, the TRIPS rules stipulated that production under compulsory licensing should be for the domestic market. This created a problem for nations with no domestic production as they would import the drugs.

Nevertheless, many developing countries and pro-development NGOs felt that the TRIPS rules continued to constitute an impediment in combating public health emergencies by restricting access to patented medicines and transferring resources to foreign owners and producers. The most publicized aspect of the debate has been over HIV/AIDS in Africa (Box 3).

Box 3 The South African Medicines Act
Faced with the HIV/AIDS crisis in the early 2000, South Africa passed the Medicines Act, which included a provision that allowed for fast track compulsory licensing of medicines and authorization for parallel importation. Both provisions were motivated by a desire to give South Africans access to the lowest-priced sources of supply of vital pharmaceutical products. The Act permitted the importation of patented medicines that had been commercialized in another market by patent owner (i.e., South Africa adopted an international exhaustion rule). Encouraged by its pharmaceutical industry, the US, with support from the EU, pressed the South African authorities to modify the Act's offending provisions. One of the arguments was that the law breached South Africa's obligations under the TRIPS Agreement. In 2001, a number of major drug corporations brought their case to the Pretoria High Court in South Africa. Several months later, following a mass media campaign supported by NGOs such as Oxfam and Médecins sans Frontières, the litigation was withdrawn in order not to deteriorate even further the public image of the pharmaceutical companies concerned. The issue of corporate image became a significant determining factor in several other cases involving more flexible application of the TRIPS rules.

Source: Drahos and Braithwaite, 2006

The widespread criticism of the TRIPS Agreement prompted the 2001 Doha Declaration on TRIPS and Public Health (WTO/MIN(01)/DEC/2) followed by the 2003 General Council Decision allowing to grant compulsory licenses with a view to exporting pharmaceutical products to countries with no or insufficient manufacturing capacities (WT/L540). The WTO Council Decision was accompanied by significant pressure by the US and a number of other developed countries aimed at minimizing the impact of the 2001 Declaration by limiting the number of eligible diseases and establishing a specific list of countries to which the Decision would apply.

The media debate on patents for medicines contributed significantly to the legitimacy woes of the TRIPS agreement and the WTO. Concerns by the pharmaceutical companies regarding their public image resulted in a change in the hard-line stance taken by the developed country IP lobby. Due to the opposition and skilful advocacy by development NGOs, patent-holding multinationals began to shift from a strategy that put significant emphasis on litigation to one that began to do more to capture the moral high ground. A number of firms provided developing countries with affordably priced retroviral drugs (partly to ensure profit-maximizing price discrimination) or even donated drugs. The shift coincided with a growing awareness that the drug industry had to rethink its business model, ranging from innovation and patent strategy to marketing and advocacy. A new business model which went beyond the industry's traditional and substantially vertical integration in R&D, production and marketing medicines began to gain popularity. It involved, in particular, a move towards more offshore outsourcing, increased interest in generic drug production, and a convergence of drugs, devices and diagnostics that promised new opportunities for growth and escape from low-margin market segments subject to commodity pricing.

However, the use of compulsory patent licenses remained limited. One reason for this is that many drugs are not patented – that is, there are generics already in the market. Another reason is that many developing countries first need to incorporate the possible provisions on compulsory licensing, parallel imports, limits on data protection, use of broad research and other exceptions to patentability into their legislation (Abbott, van Puymbroeck, 2003, Hoekman, Kostecki, 2009). Moreover, factors which limited the benefits of the compulsory licenses also included as inadequate the distribution system, the lack of trained medical personnel to administer the drugs, weak incentives for generic drug manufacturers to supply small

quantities to LDCs with no production capacity, and the necessity to use distinctive packaging and notification requirements (Correa, 2004).

Traditional Knowledge and Biodiversity. The yet unwritten part of the TRIPS Agreement should be about knowledge that poor people in poor countries generate and might want to benefit from (Finger, Schuler, 2004). An important example is "traditional knowledge" which is not included in the agreement. Traditional knowledge covers a variety of assets, including genetic resources, indigenous medicinal knowledge, and designs. Traditional medicinal knowledge relies on plant treatment which being obvious or in the public domain, is usually not patented or even nor patentable. But, a medicine derived from plants that use traditional know-how begun to be increasingly considered for patenting by developed country firms. This raises two types of problems for developing countries: (i) traditional knowledge may be acquired by developed country pharmaceutical firms, precluding use by local communities; and (ii) holders of the traditional knowledge may be inadequately compensated, if at all. This in turn raises questions such as: How should one prevent the inappropriate patenting of traditional knowledge? How could one ensure that providers of traditional knowledge are not excluded from benefits derived? Traditional knowledge became an item on the agenda of a review of TRIPS in the Doha Round. Technical issues requiring solution included agreeing on an operational definition of traditional knowledge, identification of IPR holders and establishing the legal basis for protection of those forms of traditional knowledge which were in the public domain. They also included a review of TRIPS provisions, which allows plants and animals other than micro-organisms and essentially biological processes for the production of plants and animals (other than non-biological and microbiological processes) to be excluded from patentability as long as a system was put in place to protect plant varieties (Article 27.3 (b)). At issue here were questions such as how to define *sui generis* protection of plant varieties and how to deal with ethical problems relating to the patentability of life-forms. Could biological and genetic resources in their natural state be protected? Should these resources be protected as intellectual property so that developing country local community or farmers could benefit from their conservation?

The WTO also became the forum for negotiations concerning the relationship between the TRIPS Agreement and the Convention on Biological Diversity (CBD). Developing countries led by Brazil and India proposed amendments to preclude bio-piracy, i.e., uncompensated and unauthorized appropriation of genetic resources, and to ensure fair and

equitable sharing of benefits obtained from traditional knowledge or folklore. Moreover, the proposals specified conditions for patents based on biological material or traditional knowledge, including disclosure of their source and evidence of benefit-sharing and prior informed consent. It was also suggested that IPRs could be an instrument for implementing the Convention on Biodiversity, e.g., by providing for sharing of benefits resulting from the use of genetic resources and the disclosure of the geographical source and origin of genetic material (Llewelyn, 2003).

Proponents of the CBD-related amendment to TRIPS called for a disclosure obligation; in order for patent applications to be processed, an agreement on "the nature and extent" of prior informed consent and benefit-sharing was needed. The biotechnology business objected and raised concerns that the disclosure of origin requirement would result in an undue burden on patent applications. In its view any requirements to go ever further in pinpointing the source of genetic material could result in such specificity as to make satisfying the requirement impossible. With respect to bio-diversity, the WTO clearly cannot go beyond the creation of rights. This is obviously not sufficient. Maintaining bio-diversity requires incentives to ensure that developing country agricultural producers and communities have a self-interest in maintaining diversity stocks. There is thus a need to align the WTO with the Convention on Biological Diversity (CBD) to provide a global solution to bio-diversity concerns (Hoekman, Kostecki, 2009).

Geographical Indications. Geographical Indications (GIs) identify "a good as originating in the territory of a Member, a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin". GIs are protected in order to avoid misleading the public and to prevent unfair competition. A higher standard of protection for GIs for wines and spirits are maintained, and exceptions recognized for instances when a name has become generic (e.g., "cheddar cheese") or is protected through a trademark.

The definition of GIs quoted above goes beyond the long-standing concept of "appellations of origin". The latter require a quality linkage between the product and its geographical origin to be established, with the geographical name designating the product (e.g., Sauterne wine). Appellations of origin were already incorporated in the Paris and other IPR conventions and thus covered by TRIPS. Geographical indications were a new form of IPR that was embodied in TRIPS although they had been previously discussed in the context of the EU and WIPO.

The EU has long favoured stronger global protection of its regional food names by extending the TRIPS rules on GIs beyond wines and spirits to include food and other products. In the EU's view, "cheddar" may be generic, but names such as "Cognac" and "Parmesan cheese" should be reserved for products actually produced in those regions of Europe. The EU has implemented a regime within its member countries that does so. (E.g., in 2003, Denmark's cheese producers were required to stop using the Greek name "Feta" for their version of that type of cheese, even though Danish producers supplied more feta cheese to European consumers than did Greece). In line with its own regime, the EU has proposed that the TRIPS be extended to include a system of "registered geographical indications" that would require both proof of geographical origin and compliance with applicable product standards. In response, the WTO also dealt with creating a multilateral register for wines and spirits, and strengthening the level of protection for products other than wines and spirits.

Several non-European agricultural exporters – including Australia, Brazil, Canada, South Africa and the United States – opposed the EU proposals since, in their view, many of the names for which the Europeans wanted protection had become generic (van Caenegem, 2003). Indeed, many well-known food products have their origin in Europe and numerous European-origin names have been widely used in international marketing by former colonies. The issue has been a source of conflict for years, including a number of trade disputes. For example, some US wine producers have used the name "Champaign" to market sparkling wine – a practice that infuriated the vineyard owners from the Champagne region in France. In the opinion of the opponents of EU strategy, stronger protection of GIs would simply be yet another form of protectionism for the already overprotected EU farm sector.

The issue is not a North/South divide, since opponents of stronger GI protection included the US and several other developed countries, whereas proponents comprised India, Kenya, and Thailand. Proponents regard GIs as a marketing instrument that can help to create niches, increase market shares and obtain a price premium (Box 4). Opponents take the view that consumers can be informed of the origin of goods through appropriate labeling and that quality can be best assured through trademarks.

Box 4 Geographical Indications and Premium Price
Fink and Maskus (2006) surveyed some of the literature (including a study of Bordeaux wines) and found that certain regional designations command a price premium. The premium was as much as $15 per bottle in the case of the "Pomerol" designation. A study of the Spanish market for meat products found that products bearing the "Galician Veal" label commanded a premium of $0.21 per kilogram; and a "Napa Valley" designation commanded prices that are 60 percent higher than wines with simply a "California" designation. Surveys of consumers have also demonstrated that many buyers – although not a majority – would pay a premium for origin-guaranteed products. The price impact of GIs and brands tends to be greater in international trade than in domestic commerce, because informational problems are more pronounced when consumers and producers are located in different countries (Kostecki et al, 1994).

Trademarks and GIs are similar in terms of their economic effects: (a) they reduce consumer search costs and uncertainty regarding the quality of a product by making it more difficult for "imitators" to sell similar goods that have not contributed to the collective investments in creating the "brand", (b) they also increase the incentives to invest in enhancing quality in a region including control of free riding or shirking by some suppliers in the region, as this would harm the investment in reputation (Maskus, 2003). GIs and trademarks alike do not protect the underlying production technology or knowledge used to make the product: non-French wine makers are, therefore, free to adopt the wine production process used in the Bourgogne regions of France.

Another difference between GIs and trademarks is that the latter are owned by individual firms, whereas GIs benefit numerous producers located in a certain geographical area. As a result, commercial use of GIs can be associated with high coordination costs. This helps to explain why there are hundreds of thousands of registered trademarks across the world but only less than 1,000 registered GIs (Baroncelli, Fink and Javorcik, 2005). An implication is that small regions in low-income countries may not be able to mobilize the resources required to create and exploit GIs as a competitive marketing tool.

8. THE ECONOMIC EFFECTS OF IPR PROTECTION

Significant welfare costs and cross-country redistribution of benefit result from the implementation of the TRIPS agreement (this literature review is partly based on Hoekman, Kostecki, 2009). Enjoying monopoly position, IPR holders may extract some proportion of consumer surplus by equating marginal revenue to marginal cost. This will generate a static deadweight

loss for the products that benefit from IPR protection. Countries that have performing business firms creating knowledge will profit. Those that do not will lose. If the industry can exert market power on world markets because of IPR, the equation becomes even more beneficial. For economies with limited production of knowledge, IPRs can only generate a loss. The only source of potential gain for these countries is if global IPR enforcement raises R&D and innovation incentives. This is not very likely to be significant given the small markets in most IPR-deficit nations.

The degree to which prices will increase as a result of market power depends on several variables. First, market structure is of main importance. The quantity of firms (home and foreign) competing with rights holders, the type of that competition, the freedom of market entry and exit, quality differentiation of products, openness to trade and the feasibility of arbitrage (parallel imports), and wholesale and retail distribution systems are other important determinants (Maskus, 2000). The more competitive the market for a product before the introduction of IPRs, the lower the substitutability of protection for generic products, and the more concentrated the industry producing protected varieties, the greater the impact of IPRs on prices. The less price elastic is demand, the greater the price increasing effect of enhancing market power through IPRs. The strength of competition policy and the willingness to intervene directly through regulation will also play a role. Finally, a lot will depend on the wording of national IPR regulations, including the scope of protection, the provisions for reverse engineering as a means of fair competition, and fair-use exemptions in copyright.

In economies that are significant net IP importers, the royalties paid by users to right-holders are – to a large extent – transferred abroad. This signifies that in an international perspective, IPRs are not simply a mechanism to redistribute income among different interest groups within a nation, with an associated static efficiency deadweight loss, but also a way of transferring income across countries. The strength of national IPR regimes exerted a positive effect on imports of manufactures as better protection leads to more trade. (Maskus and Penubarti, 1995). Strong foreign patent rights increase bilateral exchange on average across all countries, with the positive market share effect being particularly pronounced for economies with imitative abilities (Smith, 2001). Strong foreign patent rights also confer a "locational" advantage that increases affiliate sales and licenses relative to exports of goods embodying the IPR-protected knowledge and results in increased flows of knowledge to affiliates of multinational corporations (Smith, 2001; Blili, Sermet, 2006).

Numerous studies show that the South-North transfers resulting from the Uruguay Round may be of an important magnitude. Economic theory clearly suggests that optimal IPRs policies should differ across nations depending on the degree of development, which in turn affects innovation capacity (focused on imitation or acquisition of existing knowledge) and preferences for particular types of innovation. There is a consensus that uniform standards for IPRs will not maximize world welfare or be in the interest of developing countries (Deardorff, 1992). At the same time, there is also an agreement that IPR protection will be too weak when policies are set independently by individual governments, because governments will ignore the effects of national IPR policies on consumers and firms in the rest of the world (Grossman and Lai, 2004). Empirical studies show that stronger IPRs – often measured on the basis of an index of IPRs constructed by Ginarte and Park (1997) – have a negative impact on welfare, economic growth and innovation in developing nations (e.g., Chauduri, Goldberg and Jia, 2006; Falvey, Foster and Greenaway, 2006). However, IPRs may also be in the interest of developing countries as a way of encouraging investment in technology that is more relevant to their needs. The country choices of multinationals and the importance of FDI as a channel for knowledge transfer relative to trade or licensing, are also influenced by the degree of IPR protection (Diwan and Rodrik, 1991; Glass and Saggi, 2002).

What is the magnitude of cross-country net transfers associated with TRIPS? McCalman (2001) incorporated information on the volume and price of technology transfers through patents to estimate the net present value of patents if countries were to broaden the coverage and enforce TRIPS-type standards of protection. His study reports estimated net transfers associated with the TRIPS Agreement, which are defined as the increase in the value of patent rights held by residents of a country minus the increase in the value of patent rights granted to non-residents by that country. (Both figures increased due to the higher patent standards agreed upon in the TRIPS Agreement). Among the clear winners are the US, Germany, France and Switzerland. Most countries experience a net static loss from reinforced patent protection. The US stands out as the main winner with benefits that are almost 6 times higher than those of the second largest beneficiary. Among the most significant predicted losers – some of them unexpected – are Canada, Brazil, the UK, India, Mexico, Japan, Spain and South Korea. Canada's ranking is consistent with the country's alignment with developing countries in the negotiations on TRIPS. The position of the UK and Japan largely reflects a substantial increase in the value of the both countries'

patent protection, a rise that is not matched by the increase in value of foreign patents held by the countries' citizens.

When comparing the net transfer with the country's GDP, one can observe that the relative size of these transfers is rather small given the size of the national economy. The study also permits to distinguish between the transfers associated with a broadening of the sector coverage of patent protection and those associated with increasing enforcement effort. They suggest that the transfers from developing countries are mainly due to an increase in enforcement rather than extended coverage of protection, and that for advanced countries the transfer source tends to be equally divided. This breakdown might imply that, in the future, developing countries will favour the extension of the coverage of patent protection rather than improving enforcement. Comparing McCalman's results with the results of a leading assessment of the Uruguay round commitments to liberalize trade in goods – Harrison, Rutherford and Tarr (1997) – shows that the net TRIPS transfers increase the short run gain for the US by 40 and long run gains by 20 percent, with developing nations seeing their gains reduced, particularly in the short run.

Obviously, static welfare losses and rent transfers are only part of the story since FDI impact is also important. Branstetter et al. (2007) estimated that due to IPR reforms in sixteen states in the 1980s and 1990s, multinational companies increased their production in countries that conduct IPR reforms and that industry value added increases after reforms, particularly in sectors that are technology-intensive and where FDI is concentrated. Konan and La Croix (2006) noted that the basic thrust of the academic literature on this subject is as follows: (i) harmonization is not optimal for the world as a whole (they note, in particular, that the US history provides a clear case of a country that used strong patent rights and weak copyrights in the 19th century to enhance its growth prospects); (ii) there is a strong case for welfare gains for developing countries from patent harmonization such as introduced under TRIPS, if developed countries pay lump-sums to offset higher royalty payments by developing nations; and (iii) while there is a case for IPRs to support innovation, the appropriate scope, depth, and enforcement of IPRs will differ across countries according to their economic and political institutions, their per capita income, and their capability to engage in and disseminate the fruits of R&D.

9. STRATEGIC IMPLICATIONS

Given the negative effect of TRIPS on importers, development-friendly policies call for creating the conditions that maximize the potential for beneficial dynamic effects of IPRs, and for obtaining compensation in other areas. The latter is, of course, what the Uruguay Round was about and the Doha Round is most likely to be. On the former, a variety of policies can be put in place to reduce the magnitude of the transfer. Examples include taxation of imports of those IPR-intensive goods where foreign producers have significant market power, facilitating the absorption and diffusion of know-how, strong competition law and direct regulation. The TRIPS agreement allows significant latitude for governments to draft implementing legislation that attenuates the ability of right-holders to abuse their market power.

Box 5.
Kalbe Farma of Indonesia

Kalbe Farma PT is an Indonesian pharmaceutical company. The firm produces and markets medicaments for therapeutic use. Under the pre-TRIPS Indonesian patent law the firm was able to copy and sell pharmaceutical products that were protected by international patents. Such products were sold by Kalbe Farma in Indonesia and in other developing country markets, including Bangladesh, Malaysia, Myanmar, Nigeria, Sri Lanka and Vietnam. Once the government began drafting legislation to bring its IPR regime into conformity with TRIPS, management reviewed its product development strategy. Kalbe Farma production consisted of drugs that were no longer protected internationally as well as pharmaceuticals which were still under patent protection outside the country, but for which a valid patent had never been filed in Indonesia. The company was free to supply the latter to Indonesian market, but had to exercise restraint in exporting to markets in which the patent protection was still in force. It also imported a range of products, preparations and ingredients from third party suppliers that were protected. Such imports were expected to become illegal unless acquired from the right holder or a licensee.

Management decided not to wait for the new TRIPS-consistent law to be passed. Kalbe Farma developed a new marketing and partnership strategy involving both foreign companies and Indonesian firms. It focused on securing marketing rights in Indonesia for foreign patented products and to develop and sell generic drugs no longer under patent. The company also initiated negotiations with international pharmaceutical suppliers to acquire licensing rights for a range of products in Indonesia with a view to establish a leadership position in the domestic market. Kalbe Farma also expanded its R&D, recognizing that competition in the pharmaceutical industry was likely to intensify, including through entry of foreign companies attracted by stronger patent protection. As of 2008, it was the largest publicly listed pharmaceutical firm in Indonesia.

Source: Kostecki (2001)

Regulation of prices is common in many states, especially of pharmaceuticals. While such approach can result in pricing strategiescloser to cost, it can also have unintended consequences. If prices are set low, pharmaceutical firms may refuse to sell. Moreover, companies will have an incentive to circumvent price regulations by inflating costs (Lanjouw, 1998). Another policy option is to ensure that markets are open and that there is sufficient inter-brand intra-brand competition. One element of that strategy could be a free parallel import system that renders discrimination between various markets difficult. The economics of this issue are complex. Certain observers consider that as long as a producer faces competition from other brands, exclusive distribution arrangements matter very little. However, in many low-income countries, markets are small, distribution is highly concentrated and, therefore, inter-brand competition is weak. In such circumstances, national exhaustion and legally enforceable exclusive distributor arrangements can reduce welfare.

Broadly speaking, protection of IPRs may rely either on (i) sanction-based application of strict IPRs norms ("stick-based approach"), or on (ii) encouragement strategies that makes the IPRs-based co-operation between the developed country and developing country firms attractive to the latter ("carrot-based approach"). The difference between the two approaches may be explained with the help of the graph presented in Figure 1.

The utilities of a firm that respects IPRs (a "non-infringer") and a firm that does not (an "infringer") are represented on the vertical axis. The firm's utility depends on whether it is "caught" or "not caught". If the infringer firm has a better average performance than the non-infringer, there is an incentive to ignore IPRs. In such a situation, IPR-owning firms see infringers as free-riding on their efforts to create and maintain intellectual property.

In order to protect IPRs, the average utility of the infringer needs to be below that of the non-infringer. The "stick-based approach" is what is meant by the imposition of even stricter protection and "implementation" for which the IP lobbies push in WTO. The "carrot-based approach" is illustrated by the case of Kalbe Farma (Box 5) where local firms are encouraged to pursue co-operation in the IP area through mutually beneficial business contracts with IPR-holders. That form of co-operation may be well stimulated by favouring a more pro-active stand of the OECD business concerning the IP partnership with developing country companies, encouragement for IP partnership through preferential access to financing (e.g., venture capital or credit lines), offer of technical co-operation program favouring IP business

ventures and efforts to ensure that developing country business firms which take a positive stand towards IPRs benefit in terms of market opportunities in exports of their IP-intensive products.

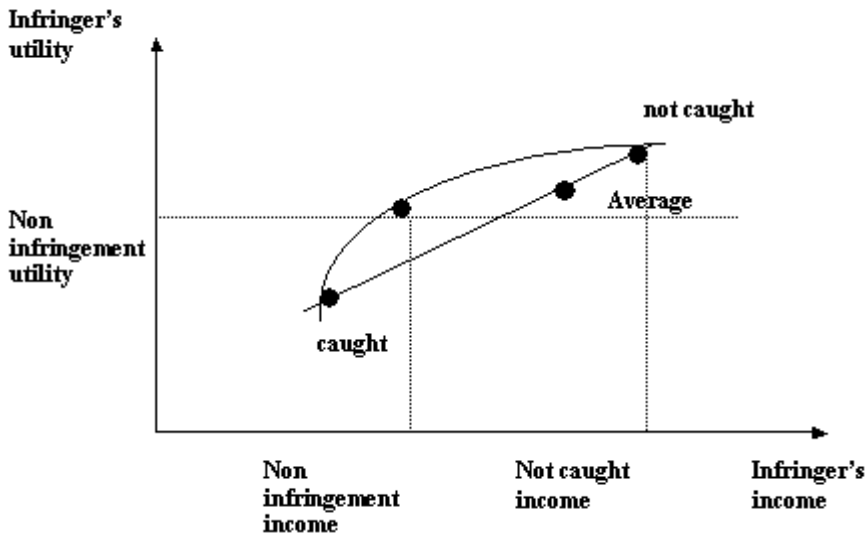

Figure 1. Ensuring that IPR Infringement Does Not Pay

Source: own

Obviously, the stick- and carrot-based approaches are not necessarily exclusive and can be mutually supportive. It is, therefore, regrettable that the carrot-based strategy tends to be neglected (Kostecki, 2005). The TRIPs Agreement – supportive of IPR-owner interests – contributes to this outcome by mainly discouraging free-riding but it does little to increase the utility of non-infringement behaviour. Also the WTO technical assistance aims, first of all, at discouraging free-riding by ensuring better implementation of ever stricter IP standards, thus making infringement a more costly option. No doubt, both international technical assistance programs and co-operative business-to-business strategies could assume a greater role in increasing the attractiveness of the IPR use through awareness-seminars, management training, coaching in partnership-building, etc. Note that such activities are "Pareto optimal", i.e., they increase the utility of IPR owners and IP users who abstain from free-riding, while making infringers no worse-off. The stick-based approach is "Pareto-inferior" in that it increases

the utility of IPR-holders while decreasing the utility of non-users of IPRs (free-riders) in developing countries.

10. CONCLUSIONS

The TRIPS Agreement, which establishes a common set of substantive rules in the IPRs area, differs in its nature from other WTO agreements. Whereas the latter merely impose disciplines on members if they choose to pursue certain policies, the TRIPS agreement obliges governments to take positive action to protect IPRs in specific ways. The TRIPS is thus an example of "positive integration" which contrasts with the "negative integration" not to use certain policies that directly distort trade flow.

Did the WTO get it right? It is doubtful – at least from the economic development perspective. The introduction of such a unique agreement into the WTO and the vigorous implementation of the TRIPS commitments were possible due to pressures of the developed country IP business lobbies. Regretfully though, TRIPS is mostly about knowledge that developed country IP businesses own and want to sell to developing countries clients (Finger, Schuler, 2000). However, the traditional "stick approach" in the TRIPS negotiations seems to have reached its outmost limits and it is widely felt that TRIPS should be re-balanced to become more development-friendly. Both technological change and a new constellation of TRIPS advocacy favor flexibility and more development- oriented strategy. One option for the future is to opt – to a larger extent – for a "carrot-based" approach which relies on creating stronger incentives for developing country firms to join the IPR-users club (as shown in the case study of an Indonesian pharmaceutical firm in Box 5). Another (complementary) option is to render the TRIPS Agreement more development-friendly by introducing elements as protection of traditional knowledge and marks of origin and greater flexibility in the implementation of TRIPS where they conflict with the WTO development objectives.

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