

# The Impact and the Implications of TRIPs in a Knowledge-based Global Economy: A Developing Country's Perspective

*Carsten Vogel\**

## ABSTRACT

This paper discusses, from a developing country's perspective, the impact and implications of the Agreement on Trade-Related Intellectual Property Rights of the World Trade Organization (WTO). It does so by putting them into the context of relevant trends of globalization and assessing the political and institutional setting within the WTO framework. The paper thereby provides comprehensive background information on trade-related aspects of intellectual property rights (TRIPs) and the resulting international intellectual property regime, including its characteristics, preconditions, the actors and interests involved, and it provides an institutional analysis. The main finding is that the constraints on intellectual property regulation in developing countries are twofold. First, the TRIPs Agreement has an unprecedented impact on national regulations by imposing global minimum standards for types of intellectual property protection, the scope and the duration of those regulations along with rules for enforcement. Second, the emergence of the TRIPs Agreement has made intellectual property protection an important issue in today's global production networks established by transnational corporations. Therefore, in the case of intellectual property protection, the continuous internationalization of production and the knowledge-based economy (as major trends in today's global

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\* Research Assistant, Weidenfeld Institute for Strategic Dialogue/Club of Three, London, United Kingdom, e-mail: [vogel.carsten@gmail.com](mailto:vogel.carsten@gmail.com). This paper does not represent the views of the Weidenfeld Institute for Strategic Dialogue/Club of Three. Any errors are the responsibility of the author; the views expressed are those of the author and do not necessarily reflect those of the United Nations.

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economy) has become the fundamental driver for increased attention to national regulation in developing countries owing to increased technological competition and investment in research and development. However, when analysing the emergence and impacts of the TRIPs Agreement, both economic and political integration appear to be deeply interlinked. Mounting exports and investment flows from the industrialized countries confronted their Governments with the demand for cross-border enforcement of intellectual property rights (IPRs). The weak and fragmented World Intellectual Property Organization system was thus bypassed by introducing the IPR issue into the talks under the General Agreement on Tariffs and Trade, which offered the best institutional platform to push intellectual property protection forward, because industrialized countries could offer rewards *quid pro quo* for the commitments made by developing countries. The specific characteristics of the established international intellectual property regime within the WTO framework made its global impact feasible, since WTO offers widespread membership and the option to enforce compliance through its Dispute Settlement Body. On the other hand, besides national intellectual property systems, the TRIPs Agreement also changed the global trade and investment environment fundamentally with regard to the strengthening of owner rights on inventions and innovation. As the outlined trend of internationalization of research and development indicates, the paper assumes that the TRIPs Agreement facilitates further fragmentation of production in technology-intensive sectors and hence offers further opportunities for potential host countries, because adjusted intellectual property systems and better prospects for enforcement may generally encourage transnational corporations to relocate the very intellectual property-sensitive parts of production. Throughout the paper basic theoretical concepts are discussed in order to clarify the actual developments, and illustrative examples are used, such as the internationalization of research and development and the unilateral and bilateral efforts of the United States for cross-border enforcement of IPRs.

## 1. INTRODUCTION

Since the Agreement on Trade-Related Intellectual Property Rights came into force in 1995, the protection of intellectual property has become an issue of specific attention from a developing country's perspective. Until then, national intellectual property regulation was often subject to strategic industrialization policies aimed at facilitating imitation, or it was of no concern at all. This situation has changed with the TRIPs Agreement.

The developed countries first pushed for strengthening IPRs in the Tokyo round of the General Agreement on Tariffs and Trade (GATT), because they increasingly perceived that enforcement was inadequate and obviously looked for another forum to solve the problem besides the World Intellectual Property Organization (WIPO). Industrialized countries wanted to find a solution, because strong domestic interests within the exporting industries evolved as did general concerns about the loss of research and development (R and D) investments due to imitation in developing countries. Governments faced a dilemma with regard to the traditionally national coverage of intellectual property regulation and the transnational reach of innovating industries. Consequently, they used the GATT platform to implement internationally enforceable rules on intellectual property protection and to offer concessions in other areas of the Uruguay round negotiations as *quid pro quo*. Nonetheless, by accepting the TRIPs provisions, developing countries made considerable commitments with regard to the cost of immediate implementation and potential transfer payments to intellectual property-holding firms abroad.

The major impact of the TRIPs Agreement is the harmonization of national intellectual property regulation with global “minimum standards in virtually all areas of intellectual property protection” (Maskus, 2000, p. 26) including rules for enforcement and administration in all WTO member countries. The institutional environment of GATT and the World Trade Organization (WTO) made this unprecedented intervention in national regulation feasible.

This paper interlinks the globalization process, particularly the internationalization of production and the emergence of a knowledge-based global economy, with the political dimensions of the TRIPs Agreement within the WTO framework. The next sections are organized as follows: section 2 outlines the background of IPRs and the debate, and discusses and subsequently illustrates the internationalization of production and the knowledge-based economy by focusing on the trend of the internationalization of R and D. Section 3 puts the TRIPs Agreement into its political-economic context. It analyses first the weaknesses of the WIPO system and the political economy of cross-border IPR enforcement; second, it points out the complex position of developing countries in the negotiations; and third, it assesses the main characteristics and elements of the new international intellectual property regime, which goes beyond the TRIPs Agreement. That regime is expanded through an increasing number of preferential bilateral and regional trade agreements.

## 2. INTELLECTUAL PROPERTY RIGHTS AND TRENDS IN THE GLOBAL ECONOMY

### (a) Regulation of intellectual property rights

The term IPRs refers to the legal instrument for protecting the ownership of an immaterial good: creations of the mind resulting from invention and innovation.<sup>1</sup> An IPR, e.g., a patent, copyright or industrial design,<sup>2</sup> entitles the owner to capitalize exclusively on its commercial use for a certain period. The paper focuses on patents,<sup>3</sup> which are subsequently also referred to as intellectual property. The reason is that patents are the most relevant type of intellectual property for the creation of technology.

As a static set of rules, IPRs “are just one of the pieces that form a national system of intellectual property protection.” (Primo Braga and others, 2000, p. 4). Naturally, it takes more than the sole legal status of IPRs to ensure that rights can be granted by the State. The lack of enforcement is often the most criticized feature of the system in developing countries. Especially in newly industrialized countries, the focus is on intellectual property protection, because the production and consumption of goods and services increasingly involves new technology, i.e., knowledge which can be commercially exploited. Maskus (2000, p. 3) identifies three key elements of the intellectual property system: “standards”, “limitations” and “enforcement”. Standards determine the scope of the IPR. Hence, limitations additionally restrict the extent of protection. They include the period of protection, compulsory licensing to ensure the use of certain technology and competition rules to contain monopolistic tendencies. Enforcement comprises all “administrative and judicial actions by public authorities to safeguard the rights granted” (Maskus, 2000, p. 3). For all WTO members, TRIPs includes these three key elements as obligations to implement.

Intellectual property regulation, including all components of the intellectual property system, is conventionally a concern of national policymaking. The Government

<sup>1</sup> Concerning the application of IPRs, Hoekman and Kostecki (2001, p. 276) emphasize the importance of innovation, because it is mostly related to the commercial and “costly” part of R and D, which turns the invention into a product.

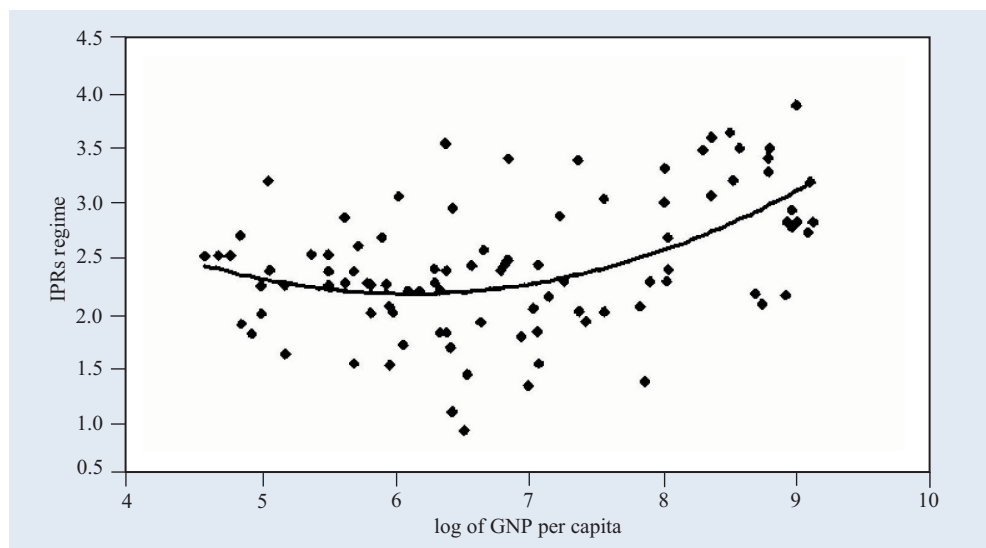
<sup>2</sup> According to a widely quoted categorization of IPRs in Primo Braga and others (2000, p. 4), patents are within industrial property, the first of four “types of IPR”, and can be found in both international treaties and in some national intellectual property provisions. They include utility models, geographical indications, industrial designs and trademarks. The second type, literary and artistic property, namely copyrights and neighbouring rights, protect the authors of printing, audio and video entertainment, software and broadcasting. The third type, trade secrets, refers to undisclosed business information. The fourth type refers to *sui generis* protection and includes plant breeders’ rights, database protection and integrated circuits as specific instruments of protection not covered by other types. All types of IPRs can be found in different agreements of the World Intellectual Property Organization and nearly all are included in TRIPs.

<sup>3</sup> The use of the term intellectual property refers mainly to patents.

intervenes in the distribution of gains arising from inventions and R and D in order to avoid an assumed underinvestment in the “production of knowledge”, as argued by Arrow (1962, citing Primo Braga and Fink, 1999, p. 2). The “economic rationale” for policymakers to provide IPRs derives from the character of knowledge, because it is “non-rival in nature”, i.e., the marginal cost of its distribution is zero.

However, the concept of intellectual property protection has been contested, especially after the emergence of the TRIPs Agreement. While the proponents are worried about the absence of incentives for innovation, which can lead to welfare losses, the critics focus on the reduced resources for the public, i.e., higher consumer prices, which are comparable to a tax.<sup>4</sup> Hoekman and Kostecki (2001, p. 277) note that each Government could choose its “optimal mix” between rent-granting and free access to knowledge for its own territory using IPRs. As Primo Braga and others (2000) show, the strength of intellectual property protection mainly correlated with the level economic development in the 1970s (figure 1).

**Figure 1. Judging the strength of protection of intellectual property rights by the level of economic development**



Source: Primo Braga and others (2000). *Intellectual Property Rights and Economic Development*, Discussion Paper No. 412 (Washington, D.C., World Bank).

<sup>4</sup> With regard to developing countries, the United Kingdom-based Commission on Intellectual Property Rights (CIPR, 2003, p. 6) and Correa (2000) have a more critical view about Western standards of intellectual property protection and its global implementation through the TRIPs Agreement. Maskus (2000 and 2005) is the most prominent scholar among proponents of, broadly speaking, strengthened intellectual property protection.

However, this freedom of choice is restricted nowadays owing to the introduction of minimum standards through the TRIPs Agreement. Imposed norms through a multilateral regime, as discussed in the next chapter, constrain national policy options in intellectual property regulation. Consequently, the agreement has bolstered the debate over IPRs. There is a widely shared view among economists that a uniform application of TRIPs Agreement standards and their implementation is problematic as regards the level of economic development and institutional capacities.<sup>5</sup>

Therefore, while generally strengthened intellectual property systems in the newly industrialized countries (NICs) of Asia could enable further success in attracting foreign direct investment (FDI) and enhancing their own technological advance, in the case of the least developed countries (LDCs) these measures might be inappropriate, as a study of Hoekman and others (2004) indicates. According to the state of development, they suggest (see table 1) adjusted IPR strategies within a comprehensive policy package concerning international technology transfer (see next section).

**Table 1. A “rule-of-thumb” typology and examples of international technology transfer policies in developing countries**

	<i>Trade in goods</i>	<i>Foreign direct investment</i>	<i>Trade in knowledge (licensing)</i>	<i>Intellectual property rights</i>	<i>Temporary movement</i>	<i>General technology policies</i>
Low-income countries	Liberal access	Inward investment promotion	Improve information flows about public domain and mature technologies	Basic protection and minimum standards	Incentives for education abroad	Basic education; improve infrastructure; reduce entry barriers
Lower middle income countries	Liberal access	Inward investment promotion	Improve information; limited incentives for licensing	Wider scope of protection; employ flexibility	Incentives for education abroad and training-related movement	Research and development support policies; improve public-private collaboration
Upper middle income countries	Liberal access	No active policy	No active policy	Full TRIPs	Encourage two-way mobility	Research and development support policies

*Source:* Extracted from Bernhard M. Hoekman and others (2004). *Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options*, Policy Research Working Paper No. 3332 (Washington, D.C., World Bank), p. 32.

<sup>5</sup> See Hoekman and Kostecki, 2001; Primo Braga and others, 2000; Hoekman and others, 2004; CIPR, 2003; Correa, 2000.

**(b) *Internationalization of production and knowledge-based economy***

Both intellectual property regulation in general and intellectual property protection in particular have become a matter of concern beyond national borders: for business and politics in industrialized countries and subsequently in developing countries. This paper argues that the emergence of the TRIPs Agreement and its implications for developing countries are strongly linked to globalization. At the same time, the TRIPs Agreement and its global impact are also a crucial part of globalization.

Globalization is a term of wide comprehension; although it is extensively used, it is also contested at the same time. The view taken in this paper distinguishes between economic and political integration in trade and finance as two major forces in the whole process of globalization. A general account of globalization found in the White Paper on Globalization and Poverty (2000) produced by the Government of the United Kingdom of Great Britain and Northern Ireland explains economic globalization and puts the political aspects of globalization loosely beside it:

In fact, globalization means the growing interdependence and interconnectedness of the modern world.... The increased ease of movement of goods, services, capital, people and information across national borders is rapidly creating a single global economy. The process is driven by technological advance and reductions in the cost of international transactions, which spread technology and ideas, raise the share of trade in world production, and increase the mobility of capital. It is also reflected in the diffusion of global norms and values, the spread of democracy and the proliferation of global agreements and treaties...(cited in Weiss, 2002, p. 140)

Although the definition gives a comprehensive account, it is important to emphasize that both integration processes are intertwined with each other in the context of the TRIPs Agreement. Today's state of economic globalization and foremost liberalization can be understood only with regard to the governing multilateral institutions in trade and finance and the involvement of national Governments (see Rodrik, 1999; Krasner, 2000). On the other hand, most of the debate on globalization focuses on the diminishing scope for national policymaking due to exogenous constraints and the emergence of transnational corporations (TNCs) as transnational actors (Strange, 2000; Frieden and Rogowski, 1996).

Today's economic globalization has introduced two trends, which are important in order to identify the implications of the TRIPs Agreement for national intellectual property protection in the context of economic development: the internationalization of production and the development of a global knowledge-based economy, which combined have led to the internationalization of R and D. All three trends are introduced in turn below.

(i) *Internationalization of production*

The above term describes the process of dispersion of production through arm's length trade, licensing<sup>6</sup> and most importantly FDI by TNCs, which seek new markets, resources, lower production costs and efficiency (Campos and Kinoshita, 2003, pp. 5-6). As outlined, technology (most importantly, information and communications) and liberal trade and investment policies have helped to reduce transaction costs and thereby have facilitated outsourcing of parts of production by TNCs to developing countries. FDI, i.e., the establishment of an affiliate abroad and the related internalization of technology transfer, has become the most important channel of internationalization of production. In effect, the inflow of FDI has grown rapidly in the last two decades, especially in the ESCAP region. Rajan (2005, p. 5) points out that "FDI has been found the most stable source of external finance for developing countries in the Asian and Pacific region".

Rajan (2005, pp. 9-10) emphasizes that in developing countries the growth of the "old", trade-based type of "production fragmentation" in consumer goods industries, such as garments and footwear, is outpaced by the "new", investments-based type involving sectors such as "airliners, computers, semiconductors, automobiles and many other products". Thus, the share of production by TNC affiliates producing on a "hi-tech" level is rising in developing countries. This trend offers potential gains for host countries in terms of economic growth and technology spillovers. The role of TNCs as actors in and sources of global trade and investment cannot be overestimated, since they account for "around two-thirds of world trade for the latter half of the 1990s" (UNCTAD, 2002, p. 153).

(ii) *The knowledge-based economy*

The second characteristic of today's economic globalization highlights the increasing importance of knowledge in the economy and society: the so-called knowledge-based economy.<sup>7</sup> The *World Development Report 1998/1999* (World Bank, (1998, pp. 6-8) argues that knowledge has become the crucial factor for development, as it has become for the global economy with its implications for R and D expenditure:

The creation of technical knowledge – as measured by patents issued, although not all technical knowledge patented – is expanding rapidly. [Within only four years, the number of patent applications worldwide increased from 1.4 million in 1989 to

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6 Licensing is another important channel of technology transfer. With reference to international technology transfer (ITT), Hoekman and others (2004, p. 3) summarize: "A third major channel of ITT is direct trade in knowledge via technology licensing. This may occur within firms, among joint ventures, or between unrelated firms. Licensing and FDI are often substitutes. Which form is preferable to technology owners depends on many factors, including the strength of IPRs protection".

7 The term gained relevance through the OECD report entitled "The Knowledge-Based Economy" (Paris, OECD, 1996).



2 million in 1993. Continuous innovation, automation, and competition in the creation and use of knowledge have shortened product cycles in many industries. UNCTAD (2005, p. 99) summarizes the implications for developing countries: Technology is advancing faster than ever before. Developing countries that fail to build capabilities enabling them to participate in the evolving global networks of knowledge creation risk falling further behind in terms of competitiveness as well as economic and social development.

As OECD (2000, p. 27) states, innovation and technological change are the key drivers for economic growth. OECD (2000, p. 32) also sees evidence that “more than before, innovation is now at the core of economic activity”. The evolution of R and D expenditures over time support this view: total R and D spending worldwide increased from \$438 billion in 1991 to \$576 billion in 1996 to \$677 billion in 2002 (UNCTAD, 2005, p. 105). Private spending amounted to \$449.8 billion in 2002 (UNCTAD, 2005, p. 105), accounting for 66.5 per cent of worldwide R and D spending, and therefore it should be considered as an important source of national R and D activities (table 2). The share is constantly growing in most of the OECD countries (OECD, 2000, p. 28).

The “knowledge gap” (World Bank, 1998) or “technology gap” (UNCTAD, 2005) is still of concern for researchers, because the geographic concentration of R and D remains pronounced (table 2). In this regard, TNCs, mainly from the industrialized countries, can form the missing link for improved accession to the increasing global production and private financing of R and D, as argued below.

International technology transfer again gained attention among researchers and policymakers with introduction of the TRIPs Agreement, since the approach focuses on all relevant policies that enhance the ability of a developing country to absorb foreign technology, including intellectual property protection (see Hoekman and others, 2004; Primo Braga and Fink, 1999). In the post-TRIPs Agreement debate, studies focused on imitation as a channel of transfer, which nevertheless basically ceased to exist as a policy option with the full implementation of the TRIPs Agreement (see Davis, 2005, p. 7).

In the age of globalization, FDI, trade and licensing nowadays form legitimate and growing options for having a stake in the global network involving foreign technology. National policies that take a proactive approach may provide opportunities for countries to benefit from an integrated global economy. In contrast, a defensive approach to the new constraints in national intellectual property regulation may lead to losses of national welfare, for example, in terms of (potential) investments and constrained accession to foreign high-technology goods, such as pharmaceuticals. The sole implementation of the TRIPs Agreement without using “wiggle room” (Holmes, 2004, p. 27) and tailoring regulation to domestic conditions as well as the lack of adaptation to the new global standards and insufficient enforcement may have unfavourable effects.

**Table 2. Home economies of the 700 largest research and development-spending firms of the world, 2003; and research and development spending, 2002**  
(Billions of United States dollars)

<i>Rank</i>	<i>Number of firms</i>	<i>Percentage of largest 700 research and development spenders</i>	<i>Economy</i>	<i>Total research and development</i>	<i>Business research and development</i>
1	296	42.3	United States	276.2	194.4
2	154	22.0	Japan	133.0	92.3
3	53	7.6	Germany	50.2	34.8
4	39	5.6	United Kingdom	29.3	19.6
5	35	5.0	France	32.5	20.6
6	20	2.9	Switzerland	n.a.	n.a.
7	15	2.1	Sweden	9.4	7.3
8	10	1.4	Republic of Korea	13.8	10.4
9	8	1.1	Denmark	n.a.	n.a.
10	8	1.1	Taiwan Province of China	6.5	4.0
...					
22	2	0.3	China	15.6	9.5
...					
28	1	0.1	Hong Kong, China	1.0	0.3
...					
	<b>700</b>	<b>100.0</b>	<b>Total/ World</b>	<b>676.5</b>	<b>449.8</b>

Source: Extracted from UNCTAD (2005). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva), pp. 105 and 121.

(iii) *Internationalization of R and D*

The *World Investment Report: Transnational Corporations and the Internationalization of R&D* (UNCTAD, 2005) investigates a relatively new development, which can be interpreted as a result of both of the previously outlined trends of economic globalization: the so-called internationalization of R and D. It highlights an outstanding new opportunity for developing countries, primarily NICs, to participate in the global creation of knowledge and technological progress. It can be interpreted as the final step of the internationalization and geographic fragmentation of production, because it is a very sensible part of economic activity with vital investments at stake involving highly skilled personnel. Furthermore, it emphasizes both the importance of TNCs as sources of foreign

capital and technology as well as connectors to the “global technology and innovation networks led by these firms” (UNCTAD, 2005, p. 99).

The report (UNCTAD, 2005, p. 99) explains that, in relation to the fast-proceeding offshoring of services in the past few years, R and D is evolving from the “least internationalized function[s] of TNCs” to the fastest fragmenting function, such as in the case of German TNCs, which invested more abroad in the 1990s than in the preceding 50 years (table 3).

**Table 3. German research and development-related FDI abroad, 1995-2003**

<i>Year</i>	<i>FDI stock in research and development foreign affiliates abroad (Millions of United States dollars)</i>	<i>Number of research and development foreign affiliates</i>	<i>Employment of research and development foreign affiliates (Thousands of United States dollars)</i>
1995	43.2	20	2
1996	83.8	25	2
1997	133.8	31	3
1998	199.6	55	5
1999	467.7	59	6
2000	647.7	89	9
2001	630.0	105	10
2002	934.3	73	11
2003	891.4	78	11

*Source:* UNCTAD (2005). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva), p. 124.

In general, R and D activities in developing countries emerge now from simple adaptation processes to research, whereas TNCs are seeking “access to foreign pools of research talents” (UNCTAD, 2005, p. 99). This global development is fastest in Asia (UNCTAD, 2005, p. 100). As Weiss (2002, p. 131) points out, Singapore was successful in adopting a proactive strategy, which combines tax incentives and direct grants for R and D with the “provision of a high technology infrastructure based on public sector research institutes and universities”. Nowadays, 50 per cent of Singapore’s R and D is conducted by foreign affiliates (UNCTAD, 2005, p. 125). Regarding the intellectual property system and the rule of law, Mr. Lee Kuan Yew, former Prime Minister of Singapore, emphasized the strategy of his country in an interview with a German news magazine,<sup>8</sup> noting that Singapore offers an advanced legal system with effective courts and strong protection of intellectual property in order to attract investors from technology-sensitive firms, especially in the pharmaceutical industry.

<sup>8</sup> “Es ist dumm, Angst zu haben”, *Der Spiegel*, No. 32, 2005, pp. 89-91.

UNCTAD (2005, pp. 99, 102) has emphasized that R and D can be found at the peak of the so-called pyramid of innovation. Thus, it embodies FDI with the most value added in terms of technological spillovers. However, it requires ambitious host-country features, among which “stable and efficient legal and governance systems” should be included (UNCTAD, 2005, p. 116). UNCTAD data (2005, p. 125) from 1993 to 2002 show that “R&D expenditure of foreign affiliates in host countries worldwide” has risen from \$29 billion or 10 per cent of global business R and D to \$67 billion, or 16 per cent. The outlined trend draws attention again to general reasoning on factors attracting FDI. Concerning intellectual property protection, UNCTAD (2005, p. 165) concludes:

The design of IPR regimes [national intellectual property systems] may play a less direct but nevertheless important role. For instance, providing effective means of IPR protection may act as a signaling device to international investors. Strengthening the regime may show that the country is willing to “play by the rules” and provide a hospitable investment climate.

### **3. THE EMERGENCE OF THE TRIPs AGREEMENT: TOWARDS A GLOBAL INTELLECTUAL PROPERTY REGIME**

#### ***(a) The WIPO system and unilateral pressure: the emergence of cross-border intellectual property protection***

This section takes a look at the historical preconditions of the TRIPs Agreement regime and outlines its weaknesses. It thereby stresses the political economy of cross-border intellectual property protection and the domestic interests involved, and it outlines the related unilateral and bilateral attempts by industrialized countries to enforce IPRs internationally.

When IPRs were included in the Uruguay round in 1986, intellectual property protection had already been of international concern for over 100 years. In the late nineteenth century, the newly industrialized countries in Europe and the United States had already been working for decades with national patent systems. At this time, the “ability to tailor the nature of their regimes [intellectual property systems] to their own circumstances was unconstrained” as the Commission on Intellectual Property Rights (2003, p.18) emphasizes. Owing to their territorial character, the recognition of IPRs of non-nationals, i.e., importers, became an issue with the increasing level of international trade, because intellectual property protection was mainly part of strategic discrimination and protectionism. When trade rose sharply because of the industrial revolution in Europe and the United States, the profits of the exporting industries, which had prosperous sales abroad due to their technological advances, were at stake.

Consequently, the first international agreements introduced national treatment as the first step to ensure the same rights for foreign and domestic right holders (Scotchmer, 2004, p. 419). The Paris Convention for the Protection of Industrial Property, from its adoption on 20 March 1883, covered patents and trademarks. The Berne Convention for the Protection of Literary and Artistic Works, from its adoption on 9 September 1886, dealt with copyrights and neighbouring rights. Their attempts to harmonize and to constrain national regulations were rather limited (Scotchmer, 2004, p. 419). In addition, their membership did not exceed 20 members until the 1940s (Primo Braga and others, 2000, p. 11).

Since 1974, WIPO<sup>9</sup> administered the growing number of multilateral conventions and treaties. According to the changing circumstances of international trade and investment, WIPO provided a strengthened forum for the evolving system, including step-by-step new IPRs or changed provisions resulting from new agreements. The membership of the revised Paris and Berne conventions grew to over 120 members up to the 1980s (Primo Braga and others, 2000, p. 11). However, the system still had shortcomings compared with the TRIPs Agreement: first, each country had the choice of which agreement of the WIPO system to join; second, for the members, the length of patent protection and the exclusion of certain fields of technology were discretionary; and third, institutional enforcement mechanisms in WIPO were weak.

In the 1980s, industrialized countries started to perceive that “inadequate enforcement of IPRs in importing countries” was reducing “the competitive advantage of their exporting firms” (Hoekman and Kostecki, 2001, p. 277). As previously outlined, global economic integration in terms of rising trade and investment along with the growing importance of technology-intensive goods and innovation are the drivers for the strengthening of cross-border intellectual property protection because of the objections of the technology-exporting industries, mainly in industrialized economies, against the existing international system. Primo Braga (1996, p. 359) noted a “broad consensus” in the literature that “the economic interests involved are significant”.

It is argued that the owners of IPRs in the developed countries, such as pharmaceutical companies or the software industry, pushed their political interest domestically, because they “wished to exploit their technical advantages on an international scale and also to limit expropriation costs from potential rivals” (Maskus, 2000, pp. 83, 78-79; Correa, 2000, p. 5). As previously mentioned, national intellectual property regulation is theoretically created to ensure innovation by allocating the privilege of monopoly to the producers of knowledge at the expense of the consumers. Two rather symmetrical interests can also be found in the domestic political arena regarding cross-border intellectual

<sup>9</sup> Founded in 1970, WIPO became a specialized United Nations agency in 1974 and it is a successor of the United International Bureaux for the Protection of Intellectual Property, which was the international body for overseeing the above-mentioned treaties on IPRs from the nineteenth century.

property protection: on the one hand, exporting industries of medium- and high-technology goods want to capture profit abroad, and on the other, consumers are interested in fair competition in the domestic market between foreign and domestic technology for high quality and low prices (see Scotchmer, 2004, p. 415). With a focus on the innovating export industry and following the outlined economic rationale, it appears that Governments of industrialized countries have to “transnationalize” intellectual property protection at the expense of developing countries in order to secure the domestic production of knowledge. Therefore, the traditional scope of intellectual property regulation within national borders poses a dilemma to industrialized countries.

As shown, complementary to the influence of globalization on domestic policy choices, the domestic arena of policymaking shapes the negotiating position of industrialized countries and their unilateral and bilateral diplomacy with regard to intellectual property protection. While some texts tend to stress the direct influence of interest groups on the TRIPs negotiation outcome, i.e., that captured by business interests. With regard to the dilemma of governing IPRs, Scotchmer (2004, p. 416) offers an explanation from a game-theoretical perspective, which emphasizes that cross-border IPR enforcement is the prevailing national interest:

Capture is undoubtedly an important phenomenon, but I argue that intellectual property policies can become overprotective even if trade negotiators are equally concerned with all domestic interests, those of both consumers and producers. This is because intellectual property is a tool by which cross-border externalities can be recaptured by the innovating country.

The Government of the United States, the most prominent and activist among the industrialized countries (Hoekman and Kostecki, 2001, p. 277), already had unilateral instruments<sup>10</sup> in place since the 1970s to force its trade partners to recognize its standards of intellectual property protection, among which were import restrictions and other sanctions against foreign Governments by the Office of the United States Trade Representative (USTR). Among the targets of unilateral actions were Argentina, Brazil, China, the Republic of Korea, Taiwan Province of China and Thailand (Maskus, 2000, p. 4). So-called unfair practices were filed by the USTR, and identified “prior” targets were informed of deadlines for the removal of those practices. For instance, tariffs on a strategic selection of imported goods would be imposed if there was no response from the targeted country. The application use was so widespread that Canada, the European Community and Brazil even filed complaints under the GATT dispute settlement mechanism concerning the

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<sup>10</sup> First, Section 337 of the 1930 United States Tariff Act was enacted by Congress to constrain imports, if necessary; second, Section 301 of the 1974 Trade Act was targeted at foreign trade partners, as amended by the 1988 Omnibus Trade and Competitiveness Act. Special 301 was dedicated to intellectual property cases. It is widely acknowledged that those laws can be ascribed to interest groups lobbying in Congress (see Hoekman and Kostecki, 2001, pp. 277-278).

intellectual property-related sanctions of the United States (Hoekman and Kostecki, 2001, p. 279).

A second strategy was used by both the European Union and the United States: new intellectual property laws, such as the 1996 European Union Directive on Databases, included a condition of protection for non-nationals, under which the same law would have to apply in the exporting country (Scotchmer, 2004, p. 419). A third approach is to negotiate bilateral or regional intellectual property standards mostly in relation to free trade agreements (FTAs), as outlined in the next section.

### ***(b) The formation and implementation of the TRIPs Agreement: commitments by the developing countries***

IPRs were pushed on to the GATT agenda in the 1970s. Provisions on counterfeiting were subsequently adopted at the Tokyo round. In 1986, the Punta del Este Declaration acknowledged the need to clarify the Tokyo provisions (ICTSD and UNCTAD, 2003, p. 44). In 1995, the TRIPs Agreement together with the WTO framework came into force and established an unprecedented international regime on IPRs, because it includes “minimum standards in virtually all areas of intellectual property protection” (Maskus, 2000, p. 26), as well as directions for administration and enforcement for all WTO members.

In recognition of the shortcomings of the WIPO system, Hoekman and Kostecki (2001, p. 282) observed: “A major attraction of the GATT was that it had an enforcement mechanism”. Besides the previously mentioned dispute settlement mechanism for enforcement, GATT as a multilateral forum for trade negotiations, offered the industrialized countries another crucial characteristic to foster the global strengthening of IPRs: the opportunity to offer incentives in other areas of the trade negotiations in return for the commitments made by the developing countries. In addition, GATT, and subsequently WTO, also had been the best vehicle for establishing a truly global intellectual property regime because of its ever-growing membership and the equally binding obligations of the TRIPs Agreement for all members.<sup>11</sup>

The *quid pro quo* principle of trade negotiations thus offers a basis for why the developing countries accepted such an enormous shift to a new regime, which included all IPRs of WIPO, added new *sui generis* rights and imposed rules of administration and enforcement. A report of the International Centre for Trade and Sustainable Development (ICTSD) and UNCTAD (2003, p. 44) highlights the contradiction: in 1989, when resistance to a substantial agreement on IPRs was dropped, some developing countries had just enabled reforms of their patent systems to facilitate imitation.

<sup>11</sup> Except for the time of implementation: industrialized countries had 1 year, the developing countries and economies in transition had 5 years, and the least developed countries had 11 years. Formally, full implementation of the TRIPs Agreement had to be completed by 2005 at the latest.



The trade-off between different parts of the Uruguay Round “package deal” made the TRIPs Agreement possible. Developing countries hoped that the whole package “would outweigh the economic and social costs” (ICTSD and UNCTAD, 2003, p. 44). Besides the removal of some of protectionist policies, such as in agriculture, substantial commitments were made by industrialized countries concerning the phase-out of the Multifibre Arrangement and the ban on voluntary export restraints. Nevertheless, the developing countries feared also that a refusal might lead to “unilateral arm-twisting” by the United States and the European Union (Hoekman and Kostecki, 2001, p. 280), as had already been experienced by some countries previously.

Some argue that the commitments of developing countries to reform their intellectual property system saw hardly any compensation (Correa, 2000, p. 3; CIPR, 2003, p. 8). However, ICTSD and UNCTAD (2003, p. 45) noted that they still achieved compromises in the TRIPs Agreement extending the transition periods, the scope for national interpretation and a number of exclusions disliked by some TNCs and interest groups. Besides, domestic business interests existed also in oppositional countries, which endorsed the steps forward, especially those in emerging economies that depended on FDI or licensing for technology (Hoekman and Kostecki, 2001, p. 280).

Nonetheless, the number of trade and patent applications indicates where international intellectual property-related payments go: Correa (2000, p. 5) for example, refers to patent statistics in the United States, whereas in the period between 1977 and 1996 only 10 industrialized countries accounted for 95 per cent of the applications, but developing countries accounted for less than 2 per cent of them. Export numbers point to the same situation: the so-called Asian Tigers and Latin American countries together accounted for 11 per cent of medium- and high-technology goods exported to the OECD countries compared with 50.6 per cent of the countries in the Group of Seven (Correa, 2000, p. 5). Maskus (2005, p. 45) stated: “The United States remained, by far, the largest recipient of such fees [related to licensing of patents, copyrights, etc.], earning a net \$20.7 billion in 1995”.

### ***(c) TRIPs Agreement as an international regime and its global impact***

Theories of international relations offer useful insights in understanding the nature of the new international intellectual property system and pointing out the impact of the TRIPs Agreement. As a multilateral agreement within the WTO context, the TRIPs Agreement established a new regime for intellectual property protection. The term “regime” refers to a theoretical concept first coined by Krasner (1983, p. 2), who identified international regimes as “sets of implicit or explicit principles, norms, rules, and decision making procedures around which actors’ expectations converge in a given area of international relations”. Krasner (1983, pp. 4-5) illustrated his theory with reference to GATT. While GATT principles are based on liberal theoretical foundations, i.e., free trade



as the *raison d'être*, their norms reflect standards of behaviour for the cooperating parties, such as reciprocity and national treatment. The rules work basically as norms on a less general level; sometimes they mediate between conflicting principles and norms.<sup>12</sup>

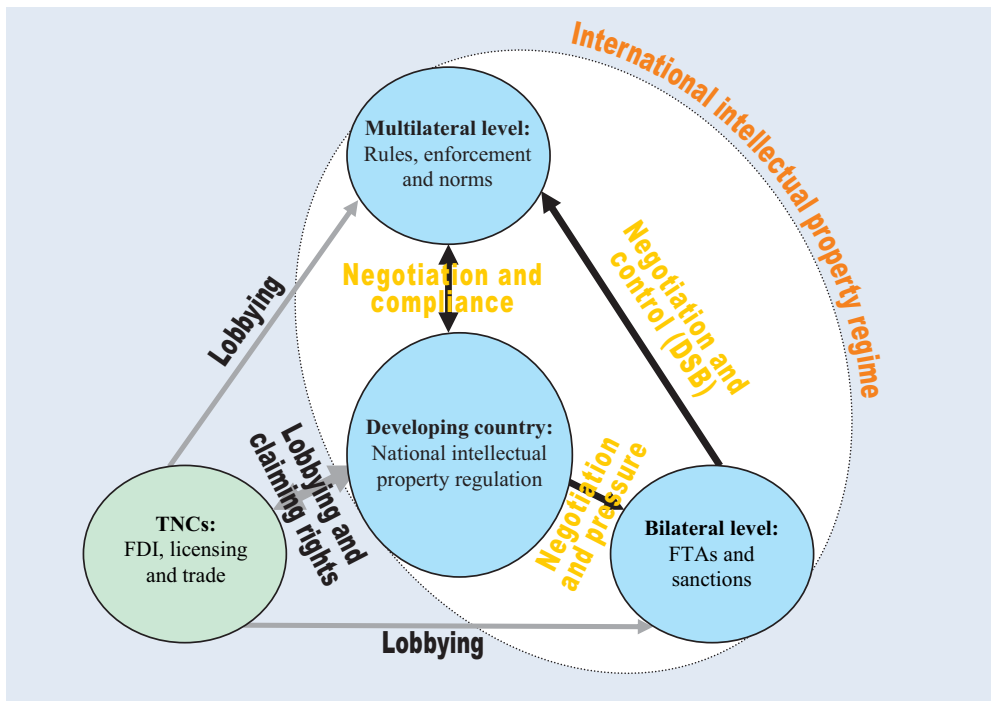
The TRIPs Agreement represents one part of the trade regime established by WTO. Insufficient intellectual property protection was implicitly redefined as protectionist behaviour, therefore conflicting with the free-trade principle of GATT/WTO. However, unlike the provisions on tariff and non-tariff barriers, the agreement establishes rules directly governing national regulations on IPRs by specifying the rights, the duration and the standards for enforcement and administration. The underlying norm is national treatment, which was already included in the WIPO system. Within WTO, its provisions have supranational effect, which means that, by signing and ratifying the agreement, a Member State permits WTO and other members to control its compliance with the TRIPs Agreement and permits the Dispute Settlement Body to impose sanctions in cases of non-compliance.

Hoekman and Kostecki (2001, p. 274) characterized the TRIPs Agreement as “unique in the WTO context”, because “it imposes obligations upon Governments to adopt a set of substantive rules in an area that traditionally has been regarded to be in the purview of domestic regulation”. Maskus (2000, p. 2) came to a similar conclusion about the significance of the TRIPs Agreement: “It is the first multilateral trade accord that aims at achieving partial harmonization in an extensive area of business regulation”. As regards its general implications, both texts share the view that the TRIPs Agreement forms the “vanguard of efforts” (Maskus, 2000, p. 2) to include more regulatory policies in the WTO context, establishing more “‘behind the border’ regulatory regimes” (Hoekman and Kostecki, 2001, p. 274). Other agreements of the Uruguay round besides the TRIPs Agreement also contain some provisions with a direct impact on parts of national regulations, most prominently the General Agreement on Trade in Services (GATS) and the Agreement on Trade-related Investment Measures (TRIMs Agreement), as Holmes (2004) elaborated.

The nature or major characteristic and the impact of the agreement can therefore be summarized as “harmonization of national intellectual property regulation”, because the TRIPs Agreement (and similar parts of the TRIMs Agreement and GATS) implicitly considers harmonization as a norm for the WTO agenda. In effect, national intellectual property systems had to be adapted to the specific provisions. Correspondingly, the use of bilateral pressure and FTAs is a part of the international IPRs regime, whereas industrialized countries use their economic and political power (and bargaining power) to shape the system of norms and rules according to their domestic demand (figure 2).

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<sup>12</sup> This would be the case for the rule on special and differential treatment, which allowed protectionism depending on the country's status as an LDC (Krasner, 1983, p. 4).

**Figure 2. Actors and modes of interaction in the TRIPs Agreement regime**

Source: Carsten Vogel.

General judgements on this development within the WTO framework are mixed. For example, Guy de Jonquières (1998, cited in Holmes, 2004, p. 2) of the *Financial Times* argues: “As liberalization extends deeper into countries’ domestic economies, the opening of markets increasingly requires global disciplines on national regulatory policies”. The economist Rodrik (1999, p. 148) draws a different conclusion and criticizes specifically the TRIPs and TRIMs agreements as “cases of ‘forced’ harmonization”, because they unnecessarily constrain policy choices in participating countries. While Rodrik (1999, pp. 147-148) generally embraces better regulatory standards serving transparency, in his view both agreements fail to present a solution for developing countries, which would either improve economic performance or exhibit democratic legitimacy by avoiding discrimination of social groups.

As for the case of bilateral pressure by industrializing countries, Rodrik’s argument is strengthened, because the respective FTAs evidently represent specific interests in IPR enforcement rather than good solutions for the trade partners. The United States, most prominently among other industrialized countries, uses FTAs as another channel of

influence to expand national intellectual property regulation of trading partners beyond the provisions of the TRIPs Agreement. The World Bank (2005, p. 1) reports that the United States trade diplomacy has undergone a “considerable shift” by introducing intellectual property provisions as a “central element” into regional and bilateral FTAs. Besides the general trend towards bilateral and regional FTAs, the strategy is to enforce and even extend *tête-à-tête* what had been achieved in WTO since 1995. As in the GATT negotiations, the demand for stronger intellectual property protection and enforcement is combined with incentives of preferential access to an attractive trade partner.

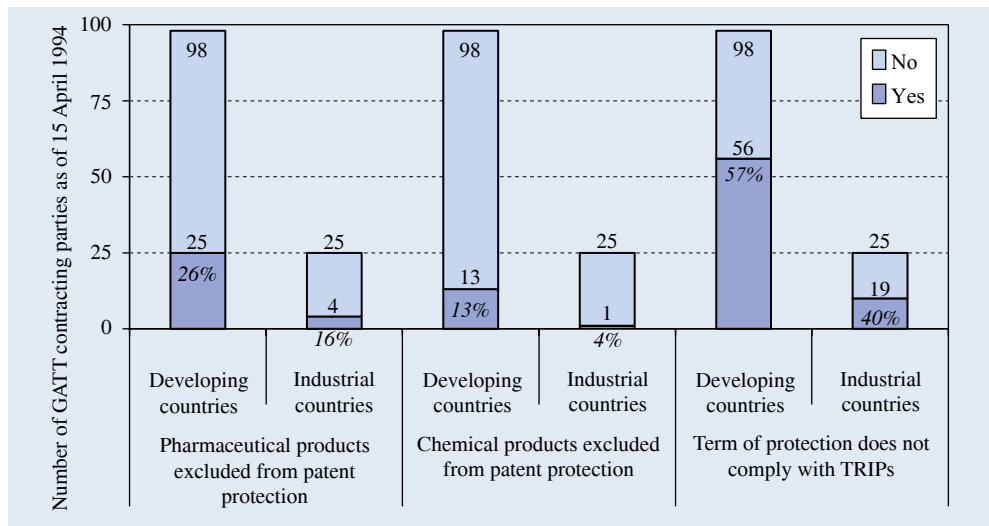
In the United States, the domestically perceived decline of competitiveness has led to aggressive ways to secure the technological margin in the global economy. The objective is to achieve protection that “[...] reflects a standard of protection similar to that found in the United States law”. (USTR, 2002, cited in World Bank, 2005, p. 1) Signatories of such new FTAs have been Australia, the Hashemite Kingdom of Jordan, Singapore and Viet Nam, among others (with different provisions on intellectual property protection), using the *quid pro quo* approach of trade agreements for their own advantage. The World Bank (2005, pp. 2-3) identifies some common elements in the provisions of respective FTAs, which, for instance, affect exemptions of patent protection,<sup>13</sup> constrain compulsory licensing of pharmaceutical patents, or special protection for pharmaceutical test data. All three reflect the existing but declining comparative advantage of the United States pharmaceutical and medicine industry (Maskus, 2000, p. 78).

Both the TRIPs Agreement on a global level and FTAs in specific countries achieved harmonization. Intellectual property systems in developing countries have undergone considerable changes since 1995. Primo Braga (1996, p. 356) points out that a look at some basic intellectual property law provisions shows that the “agreement will require significant reforms in... legal regimes” concerning the protection in certain sectors as well as protection periods (figure 3).

The respective institutional capacity for the implementation of the TRIPs Agreement has always been a concern. It is argued that judicial systems are already overstretched (Primo Braga, 1996, p. 358). Numbers estimated by the World Bank and UNCTAD show that setup costs can reach millions of dollars, and annual costs such as in Bangladesh can exceed \$1 million each year (World Bank, 1999; UNCTAD, 1996, cited in ICTSD and UNCTAD 2003, p. 50). However, a look at what Holmes (2004, p. 27) calls “wobble room” emphasizes the options that States have for implementation. For instance, the breadth of a patent can be defined according to its own requirements, and approval for patents from other countries can be denied if they are perceived as invalid (Holmes, 2004, p. 27). Furthermore, strategic choices for national intellectual property systems are left, as regards FTA negotiations, with industrialized countries as well as for further patent

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<sup>13</sup> No exemption of plants and animals from patentability as in the TRIPs Agreement, for example.

**Figure 3. Patent protection, 1994**

Source: Recreated according to Carlos A. Primo Braga (1996). "Trade-related intellectual property issues: the Uruguay round agreement and its economic implications", in Will Martin and L. Winters, eds., *The Uruguay Round and the Developing Countries* (Cambridge, Cambridge University Press), p. 357.

harmonization in relation to the Patent Cooperation Treaty of WIPO<sup>14</sup> or the draft substantive patent law treaty. Nonetheless, the process of further, voluntary patent harmonization has gained momentum, especially in the last few years, as the patent statistics of WIPO show: from 40,000 applications in 1995 to more than 120,000 in 2004 (2005, p. 3).

#### 4. CONCLUDING REMARKS

From a developing country's perspective, implementation of the TRIPs Agreement has imposed costs on a large scale, but not just in terms of its immediate implementation and enforcement capacities. The agreement also adjusts continuous transfer payments directly and indirectly in terms of license fees and prohibiting imitation for industrial development and for producing cheap consumer goods. However, the impact of the TRIPs Agreement goes further, as globalization generally constrains domestic policy choices for economic policy, the TRIPs Agreement defines the scope and types of IPRs and dictates the

<sup>14</sup> The treaty lowers considerably the transaction costs for patent protection in different regulatory environments, because the treaty facilitates protection in multiple member countries with one application (Primo Braga, 1996, p. 360; Maskus, 2000, p. 67).

rules for enforcement and administration in national intellectual property systems. In 2005, major changes in intellectual property systems in developing countries were mostly finished, but the question whether or not the enforcement can be managed is left open.

Analysis of the preconditions and the characteristics of the international intellectual property regime (consisting of the TRIPs Agreement in the WTO framework and its parallel unilateral and bilateral attempts by industrialized countries) elaborates how and why this unprecedented harmonization effort by the industrialized countries was made feasible. Discussion of the economic rationale and the political economy of intellectual property protection made clear that industrialized countries faced a dilemma, as intellectual property regulation coverage was traditionally within national borders but the innovating industries increasingly exported and invested abroad. Owing to the weaknesses of the WIPO system, GATT/WTO offered the best institutional environment for cross-border enforcement of IPRs. The *quid pro quo* character of trade negotiations along with the mixed positions led to a decline in resistance against such a far-reaching agreement among the developing countries.

On the other hand, the WTO framework has been moved towards European Union-style “deep integration” through the adjustment of national regulations to common standards, most importantly with the TRIPs Agreement (see Holmes, 2004, pp. 6-7). Industrialized countries still seek to push the achieved harmonization beyond the provisions of the TRIPs Agreement in order to protect their domestic intellectual property-related interests. Overall, through the TRIPs Agreement and secondary attempts, industrialized countries were able to “transnationalize” their concept of intellectual property protection and their high standards of protection according to their state of industrial development rather than that of developing countries.

The emergence of the international intellectual property regime also comprises implications for policymakers in developing countries that go beyond the commitment to implement an international agreement. It means that TNCs, the main actors in the global production network and innovators in the knowledge-based economy, generally prefer higher standards of intellectual property protection with regard to the relocation of intellectual property-sensitive and technology-intensive parts of production. For that reason, ever-growing investments in R and D and shorter product cycles for staying on the competitive edge have increased the willingness of TNCs to reap the rewards for technological advance. The internationalization of R and D shows that TNCs are increasingly willing to relocate intellectual property-sensitive and vital parts of production to developing countries. The TRIPs Agreement might have paved the way by ensuring respective protection standards; however, a comprehensive strategy for economic development that integrates intellectual property regulation in a package of policies, including education and general technology policies as well as proactive policies towards FDI and trade, remains essential.

Structurally, developing countries played a passive role in both economic integration, driven mainly by TNCs of industrialized countries, and the parallel political integration in the context of GATT/WTO. Nevertheless, as the trend of internationalization of R and D illustrates, today's global production networks offer an opportunity to benefit from continuous production fragmentation as well as to participate even in the "production of knowledge" in order to climb the technology ladder. Furthermore, so-called wiggle room is still left in the provisions of the TRIPs Agreement in order to adjust the national intellectual property system to the individual situation, and States may choose whether to finalize and ratify preferential trading arrangements which contain WTO plus intellectual property provisions.

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