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INTELLECTUAL PROPERTY AND TRANSFER OF TECHNOLOGY IN FOREIGN INVESTMENT LAW WITH SPECIAL REFERENCE TO VOLUNTARY LICENSING IN THE AFTERMATH OF COVID-19

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ABSTRACT

Intellectual Property Rights are widely acknowledged as fundamental means for protecting the "creations of mind" and guarantying just revenues and incentives to their owners. Simultaneously, as technological progress is not equally disseminated around the globe, contributing to the unequal distribution of well-being, advocating for international transfer of technology is within the agenda of major multilateral organizations.

At the heart of this dissertation lies this tension between appropriate protection of Intellectual Property Rights and broader diffusion of technological progress, which has been analyzed through an extensive use of primary resources retrieved from domestic and international organizations' databases and complemented with various national pieces of legislations. The result is a currently review of the posture of state actors over this issue, completed with the most recent debate within the WTO over voluntary licensing agreement in the aftermath of Covid-19.

Keywords: intellectual proper rights, international transfer of technology, voluntary licensing.

I Diritti di Proprietà Intellettuale sono ampiamente riconosciuti come strumenti fondamentali per proteggere le "creazioni della mente" e garantire i giusti ricavi e incentivi ai loro proprietari. Allo stesso tempo, poiché il progresso tecnologico non è distribuito in modo uniforme in tutto il mondo, contribuendo alla distribuzione diseguale del benessere, la promozione del trasferimento internazionale di tecnologia è nell'agenda delle principali organizzazioni multilaterali.

Al centro di questa tesi risiede la tensione tra una protezione adeguata dei Diritti di Proprietà Intellettuale e una più ampia diffusione del progresso tecnologico, che è stata analizzata attraverso un ampio utilizzo di risorse primarie recuperate dai database delle organizzazioni nazionali e internazionali, integrate con varie normative nazionali. Il risultato è una revisione attuale della posizione degli attori statali su questa questione, completata con l'ultimo dibattito all'interno dell'OMC sugli accordi di licenza volontaria nel periodo successivo al Covid-19.

Parole chiave: diritti di proprietà intellettuale, trasferimento tecnologico internazionale, contratti di licenza.

LIST OF ABBREVIATIONS

BIT, Bilateral Investment Treaty

EPA, Economic Partnership Agreements

FDI, Foreign Direct Investment

GA, General Assembly (of the United Nations)

GATT, General Agreement on Tariffs and Trade

IIAs, International Investment Agreements

IP, Intellectual Property

IPRs, Intellectual Property Rights

LDCs, Least Developed Countries

OECD, Organisation for Economic Cooperation and Development

R&D, Research and Development

TIPs, Treaties with Investment Provisions

TRIMS, Trade-Related Investment Measures

TRIPS, Trade-Related Aspects of Intellectual Property Rights

UN, United Nations

UNCITRAL, United Nations Commission on International Trade Law

UNCTAD, United Nations Conference on Trade and Development

US, United States

WIPO, World Intellectual Property Organisation

WTO, World Trade Organization

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INTRODUCTION

Technology is an essential factor in boosting productivity, achieving economic development, and promoting export growth. However, technology innovation does not appear unexpectedly (at least in most of the cases) but it is the result of significant Research and Development (R&D) investments interconnected with a legal, economic, and human framework equipped to "absorb" it. This is typically accomplished in developed countries, where these factors coexist, resulting in a widening of the gap with least advanced economies, and in a "regional" dimension of innovation[1].

Consequently to this phenomenon, transfer of technology across borders (ToT), i.e., "*the transfer of systematic knowledge for the manufacture of a product, for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods*"[2] is crucial in assuring that state-of-the-art innovations are disseminated in developing countries to sustain their catch-up process and foster their integration in global value chains.

This issue, as we will extensively appreciate throughout the dissertation, is widely acknowledged by several International Organizations, specific Committees, and Working Groups, such as, *inter alia,* the Organisation for Economic Cooperation and Development (OECD)[3], the United Nations Conference on Trade and Development (UNCTAD)[4], the United Nations Commission on International Trade

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[1] Maraut, S., Dernis, H., Webb, C., Spiezia, V., & Guellec, D. 2008. "THE OECD REGPAT DATABASE: A PRESENTATION." STI Working Paper 2008/2. Statistical Analysis of Science, Technology and Industry. Available at: https://www.oecd.org/science/inno/40794372.pdf.

[2] UNCTAD. 1985. "Draft International Code of Conduct on the Transfer of Technology as at the close of the 6th session of the Conference on 5 June 1985: note by the UNCTAD Secretariat", Definition of transfer technology, available at: https://digitallibrary.un.org/record/86199.

[3] OECD main goal is "*to shape policies that foster prosperity, equality, opportunity and well-being for all*". More information available at: https://www.oecd.org/about/.

[4] UNCTAD is a "*permanent intergovernmental body established by the United Nations General Assembly in 1964, supporting developing countries to access the benefits of a globalized economy more fairly and effectively*". More information available at: https://unctad.org/about.

Law (UNCITRAL)[5], the World Tarde Organization (WTO)[6], the World Intellectual Property Organization (WIPO)[7], the World Bank Group[8]. These Organisations act as discussion forums for all the stakeholders involved in this multilateral and cooperative effort and often provide general guidance and policy priorities. The legal acts and the policy documents of these and other institutions are the backbone of the thesis, enriched with States' official provisions.

In addition to this, proper incentives are necessary for pushing forward the frontier technologies[9]: the certainty of enjoying economically the outcomes of the efforts in R&D is the main factor in developing new technologies. In this framework, Intellectual Property, which "*refers to creations of the mind, everything from works of art to inventions, computer programs to trademarks and other commercial*

[5] UNCITRAL, established by the United Nations General Assembly in 1966 is "*the core legal body of the United Nations system in the field of international trade law*". More information available at: https://uncitral.un.org/en/about.

[6] WTO is an international organization with the aim of ensuring "*that trade flows as smoothly, predictably and freely as possible*". More information available at: https://www.wto.org/english/thewto_e/thewto_e.htm.

[7] Agency of the United Nations, WIPO, as stated in Convention Establishing the World Intellectual Property Organization, aims "*to promote the protection of intellectual property throughout the world through cooperation among States and, where appropriate, in collaboration with any other international organization*". More information available at: https://www.wipo.int/about-wipo/en/.

[8] The World Bank Group reunites five institutions which share the aim of "*reducing poverty, increasing shared prosperity, and promoting sustainable development*". The five institutions are the International Bank for Reconstruction and Development, the International Development Association, the International Finance Corporation, the Multilateral Investment Guarantee Agency, the International Centre for Settlement of Investment Disputes. More information available at: https://www.worldbank.org/en/who-we-are.

[9] Frontier technologies can be defined as "*new and rapidly developing technologies that take advantage of digitalization and connectivity*". UNCTAD recognises 17 frontier technologies, among them: artificial intelligence, internet of things, big data, blockchain, 5G. See: UNCTAD. 2023. "Technology and Innovation Report 2023". Available at: https://unctad.org/system/files/official-document/tir2023_en.pdf.

signs"[10] and Intellectual Property Rights (IPRs)[11] constitute the principal means for companies and inventors in general to yield returns on their investments in knowledge or creativity. The different grade of protection and enforcement of IPRs in countries' legislation[12], as well as tax policies related to it[13], are influential in promoting or hindering Foreign Direct Investments (FDI) across borders, which are one of the means for disseminating cutting-edge technology, along with licensing and joint ventures. Additionally, to properly frame the issue, it is necessary to carefully consider that IP and IPRs commonly fit in the criteria for the definition of investment in numerous IIAs. Thus, it is not a subject of minor prominence but a central question in international investment law.

As a result, in the realm of foreign investment law, are both relevant (and strictly interconnected) the provisions for the protection of IPRs, and the provisions aiming for the widest possible dissemination of new technologies, which form the foundation of economic development and the prosperity of nations. The balancing acts among these divergent forces are at the heart of the dissertation.

Multilateral agreements and intergovernmental organisation were established over the course of time with a view of safeguarding IPRs internationally, while envisaging methods for the international ToT in the interest of Least Developed Countries (LDCs). However, it is noteworthy to acknowledge that the requirements regarding the ToT have always played a limited role in IPRs' Agreements, notably

[10] WIPO. 2020. "What is intellectual property". WIPO Publication No. 450E/20. ISBN 978-92-805-3176-3. Full text available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_450_2020.pdf.

[11] IPRs are traditionally divided in two broad categories: copyrights and rights related to copyrights, and industrial property. The first category refers to "creative" works broadly speaking (e.g. art, music, performances, etc.); the second one comprises trademarks, geographical indications, patents, industrial designs, trade secrets.

[12] Juan C. Ginarte, Walter G. Park. 1997. "Determinants of patent rights: A cross-national study", Research Policy, Volume 26, Issue 3, 1997, Pages 283-301, ISSN 0048-7333, available at: https://doi.org/10.1016/S0048-7333(97)00022-X.

[13] UNCTAD. 2005. Transfer of Technology for Successful Integration into the Global Economy, "Taxation and Technology Transfer: Key Issues.", available at: https://unctad.org/system/files/official-document/iteipc20059_en.pdf.

in the earliest Conventions, in which this concern was totally absent. Still today, the requirements regarding the ToT are seen as the major counterpart demanded by LDCs to their developed fellows for the to-be-accorded protection of IPRs. The limited room agreed to LDCs' legitimate requests has been itself a trigger for the tentative to acquire leading technologies from developed economies through binding the access of foreign firms in their jurisdictions to a determined level of ToT or other less evident "Performance Requirements"[14]. In a further response to these dynamics, the fast-pace-evolving international investment law provisions began to incorporate more and more frequently the prohibition of the mandatory ToT which "*is itself a leading form of performance requirement, although unlike conventional employment and training targets, it is less easy to measure*"[15]. We will closely examine how these economic and historical dynamics still shape the bargain over these issues in the following substantive Chapters.

To resume, the objective of the dissertation is to examine this complex relationship between IPRs and international ToT, shedding light on the trends, the challenges, and the policy consequences for both developed and developing countries, with a focus on the lessons learned from COVID19 pandemic with its impacts on equitable access of pharmaceuticals products.

While this dissertation aims to provide a comprehensive analysis, it is essential to acknowledge its limitations. In this respect, the principal constraint lays in the

[14] A clear example of this dynamic is the US - China trade war. For example see: Qian Yin. 2022. "Forced technology transfer performance requirement in international investment agreements—a Chinese perspective, Journal of Intellectual Property Law & Practice", Volume 17, Issue 2, February 2022, Pages 114–131, available at: https://doi.org/10.1093/jiplp/jpab176.
And: Lee, Jyh-An. 2020. "Forced Technology Transfer in the Case of China". Boston University Journal of Science & Technology Law, Vol. 26, No. 2, 2020. The Chinese University of Hong Kong Faculty of Law Research Paper No. 2020-18, Available at SSRN: https://ssrn.com/abstract=3682351.

[15] Collins, D. 2023 2nd edition. "Performance Requirements and Investment Incentives Under International Economic Law". Elgar International Investment Law Series. University of London, UK.

study's primarily focus on a *selection* of key international treaties, national legislations, and public-private partnerships, thus not encompassing *every* possible jurisdiction or agreement. This is particularly true regarding public-private partnership, due to the limited public availability of open-source resources.

Having specified that, following this introductory chapter, the dissertation is structured as follows: Chapter I provides an overview of the modern evolution of the protection of IPRs, focusing on how the core principles were established until nowadays mechanisms of cooperation. In Chapter II we analyse developed states practices through the most recent reports they shall submit according to WTO TRIPS legal obligations and the states approach over public-private partnerships. Chapter III deals with the aftermath of COVID19 pandemic and the debate on the realm of IPRs and voluntary licensing. The final chapter presents a brief summary of the findings and their implications for possible future research and policy development.

I. INTELLECTUAL PROPERTY RIGHTS AND TECHNOLOGICAL TRANSFER

I.I. THE ESTABLISHMENT OF THE CORE PRINCIPLES: THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY

Lodovico Brunetti[16], professor of pathological anatomy at University of Padua, presented his innovative model of a cremating apparatus at the Vienna Exposition of 1873. Even if his creation impressed Sir Henry Thompson, Surgeon to Queen Victoria, and reawoke the interest in the subject, of particular significance to us is the circumstance that a number of foreign exhibitors refused to attend the Vienna fiery concerned their ideas would be stolen due to no international agreements were in place to protect "the work of their minds" abroad.

In response to this, the first major international agreement regarding intellectual property was adopted: the Paris Convention for the Protection of Industrial Property of 1883[17].

The Convention dealt with the protection of industrial property in a "*broadest sense*" (Article 1.3), including "*patents, utility models, industrial designs, trademarks, service marks, trade names, indications of source or appellations of origin, and the repression of unfair competition*" (Article 1.2). Of particular importance were the general substantive provisions on national treatment (Article 2 and Article 3), the right of priority (Article 4) and a series of common rules still extremely relevant today and specifically tailored on patents, marks, industrial designs, trade names, indications of source, unfair competition. It is useful to closely examine these core obligations, as they were the first, basic principles laid out by a modern multilateral instrument.

National Treatment provisions required every State party to the Convention to provide to nationals of other participating States with the identical level of

[16] Brief biography available only in Italian at: https://www.treccani.it/enciclopedia/lodovico-brunetti_%28Enciclopedia-Italiana%29/.

[17] Full text of the Paris Convention available at: https://www.unido.org/sites/default/files/2014-04/Paris_Convention_0.pdf.

protection of all industrial properties and with "*legal remedy against any infringement of their rights*" accorded to its own citizens (Article 2.1) without imposing requirements such as "*to domicile or establishment in the country where protection is claimed*" (Article 2.2). Individuals from non-participating States also qualify for National Treatment according to the Convention if they are "*domiciled or have a real and effective industrial or commercial establishment*" in a participating State (Article 3). Thus, the overarching National Treatment principle was adopted in an IPRs protection Agreement.

Right of priority referred to the possibility granted to a person to apply for the protection in any other contracting country for a fixed period of time if a duly filed "*application for a patent, or for the registration of a utility model, or of an industrial design, or of a trademark*" had been made. More specifically, for a period of "*twelve months for patents and utility models, and six months for industrial designs and trademarks*" the person is entitled to apply for the protection, thus having a priority over applications in other countries that may have been made in the course of the agreed period (Article 4).

Pertaining to patents, the Convention stated noteworthy principles including: the independence of patents from "*patents obtained for the same invention in other countries, whether members of the Union or not*" (Article 4bis), implying that the issuance of it in one Contracting State does not impose an obligation on other Contracting States to grant it. Furthermore, the same applies for refusing, annulling, or terminating of a patent that shall not be grounded on its refuse, annulation, or termination established in any other Contracting State. These provisions reveal the determination of not interfering with domestic laws, as IPRs were seen as a major tool in policies for industrialization; the right of inventor to be mentioned in the patent (Article 4ter); the patentability in case of "*restriction or limitations* [of sale] *resulting from the domestic law*" (Article 4quater), thus not binding patentability with the permitted (or not) commerciality of the product; lastly, legislative measures can be taken "*to prevent the abuses which might result from the exercise of the exclusive rights conferred by the patent, for example, failure to work*": these legislative measures can materialise as compulsory licenses, (thus not agreed by the patentee but by a public authority), or forfeitures "*if the grant of compulsory license*

would not have been sufficient to prevent the said abuses" (Article 5A)[18]. This provision on compulsory licensing is still extremely relevant today.[19]

In relations to notable principles concerning marks, the Convention, at its Article 6.1, does not regulate "*the conditions for the filing and registration of trademarks*" that "*shall be determined in each country of the Union by its domestic legislation*" and, simultaneously, at paragraph 2, requires that "*an application for the registration of a mark filed by a national of a country of the Union in any country of the Union may not be refused, nor may a registration be invalidated, on the ground that filing, registration, or renewal, has not been effected in the country of origin*". Paragraph 3 pointed out the independence of marks, similar to the early referred provision regarding patents. These provisions confirm the consideration outline earlier over the will of not interfering with domestic laws over IPRs. Article 6bis and 6ter compelled the States party respectively "*to refuse or to cancel the registration, and to prohibit the use, of a trademark which constitutes a reproduction, an imitation, or a translation, liable to create confusion, of a mark considered by the competent authority of the country of registration or use to be well known in that country*" and "*to refuse or to invalidate the registration, and to prohibit by appropriate measures the use, without authorization by the competent authorities, either as trademarks or as elements of trademarks, of armorial bearings, flags, and other State emblems, of the countries of the Union, official signs and hallmarks indicating control and warranty adopted by them, and any imitation from a heraldic point of view* […] *shall apply equally to armorial bearings, flags, other emblems, abbreviations, and names, of international intergovernmental organizations*". Lastly, Article 6quinquies read as follows "*Every trademark duly registered in the country of origin shall be accepted for filing and protected as is in the other countries of the Union, subject to the*

[18] The Article fixed a detailed framework of conditions for the implementation of these prerogatives, such as fixed periods that shall pass before the deployment of compulsory licenses and forfeitures, and the right of the patentee to justify his inaction.

[19] See: https://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm#:~:text=Compulsory%20licensing%20is%20when%20a,the%20patent%2Dprotected%20invention%20itself.

reservations indicated in this Article". The refuse of the filing may be based on specific reservations, namely: if the mark would "*infringe rights acquired by third parties*"; it would be devoided of "*any distinctive character*"; it would be "*contrary to morality or public order and, in particular, of such a nature as to deceive the public*".

Article 5quinquies and Article 8 concerning respectively the protection of industrial designs and the protection of trade names without the obligation of filing or registration, and Articles 9 and Article 10 on seizure on importation of "*goods unlawfully bearing a trademark or trade name*" or "*in cases of direct or indirect use of a false indication of the source of the goods or the identity of the producer, manufacturer, or merchant*" completed the regulatory framework, together with Article 10bis which enumerated a list of acts deemed as unfair competition. The last three Articles cited substantiated an early form of international enforcement but still depended on purely domestic legal remedies. To complete the framework originated by the Convention, it interesting to briefly cite Article 11 on "Temporary protection at certain International Exhibition", which exactly tackled the issue emerged at the Vienna Exposition, and Article 12, which require for every county of the Union to "*establish a special industrial property service and a central office for the communication to the public of patents, utility models, industrial designs, and trademarks*".

After the Paris Convention, a number of other agreements were introduced to guarantee adequate protection, most notably the Berne Convention for the Protection of Literary and Artistic Works (1886), the Madrid Agreement Concerning the International Registration of Marks (1891) and its Protocol (1989), until the constitution of WIPO in 1970[20]. These instruments served different

[20] WIPO website provides a brief story of the milestones regarding IPRs available at: https://www.wipo.int/about-wipo/en/history.html. Other agreements relevant for the international law framework are the International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (Rome Convention, 1961) and the Washington Treaty on Intellectual Property in Respect of Integrated Circuits (adopted 1989 but not entered into force). Moreover, the website provides the legal texts and the preparatory documents of the 26 international IP treaties administered by WIPO, including the WIPO Convention.

purposes in respect of the Paris Convention, and in the broad realm of IPRs, and thus hold significance for the further analysis.[21]

I.II. The Berne Convention for the Protection of Literary and Artistic Works

The Berne Convention for the Protection of Literary and Artistic Works[22], as suggested by its name, was focused on copyrights and related rights rather than industrial property rights as in the early referred Paris Convention. As we did with the latter Convention, is useful to highlight the core principles and some of its substantive articles.

After listing in Article 2.1 the "Literary and artic works" under its scope, the Convection, at Article 5.1, accorded to authors the enjoyment "*in countries of the Union other than the country of origin, the rights which their respective laws do now or may hereafter grant to their national*", namely the national treatment principle. The enjoyment of these rights, according to the principle of automatic protection, "*shall not be subject to any formality*"[23], and "*shall be independent of the existence of protection in the country of origin of the work*", according to the principle of independence (Article 5.2). A set of minimum standards regarding the protection are fixed, including on duration (Article 7.1, "*the term of protection granted by this Convention shall be the life of the author and fifty years after his death*", with exceptions listed hereafter in the Article) and on certain rights recognized as exclusive rights of authorization (i.e., only the authors may authorize: the translation (Article 8), the reproduction (Article 9, with limitations hereafter listed), the public performance and the communication to the public of a

[21] Analysing the provisions of all the WIPO-administered treaties is out of the scope of the dissertation. Thus, the three instruments have been selected because they have been the first to cover the categories in which IPRs are customarily divided (industrial property is the focus of the Paris Convention, while the Berne Convention dealt with copyrights) and the first to launch an international IP filing service (that is the case of the Madrid Agreement). For the sake of clarity, other instruments regulate the same aspects but for different categories of IP, e.g., the Patent Cooperation Treaty (1970) which is the "Madrid System" but for patents.

[22] Full text of the Berne Convention is available at: https://www.wipo.int/wipolex/en/text/283693.

[23] Copyrights, do not requiring a registration requirement, are an exception in this regard.

performance (of dramatic, dramatico-musical and musical works Article 11, similar provision is stated for literary works in Article 11ter), the broadcasting and related activities (Article 11bis), the adaptation and other alteration (Article 12), the cinematographic adaptation and similar activities (Article 14)). This provided for a first, minimal harmonization of the rights protected.

Interesting to note is the Appendix to the Convention, which allowed special provisions for developing countries, which will become a distinctive feature in IPRs Agreements[24]. These provisions permitted, e. g., "*a system of non-exclusive and non-transferable licenses*" instead of the authors' exclusive right of translation early referred to, "*only for the purpose of teaching, scholarship or research*" (Article II).

I.III. The Madrid System

With considerations over the Madrid Agreement Concerning the International Registration of Marks[25] and, more precisely, on its Protocol[26], we conclude the overview on the legal principles contained in the sphere of international law.

The two legal texts[27] (plus the Regulations and the Administrative Instructions) constitute the so-called "Madrid System", namely the first one stop shop that allows to register and protect trademarks worldwide. Basically, if you have registered (or filed an application, Article 2.1 of the Protocol) for a trademark in your domestic

[24] See UNCTAD. 2001. "Compendium of International Arrangements on Transfer of Technology: Selected Instruments. Relevant provisions in selected international arrangements pertaining to transfer of technology", page VI, available at: https://unctad.org/system/files/official-document/psiteipcm5.en.pdf.

[25] Full text of the Madrid Agreement available at: https://www.wipo.int/wipolex/en/text/283529.

[26] Full text of the Protocol available at: https://www.wipo.int/wipolex/en/text/283483.

[27] The two instruments, even if strictly intertwined, are separate treaties. However, from October 2016, the Agreement is no longer in operation, and the Protocol remains the only governing treaty of the System: thus, hereafter, only core provisions of the Protocol are cited. For a detailed treatment of the System see: WIPO. 2022. "GUIDE TO THE MADRID SYSTEM. INTERNATIONAL REGISTRATION OF MARKS UNDER THE MADRID PROTOCOL". WIPO Publication No. 455E/22, available at: https://doi.org/10.34667/tind.45832.

IP office (the applicant can choose his domestic IP office on the ground of a real and effective industrial or commercial establishment, domicile or nationality, Ibidem), with the Madrid System[28] is possible to file a single international trademark application to seek its protection up to every country party, paying only one set of fees. This implies less administrative burdens for the owners relating to the overall management of the mark. The protection accorded in "*each of the Contracting Parties concerned shall be the same as if the mark had been deposited direct with the Office of that Contracting Party*" (Article 4 of the Protocol). Among the most interesting features of the Protocol, leaving aside the ones regarding the procedural aspects on fees, renewal, etc, are the provision on right of priority (Article 4, "*Every international registration shall enjoy the right of priority provided for by Article 4 of the Paris Convention for the Protection of Industrial Property*") and the provision on the "principle of replacement", namely the possibility for the holder of a nationally or regionally registered mark to have it replaced by the international registration (if both registrations stand in the same person) "*without prejudice to any rights acquired by virtue of the latter*" (Article 4bis), meaning that the holder enjoys the rights at the national/regional level plus the ones at the international level.

I.IV. Intellectual Property Rights and the Changing Economic Framework

Simultaneously to this evolving body of international law[29], domestic law (especially in developed countries) was refined, remarkably in the interplay with competition and commercial policies. This was the case in the US and, in particular, in the European Community. The reason was crystal clear: to cope with the single market, a deeper integration and harmonization of the European IPRs frameworks were deemed of crucial importance, as well demonstrated by the initiatives that

[28] More practical information on the System is available at: https://www.wipo.int/madrid/en/.

[29] For a detailed history of the evolution of intellectual property see: Nuno Pires de Carvalho. 2020. "From Babylon to the Silicon Valley—The Origins and Evolution of Intellectual Property. A Sourcebook". The evolution is presented through a series of selected resources and categorized in the main areas of IPRs.

materialized since the 70s regarding the various categories of IP. [30]

However, IPRs were not only in the agenda of the developed countries: during the 60s, with the industrial production centres increasingly delocalized in global south, coupled with the perception that the IPRs system would have prevented the exploitation of new technologies by the developing nations, these factors raised their awareness over the strict correlation between IPRs, international ToT and their development. Thus, the increasing number of newly independent, under-developed countries, with their voice gaining space and attention in the international fora, the debate on the interaction between IPRs and ToT was "officially" opened by a Resolution of the General Assembly of the UN on "The role of patents in the transfer of technology to under-developed countries"[31].

As a matter of fact, the principal intention of the Conventions early cited was the protection of developed economies' IPRs, rather than the dissemination of technology across borders and, indeed, no room was dedicated to this question. With the changing economic framework and the relevance that global south started to play, it became impossible to seek broader protection of IPRs without inserting as counterpart systems of cooperation for the international dissemination of technology. In this respect, in 1974, the General Assembly of the UN adopted the "Declaration on the Establishment of a New International Economic Order" which it had to be based in series of principles, among them "*Giving to the developing countries access to the achievements of modern science and technology, and promoting the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies*"[32]. To better implement the provisions of the Declaration, the General Assembly adopted the "Programme of Action on the

[30] See: Holyoak & Torremans. 2017. "Intellectual property law. Seventh edition". Oxford University Press, Pag. 37-41.

[31] UNGA. 1961. 1713 (XVI). "The role of patents in the transfer of technology to under-developed countries". Available at: https://digitallibrary.un.org/record/204612.

[32] UNGA. 1974. 3201 (S – VI). "Declaration on the Establishment of a New International Economic Order". Paragraph 4 (g). Full text of the Declaration available at: https://digitallibrary.un.org/record/218450?ln=en#record-files-collapse-header.

Establishment of a New International Economic Order" which comprehended a significant paragraph dedicated to the transfer of technology. According to it, all efforts should be made:

> *(a) To formulate an international code of conduct for the transfer of technology corresponding to needs and conditions prevalent in developing countries;*
> *(b) To give access on improved terms to modern technology and to adapt that technology, as appropriate-ate, to specific economic, social and ecological conditions and varying stages of development in developing countries;*
> *(c) To expand significantly the assistance from developed to developing countries in research and development programmes and in the creation of suitable indigenous technology;*
> *(d) To adapt commercial practices governing transfer of technology to the requirements of the developing countries and to prevent abuse of the rights of sellers;*
> *(e) To promote international co-operation in research and development in exploration and exploitation, conservation and the legitimate utilization of natural resources and all sources of energy.*
> ***In taking the above measures, the special needs of the least developed and land-locked countries should be borne in mind.***[33]

Point (a), which envisaged *an international code of conduct for the transfer of technology* was at the foundation of the 1985, UNCTAD "Draft International Code of Conduct on the Transfer of Technology" in which, as previously mentioned in

[33] UNGA. 1974. 3202 (S – VI). "Programme of Action on the Establishment of a New International Economic Order". Section IV, Transfer of technology. Emphasis added. Full text of the Programme of Action available at: https://digitallibrary.un.org/record/218451?ln=en.

the Introduction, defined the transfer of technology across borders (ToT) as "*the transfer of systematic knowledge for the manufacture of a product, for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods*"[34].

Thus, with a view of harmonizing the well-established principles early referred to, and to regulate an aspect that converted in a relevant issue in trade relations not only between the North-South divide, but also between the European Communities and the United States [35], with the Ministerial Declaration in Punta del Este of 1986, the Uruguay round was launched. The Declaration, in listing the Subject of Negotiations in its Part 1 – Negotiations on Trade in Goods, reads as follows:

> ***Trade-related aspects of intellectual property rights, including trade in counterfeit goods.***
> *In order to reduce the distortions and impediments to international trade and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade, the negotiations shall aim to clarify GATT provisions and*

[34] UNCTAD. 1985. "Draft International Code of Conduct on the Transfer of Technology as at the close of the 6th session of the Conference on 5 June 1985: note by the UNCTAD Secretariat", Definition of transfer technology, available at: https://digitallibrary.un.org/record/86199.

[35] Frictions arose between the European Communities and the United States due to US' IP law deemed inconsistent with GATT obligations. THE UNITED STATES MANUFACTURING CLAUSE, Report of the Panel adopted on 15/16 May 1984 (L/5609 - 31S/74), available at: https://www.wto.org/english/tratop_e/dispu_e/gatt_e/83copyrt.pdf. UNITED STATES - SECTION 337 OF THE TARIFF ACT OF 1930, Report by the Panel adopted on 7 November 1989 (L/6439 - 36S/345), available at https://www.wto.org/english/tratop_e/dispu_e/gatt_e/87tar337.pdf. It is important to note that GATT contained some references to IP in Articles IX, XVIII and XX: however, it was not sufficient to address the changing international economic order. Furthermore, a number of countries were not contracting parties of all these instruments, resulting in a high level of uncertainty in the international framework.

elaborate as appropriate new rules and disciplines.

Negotiations shall aim to develop a multilateral framework of principles, rules and disciplines dealing with international trade in counterfeit goods, taking into account work already undertaken in the GATT. These negotiations shall be without prejudice to other complementary initiatives that may be taken in the World Intellectual Property Organization and elsewhere to deal with these matters.[36]

I.V. The Creation of the TRIPS Agreement and the Broader Role of WTO

Launched the Uruguay Round with the Declaration in Punta del Este early referred to, the negotiations were underway. However, the lack of clarity of the mandate of the Declaration, especially on what "trade-related aspects" should be embraced in the Agreement and if substantive standards and national enforcement were to be included, hampered the process. As a matter of fact, United States were the principal promoter of the incorporation of substantive standards for the protection of IP abroad, due to the perceived damage to US international competitiveness and trade, while this was not the case for many other (both developed and developing) countries, which were keen in safeguarding the right of countries to regulate what were considered national policy affairs. This lack of understanding even before the adoption of Declaration was thus reflected in the vagueness of its mandate and in the first years of the consultations. A turning point in this sense were the results of the mid-term ministerial meeting hold in 1988 in Montreal and its subsequent decisions which shed lights on the scope of the negotiations[37]. The "geometrical

[36] Full text of the Declaration available at: https://docs.wto.org/gattdocs/q/GG/GATTFOCUS/41.pdf.

[37] See pages 21 and 22 of GATT document MTN.TNC/11, Uruguay Round – Trade Negotiations Committee – Mid-Term Meeting, 21 April 1989. Available at: https://docs.wto.org/gattdocs/q/UR/TNC/11.PDF.

variable" set of alliances characterized the dialogues: as a matter of fact, it is interesting to note that "*contrary to the general belief that the negotiations were dominated by a stark North-South division, large parts of the TRIPS text were developed through the resolution of intra-North differences or through alliances that cut across North-South boundaries, including on copyright, patents, trade secrets, test data protection and geographical indications. The general need to reconcile different legal systems* [civil law and common law] *was also an intra-North challenge*" [38].

However, this should not lead to the conclusion that there were no clear divisions along the North-South axis, as well described by Thomas Cottier, who led Swiss negotiations on TRIPS: "*The work of the Negotiating Group 11 assigned to trade-related IPRs (TRIPS) on the basis of the Punta del Este Declaration, at its inception and during the first years, may be well-characterized as a dialogue de sourds (a dialogue of the deaf).* […] *Developed countries* […] *focused on the need for enhanced protection and the implications of insufficient protection observed around the world.* […] *Developing countries, on the other hand, stressed the risks of monopolization, the resulting South-to-North transfers and the detrimental effects on the building of their own technology base. Neither camp was able to provide solid evidence in support of its views. They were essentially dominated by doctrines adopted and developed in the Organisation for Economic Co-operation and Development (OECD), and United Nations Conference on Trade and Development (UNCTAD), respectively.*"[39]

The dialogue developed until the conception of a final draft text, the so-called "Dunkel Draft", which in practice was the final TRIPS Agreement except for minor changes agreed[40].

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[38] WTO. 2015. "The making of the TRIPS Agreement. Personal insights from the Uruguay Round negotiations". Edited by Jayashree Watal and Antony Taubman. Available at: https://www.wto.org/english/res_e/booksp_e/trips_agree_e/history_of_trips_nego_e.pdf. The book provides extended insights on the general development of the negotiations as well as the legal, economic, and historic framework in which the bargaining unfolded.

[39] Ibidem, pages 81-82.

[40] Ibidem, page 70.

In 1995, the bargain resulted in the finalization of the TRIPS Agreement, one of the pivotal instruments in the package that constituted the newly established WTO.

Thus, the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights[41] established IPRs' protection as an embedded principle of international trading system, setting for the first time minimum standards for the protection of that private rights worldwide. These private rights usually fall under the definition of investment in several IIAs: this is to underline the perceived (and concrete) prominence of universal provisions related to them. The Agreement has been a real game-changer for several reasons: thus, an overview is necessary to better understand the framework it shaped.

Part I of the Agreement recalls the already mentioned national treatment principle, provides for the most favoured-nation-treatment principle, a typical feature of GATT, and enlarges the application of the Paris Convention to all the WTO Members, even if they were not part of it (Article 2).

Part II, "Standards concerning the availability, scope and use of intellectual property rights" provides the minimum standards of protection for every type of IPR that WTO's members shall provide through their domestic legal system. We focus our attention on copyrights, trademarks, and patents[42].

On copyrights (Article 9 to Article 14), the TRIPS did not add to much, as the protection offered by the Berne Convention was deemed sufficient. However, it provides for the extension of the Berne Convention to the protection of computer programs (Article 10.1) and database (Article 10.2, with the limitations stated hereafter), it expands the protection of certain types of copyrights ("*at least computer programs and cinematographic works*") guaranteeing also the right of authorization of rental rights (Article 11, with the limitations stated hereafter) and it introduce basic rules for the harmonization of the protection of *Performers, Producers of Phonograms (Sound Recordings) and Broadcasting Organizations*

[41] Full text of the Agreement (as amended on 23 January 2017) available at: https://www.wto.org/english/docs_e/legal_e/31bis_trips_e.pdf.

[42] The Agreement covers: copyright and related rights, trademarks, geographical indications, industrial designs, patents, layout-designs (topographies) of integrated circuits, protection of undisclosed information, control of anti-competitive practices in contractual licence.

(Article 14).

On trademarks (Article 15 to Article 21), the TRIPS added to the Paris Convention provisions on what "*shall be capable of constituting a trademark*", on the rights conferred by the registration of a trademark (Article 16) with only limited exceptions, duly justified ("*such as fair use of descriptive terms, provided that such exceptions take account of the legitimate interests of the owner of the trademark and of third parties*", Article 17). Other provisions regard the term of protection (Article 18), limitations to the requirement of use if this is required to maintain the registration (Article 19), and on the condition on the licensing and assignment of trademarks (article 21).

On patents (Article 27 to Article 34), the TRIPS impacted on the requirements for patentability and on the rights conferred.

Regarding the former, patents shall be available for any inventions, in any fields of technology, whether they are products or processes and if they are "*new, involve an inventive step and are capable of industrial application*" (Article 27.1). Exceptions are fixed for the patentability of inventions and regard the protection of public order or morality, the protection of "*human, animal or plant life or health or to avoid serious prejudice to the environment*" (Article 27.2) and other particular circumstances[43].

On the latter, Article 28 fixed the exclusive rights that a patents shall confer: hence, if the patent regard a product, to prevent third parties from the acts of "*making, using, offering for sale, selling, or importing for these purposes that product*" and, if the patent regard a process, from the acts "*of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process*". Moreover, the patent holders enjoy "*the*

[43] Article 27.3 reads as follow: "*Members may also exclude from patentability:*

(a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement."

right to assign, or transfer by succession, the patent and to conclude licensing contracts" and limited exceptions to these exclusive rights shall be accorded, i.e. if they "*do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties*" (Article 30).

Other provisions regard compulsory licenses (Article 31 and Article 31bis[44]), the availability of judicial review in case of revocation or forfeit of patent (Article 32), the term of protection (Article 33), the burden of proof on the defendant in civil proceeding regarding patented processes for obtaining a product (Article 34).

Part III deals with the enforcement of IPRs: according to the general obligations stated in Article 41, enforcement procedures shall permit "*effective action against any act of infringement*" of IPRs, shall function as a deterrent and shall "*avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse*". The procedures shall be "*fair and equitable*" and not "*unnecessarily complicated or costly or entail unreasonable time-limits or unwarranted delays*". The decisions shall be "*in writing and reasoned*" and the parties shall have the "*the opportunity to be heard*".

Specific provisions are fixed for civil and administrative procedures: judicial authority shall have the authority to impose the production of evidence (Article 43), to order injunctions (Article 44), to impose the payment of damages (Article 45) or other measures, such as the destruction of the goods found to be infringing (Article 46).

Under Article 50, "*prompt and effective provisional measures*" shall be under the authority of judicial authority, as well as the power to order actions related to border measures[45].

Moreover, criminal procedures, penalties and remedies shall be applied "*at least in cases of willful trademark counterfeiting or copyright piracy on a commercial*

[44] These articles will be duly analysed in the third chapter. Article 31bis was inserted in the TRIPS after a long decision-making process. See https://www.wto.org/english/tratop_e/trips_e/tripsfacsheet_e.htm#:~:text=An%20amendment%20to%20the%20WTO%27s,health%20originally%20adopted%20in%202003.

[45] See Articles 51-60.

scale" (Article 61).

In Part V of TRIPS, Article 64 provided for the first time a mechanism for international settlement of disputes regarding IPRs and Article 68 (Part VII) established a Council for TRIPS, consisting in a body designated to monitor the implementation and the contracting parties' compliance with the Agreement, as well as operating as a permanent forum were engage in consultations and collaborations between diverse stakeholders on IPRs.

Among the various factors contributing to the significance of TRIPS, one aspect stands out for our analysis: the introduction of Article 66.2, which reads as follows:

> *Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base*.

The significance of Article 66.2 relates on the fact that, international transfer of technology, included also in Article 7 and Article 8 (respectively "*Objectives*" and "*Principles*"), was directly inserted as a legally binding commitment in an Agreement regarding IPRs, signalling the intertwining of the matters and how they are mutually influenced. This was a clear recognition of the LDCs need to achieve ToT and their legitimate positions during the TRIPS bargain, a long way since the first UNGA Resolution proposed by Brazil on "The role of patents in the transfer of technology to under-developed countries", early cited.

Furthermore, following the LDCs strong request to better operationalise the provision, the TRIPS Council's Decision of 20 February 2003 compelled developed country Members to "*submit annually reports on actions taken or planned in pursuance of their commitments under Article 66.2*". The Decision duly specify some of the information, *inter alia*, that the report shall provide[46]. Since then a

[46] WTO. Council for TRIPS. 2003. "IMPLEMENTATION OF ARTICLE 66.2 OF THE TRIPS AGREEMENT. Decision of the Council for TRIPS of 19 February 2003". Full text of the decision available at:

number of meaningful reports have been issued: these will be the basis to analyse the recent states practices in the following Chapter. A WTO' Secretariat Division, the "Intellectual Property, Government Procurement and Competition Division" support the work of the Council for TRIPS.

WTO's commitment in promoting Technological Transfer is not limited only to the TRIPS Agreement. Even if the Agreement in the pivotal instrument, WTO holds a broader role in the Technology Transfer global governance, through a specific Working Group on Trade and Transfer of Technology (WGTTT). Established at the 4th Ministerial Conference in Doha in November 2001[47], the WGTTT works in synergy with the TRIPS Council as a forum where Member States, international organizations, and stakeholders share policy recommendations, successful practices and explore opportunities to enhance the transfer of technology consistently with the principles of fair trade.

I.VI. International Investment Agreements Relevant to Technology Transfer: the Concretisation of TRIPS Provisions on Cooperation?

In the previous Paragraphs we analysed how global IPRs protection had been shaped from the end of XIX century, until the instituting of the TRIPS Agreement, that, as we saw, irreversibly recognized the interplay between IPRs, international ToT and development.

The purpose of this Paragraph is to survey International Investment Agreements[48], a categorization containing Bilateral Investment Treaties (BITs) and Treaties with Investment Provisions (TIPs), containing provisions aimed to promote the distribution of technological know-hows across economies: that is to say, the

https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/IP/C/28.pdf&Open=True.

[47] Paragraph 37, full text available at: https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=35772,37509,46740&CurrentCatalogueIdIndex=0&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True.

[48] To map the contents of the Agreements, the UNCTAD "IIA Mapping Project" has been used. See UNCTAD, Mapping of IIA Content, available at: https://investmentpolicy.unctad.org/international-investment-agreements/iia-mapping for information on the terminology and the methodology used. The terminology used in this paragraph reflects it.

international instruments that help to "concretise" the multilateral cooperation established by TRIPS.

The research has been constructed under specific parameters fixed as follows:

first of all, only IIAs entered into force from 1995 to 2024 have been considered, namely after the entry into force of the TRIPS Agreement.

Secondly, only IIAs concluded between developed countries and LDCs have been considered, as this is the scope of TRIPS provisions on international ToT.

Thirdly, IIAs which contain as exact phrases "Transfer of technology" or "transfer technology" or "capacity building" have been considered[49].

These are the results of the query:

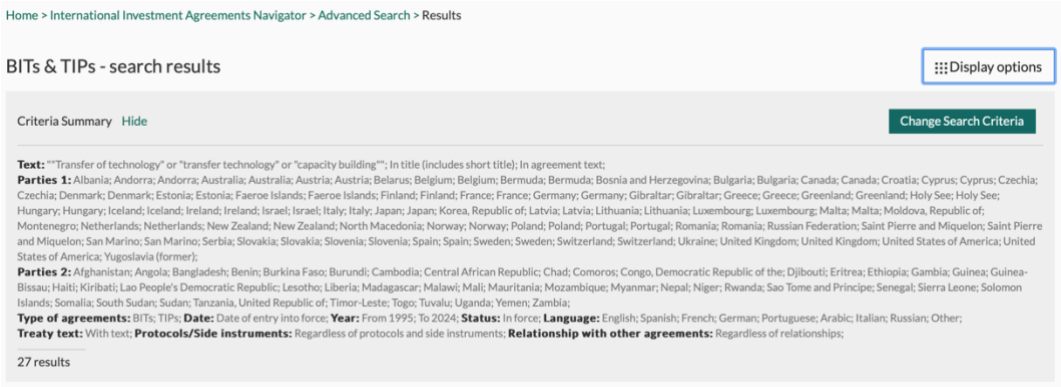

Figure 1.1

These 27 IIAs[50], even if they are slightly more than 1% of the total of IIAs in force

[49] Other solutions regard wording and exact phrases were considered. However, they led either to a rather small sample of IIAs or to an excessive generic one.

[50] A double-check conducted on the mapped IIAs has been carried out, revealing that the references to "transfer of technology" or "transfer technology" in 11 IIAs (namely, Japan - Myanmar BIT (2013), Japan - Mozambique BIT (2013), Japan – Lao People's Democratic Republic BIT (2008), Cambodia – Japan BIT (2007), Canada – Guinea BIT (2015), Canada – Mali BIT (2014), Canada – Senegal BIT (2014), Canada – United Republic of Tanzania BIT (2013), Benin – Canada BIT (2013), Mozambique – Sweden BIT (2001), Mozambique – US BIT (1998)) are contained only in provisions regarding the prohibition of performance requirements. This specific topic will be cover in the next paragraph. For the sake of clarity, the 27 mapped IIAs are (in reverse chronological order): Cambodia – Republic of Korea FTA (2021), SACU (Southern African Customs Union) and Mozambique - United Kingdom EPA (2019), ESA (Eastern and Southern Africa) - United Kingdom EPA (2019), Canada – Guinea BIT (2015), Burkina Faso – Canada BIT (2015), Canada – Mali BIT

(2221 BITs in force + 375 TIPs in force), represent a useful source to analyse the various approaches of States and International Organization over transfer of technology. Despite of the quite restrictive parameters used for the query, all the global macro - regions are represented with agreements spanning from Africa, Asia, Caribbean, and Oceania.

In this respect, it would be out of the scope of our analysis to list the provisions of all the 27 IIAs: however, it useful to underline some of the patterns that can be found.

Transfer of technology has been envisaged for specific sectors such as for industrial development and competitiveness or for the mining and minerals sector (respectively Article 40 and Article 41 of ESA (Eastern and Southern Africa) - United Kingdom EPA) or for broad-spectrum purposes such as for economic development in general (Article 21 of the Cotonou Agreement). Similarly, the transfer of technology should serve the environmental cooperation (Article 7 of Cooperation Agreement between the European Community and the Republic of Yemen) or should be considered in connection with IP (Article 132 of CARIFORUM (Caribbean Forum) – EC (European Community) EPA). Transfer of technology can be seen as a means to promote the investments between the parties of a BIT as stated in Article 3.4 of Burkina Faso – Canada BIT.

Similar patterns can be found regarding capacity building, which refers to a broad range of activities comprising, *inter alia*, inter-institutional communication and cooperation, operational support, training. References to this model of cooperation

(2014), Canada – Senegal BIT (2014), Japan - Myanmar BIT (2013), Japan - Mozambique BIT (2013), CARICOM (Caribbean Community) - United States TIFA (Trade and Investment Framework Agreement) (2013), Canada – United Republic of Tanzania BIT (2013), Benin – Canada BIT (2013), Agreement Establishing the ASEAN (Association of South-East Asian Nations)-Australia-New Zealand Free Trade Area (2009), CARIFORUM (Caribbean Forum) – EC (European Community) EPA(2008), SACU – US TIFA (Trade, Investment and Development Cooperative Agreement) (2008), ASEAN – Japan EPA (2008), Japan – Lao People's Democratic Republic BIT (2008), EFTA (European Free Trade Association) – SACU FTA (2006), ASEAN – Korea Framework agreement (2005), , Cotonou Agreement (2000), Bangladesh – EC Cooperation Agreement (2000), Mozambique – US BIT (1998), EC - Yemen Cooperation Agreement (1997), Cambodia – EC Cooperation Agreement (1997), EC – Lao Cooperation Agreement (1997).

has been made to achieve the objectives of "Technical Barriers to Trade" Chapter in SACU (Southern African Customs Union) and Mozambique - United Kingdom EPA or to enhance customs cooperation as for Article 5.2 of the Agreement Establishing the ASEAN (Association of South-East Asian Nations)-Australia-New Zealand Free Trade Area.

Another example is contained in Article 5 of the Cooperation Agreement between the European Community and the Kingdom of Cambodia regarding the environmental cooperation.

The selected articles of the 27 IIAs provide an overview of the global importance placed on fostering technological exchanges and enhancing institutional capacities. The variety of the provisions, spanning from more concrete sector-specific considerations to holistic goals such as economic development and environmental cooperation, reflects the priorities and objectives of the involved States and International Organizations. On the other hand, the collaborative activities related to capacity building probably reveal a more elastic approach and a less tangible commitment over technological dissemination across borders comparing to clearer obligations. Additionally, it is noteworthy to reflect that these international instruments represent the overarching playing field in which enterprises' consideration on where and how to invest are inserted: even if the presence of a specific provision for sure adds legal certainty, it is wishful thinking that an IIA alone could push private enterprises to disseminate its technology and their private rights to LDCs. That is the focal reason behind provisions such as TRIPS Article 66.2, which insists on the necessity of developed states incentivizing their own firms to internationally transfer technology as counterpart of the TRIPS implementation burden imposed on LDCs.

Finally, what captures our attention, and it is noteworthy for the further analysis, it is the identification of 11 IIAs (all BITs) out of the 27 mapped which contain references to technology transfer only to prohibit its *mandatory* transfer[51]. The following Paragraph deals with this topic.

[51] See previous footnote.

I.VII. Prohibition of Mandatory Transfer of Technology as an Element Included in Provisions concerning the Prohibition of Performance Requirements

Performance requirements[52] can be defined as "*conditions imposed on foreign investors that they must achieve certain goals with respect to their commercial activities in host countries*"[53]. In simpler terms, we can think about performance requirements as the constraints under which a host country permit the access of foreign firms in its territory to maximize the advantage of its openness. However, even if performance requirements can be superficially assessed as hinders for FDIs, this is not always the case, above all if they are inserted in an investments' incentives framework. That generates a sort of win-win game, where host countries obtain the stronger possible advantage from the conditions imposed on the firms which, as a counterpart, obtain a series of incentives thanks to those same conditions they accepted to be bound by. The following Figures, retrieved from the 2014 UNCTAD World Investment Report[54], show which are the most important objectives that host countries seek with their proposed investment incentives (Figure 1.1) and which are the most important performance requirements that foreign investors are required to fulfil to obtain investments incentives.

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[52] See: WTO. Committee on Trade-Related Investment Measures. 2001. "Trade-Related Investment Measures and other Performance Requirements. Joint Study by the WTO and UNCTAD Secretariats - Part I - Scope and Definition; Provisions in International Agreements". Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/C/W307.pdf&Open=True; and WTO. Council for Trade in Goods. 2002. "Trade-Related Investment Measures and Other Performance Requirements. Joint Study by the WTO and UNCTAD Secretariats. Addendum Part II". Available at: https://docsonline.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/C/W307A1.pdf&Open=True.

[53] Collins, D. 2023 2nd edition. "Performance Requirements and Investment Incentives Under International Economic Law". Elgar International Investment Law Series. University of London, UK.

[54] UNCTAD. 2014. "World Investment Report 2014: Investing in the SDGs: An Action Plan". Available at: https://unctad.org/system/files/official-document/wir2014_en.pdf.

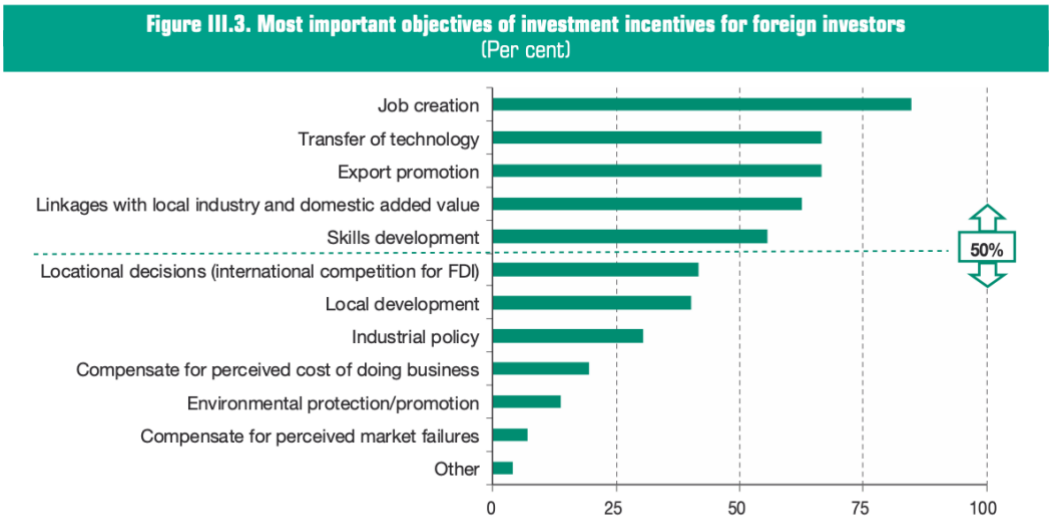

Figure 1.2

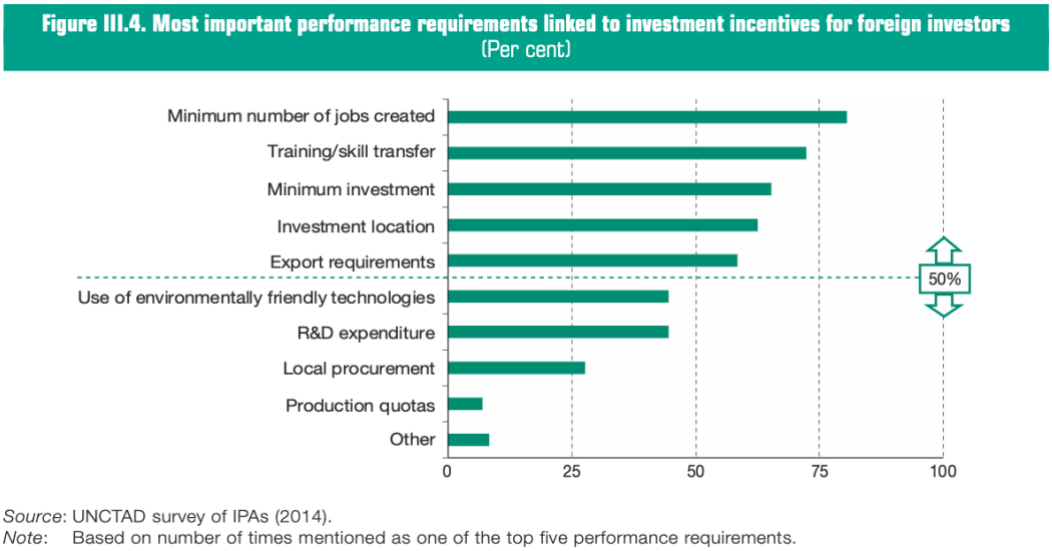

Figure 1.3

Both figures demonstrate how transfer of technology, and transfer of training and skill are deemed crucial by host countries.

The debate over the benefits and drawbacks of performance requirements is still question of controversy between economist and policy makers [55], however, our purpose is to focus on how performance requirements' provisions have been

[55] Collins, D. 2023 2nd edition. "Performance Requirements and Investment Incentives Under International Economic Law". Elgar International Investment Law Series. University of London, UK.

regulated over the course of time and what is their typical content nowadays in a series of international instruments.

Firstly, from the standpoint of ToT, performance requirements have been widely regulated to limit the imposition of arbitrary restriction deemed detrimental for international trade. In this respect, the WTO Agreement on Trade-Related Investment Measures (TRIMS)[56] fixes the prohibition for WTO members to impose obligations on foreign firms through national laws which are inconsistent with GATT Article III on national treatment or GATT Article XI on quantitative restrictions[57]. The Annex of the Agreement clarifies trough an illustrative list the investments measures inconsistent with the cited GATT Articles, namely those: which require the mandatory "*purchase or use by an enterprise of products of domestic origin or from any domestic source*"[58] or which require "*enterprise's purchases or use of imported products* [to] *be limited to an amount related to the volume or value of local products that it exports*"[59] (inconsistent with Article III); which relate the enterprise's importation of products with the "*the volume or value of local production that it exports*"[60], or which restrict the enterprise's importation through limiting "*its access to foreign exchange to an amount related to the foreign exchange inflows attributable to the enterprise*"[61], or which restrict the exportation or sale for export of products related to its local production[62]. These local-content and trade-balancing requirements are included only in 13 IIAs out of the 2583 treaties mapped by UNCTAD[63], using as criteria for the advanced research explicit prohibition of performance requirements with TRIMS reference, and in 217 IIAs if

[56] For more information see: https://www.wto.org/english/tratop_e/invest_e/trims_e.htm.

[57] It is important to note that the Agreement covers investment measures that affect trade in goods and not in services. Full text of the Agreement available at: https://www.wto.org/english/docs_e/legal_e/18-trims.pdf.

[58] Point 1(a) of the Annex.

[59] Point 1(b) of the Annex.

[60] Point 2(a) of the Annex.

[61] Point 2(b) of the Annex.

[62] Point 2(c) of the Annex.

[63] See UNCTAD, Mapping of IIA Content, available at: https://investmentpolicy.unctad.org/international-investment-agreements/iia-mapping.

the query is based only on the explicit prohibition of performance requirements. This makes sense both because provisions on performance requirements were inserted even before the 1994 TRIMS Agreement and because as a WTO based Agreement, virtually every country is bound by it without having to recall in their IIAs instruments. Moreover, even if not explicitly refereed to TRIMS, in general, IIAs provisions on this issue reflect its formulation. However, it is noteworthy to note the limited space that *explicit* performance requirements provisions hold in IIAs, with less that 9% of the IIAs incorporating them, indicating that countries probably prefer not to mention them at all to enjoy more space of maneuver when it is time to impose conditions in the receiving of FDI.

In contrast to this, some IIAs enforce broader prohibitions than the ones imposed by TRIMS, for example NAFTA Article 1106, which, in addition to the "classical" prohibitions up till now discussed, in its paragraph 1(f) adds as follows:

> *to transfer technology, a production process or other proprietary knowledge to a person in its territory, except when the requirement is imposed, or the commitment or undertaking is enforced by a court, administrative tribunal or competition authority to remedy an alleged violation of competition laws or to act in a manner not inconsistent with other provisions of this Agreement.*

This type of provisions, contained also in the recent Japan and Canada BITs[64], somewhat widen scope of the prohibitions from trade in goods, to include a share of trade in services which accounted, in 2021, for the 20.8 % of the world's total trade[65], and with the US having in 2022 the highest level of exports related to the

[64] See footnote 50.

[65] European Commission, World Trade in Services, available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=World_trade_in_services#:~:text=In%202021%2C%20services%20accounted%20for,%2C%20reaching%2024.7%20%25%20in%202019.

use of intellectual property[66].

It is self-evident that these provisions aim to prohibit the mandatory transfer of technology are the "defensive" approach that developed countries tend to adopt to protect their enterprises doing business abroad, above all if the counterpart has not a proper record for the protection of technology related IPRs[67].

While these "reinforced" requirements, extending beyond the above-mentioned, "standard" TRIMS by including prohibitions on mandatory technology transfer within performance requirements provisions, protect the technological know-how from unduly domestic interferences, in the next chapter we will delve into the incentives offered by developed countries to impulse the *voluntarily* transfer the technology of their firms to LDCs as mandated by Article 66.2 of TRIPS Agreement.

[66] Ibidem.

[67] European Commission. 2019. "Commission Staff Working Document. Report on the protection and enforcement of intellectual property rights in third countries". Pag. 11 and 19. Available at: https://data.consilium.europa.eu/doc/document/ST-15330-2019-INIT/en/pdf.

Office of the United States Trade Representative. Executive Office of The President. 2018. "Findings Of The Investigation Into China's Acts, Policies, And Practices Related To Technology Transfer Intellectual Property, And Innovation Under Section 301 Of The Trade Act Of 1974", available at: https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF.

II. RECENT PRACTICES ADOPTED BY DEVELOPED STATES IN MANAGING TECHNOLOGY TRANSFER

Having clear the principles related to IPRs, how they are intertwined with the international ToT and having analysed in what way the ToT is concretised through a selection international instrument, or hindered with protectionist approach by means of TRIMS-plus prohibitions of performance requirements, this chapter delves into the different developed-states approaches of dealing with these topics. In the first paragraph we focus our attention on developed states' TRIPS related activities and reports to assess their "indirect" contribute to LDCs, while, in the second one, we will deal with public-private partnerships and model contracts related to ToT and intellectual property rights.

II.I. DEVELOPED STATES, TRIPS ARTICLE 66.2 - RELATED ACTIVITIES

According to Article 66.2 of TRIPS Agreement, "*Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base*". Additionally, it is in the "spirit" of the TRIPS, and also in its Article 7 on the Objectives of the Agreement, that the protection on IPRs "*should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations*".

Reaffirmed these core principles, the purpose of this paragraph is to critically assess the latest reports on the implementation of Article 66.2 developed states have submitted to the Council for TRIPS. As we will observe, with the proceeding of the analysis some criticisms will emerge.

Over the course of 2023, Australia, European Union, Japan, Norway, Switzerland, Unites States of America[68], United Kingdom and Canada submitted their reports:

[68] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS

these are the key findings and contents.

Australia

Australia[69] reported a total of 22 programmes/projects, spanning from scholarships granted through the Australia Awards programme, to more significant financial commitments such as the ASEAN-Pacific Infectious Disease Detection and Response (AUD 35 million), or the Cambodia Australia Partnership for Resilient Economic Development (AUD 87 million). Accordingly to the available data, the sectors of cooperation in which are inserted the two programmes, namely disease prevention and response sector, and the agricultural sector, are the main focus of Australia. Various categories of transferred technologies are represented, including on climate change mitigation, sustainable technologies, ICT, on health, on food and agriculture, and knowledge and skills. The projects are entirely focused on the South-East Asia and Pacific Regions with the set of incentives largely directed to Australian institutions.

European Union

The EU Report[70], comprehensive of Spain, Czech Republic, Sweden, Ireland, Austria, France, and Germany projects, is the broadest among the 2023' reports.

Regarding exquisitely the activities of the European Union, the entirety of the projects listed are comprised in "Horizon 2020"[71], the EU research and innovation programme for 2014-2020, and in its successor "Horizon Europe"[72] for 2021-2027.

Agreement – United States of America. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/USA4.pdf&Open=True.

[69] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – Australia. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/AUS4.pdf&Open=True.

[70] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – European Union. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/EU4.pdf&Open=True

[71] More information available at: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-2020_en.

[72] More information available at: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en.

The purposes of such funds are in nature wide-ranging regarding their scope of application and the sectors of cooperation; however, the bulk of the programmes submitted to the WTO's attention span from health technologies, with a focus on vaccines, on the early diagnosis of infectious diseases and cancers, to technologies for the energy transition and the agricultural sector. The majority of the plans are directed to African' countries through incentivized institutional cooperation between the two sides, often materialised in leading universities consortium collaborating with local institutes and agencies.

Now considering the EU Member States' domestic activities, it is noteworthy for the following analysis to retrieve some details from the sections dedicated to Spain, Austria, France, and Germany. Regarding Spain, it is interesting to note the International technological cooperation projects lead by the Centre for the Development of Industrial Technology (*Centro para el Desarrollo Tecnológico Industrial* CDTI[73] in Spanish). The programmes offer a series of financial (e.g. loans at competitive rates) and non-financial (e.g. networking, advice) incentives for the fostering of innovation and technological development of Spanish companies cooperating with foreigners from a wide-raging list of partners countries in which some Asian and African LDCs are among the beneficiaries. A similar facilitator framework is the Austrian Development Agency[74], but with a specific focus on LDCs. Remind this slightly but meaningful difference amid the projects for later.

France Article 66.2 activities follow the pattern of sectors involved early referred to, spanning from water sanitation technologies, health-related technologies, and renewable energy technologies. The financial implications for these projects, above all for the enhancing of Bangladesh's health system[75] and the development of a hydroelectric power plant in Tanzania[76] are quite substantial: respectively, a loan of EUR 200 million over 20 years from 01/01/20222, and a grant of EUR 110

[73] More information available at: https://www.cdti.es/en/organisational-values.

[74] More information available at: https://www.entwicklung.at/en/ada.

[75] See: https://www.afd.fr/en/carte-des-projets/budget-support-strengthening-health-care-system-and-non-contributory-health-protection-mechanisms-bangladesh.

[76] See: https://www.afd.fr/en/carte-des-projets/kakono-hydroelectric-power-plant.

million over 25 years, both provided by the *Agence Française de Développement* (AFD) *Group*. To conclude the overview of the EU report, Germany substantiates its contributions to international transfer of technology through the *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*[77], its main development agency for international cooperation. Limited other non-profit organisations are among the beneficiary of the incentives[78].

Japan, Canada, and Switzerland

At this point, having broadly understood the contents and mechanisms of these two reports, the Japan, Canada, and Switzerland reports will be analysed in a unique cluster since they share a similar structure that allows for a more effective identification of certain critical aspects and of certain observations.

The major critical point that clearly arises it is over what shall be considered as incentives for technology transfer. Accordingly to Japan[79] this means "*a variety of measures such as financial support and business environment support*" where measures supporting the business environment comprehends, *inter alia*, the "*strengthening intellectual property protection*". This understanding appears to fall under TRIPS Article 67 on Technical Cooperation[80] rather than under Article 66.2. This seems to be confirmed by the following paragraph which paraphrases Article 66.2 referring to "*the incentives provided by Japan to enterprises and institutions in Japan*": however, all the activities listed in the report are clustered as "*undertaken*

[77] See: https://www.giz.de/en/html/index.html.

[78] E.g. Welt Hunger Life and Menschen für Menschen.

[79] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – Japan. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/JPN4.pdf&Open=True.

[80] The Article reads as follows: "*In order to facilitate the implementation of this Agreement, developed country Members shall provide, on request and on mutually agreed terms and conditions, technical and financial cooperation in favour of developing and least-developed country Members. Such cooperation shall include assistance in the preparation of laws and regulations on the protection and enforcement of intellectual property rights as well as on the prevention of their abuse and shall include support regarding the establishment or reinforcement of domestic offices and agencies relevant to these matters, including the training of personnel*".

by technical cooperation organizations". Canada[81] clearly distinguishes the activities under Article 67 and under Article 66.2, which are contains in different reports, specifying that "*there is some overlap between the concepts of technology transfer and technical assistance*" and affirming that its understanding over technology transfer "*include the transfer of technology embedded in physical goods and services (such as machinery and equipment), as well as the dissemination of technical and business information and knowledge upon which a product, process or service is based, as well as the transfer of skills and know-how. Accordingly, technology transfer may include, for instance, the embedded IP in transferred goods and services, management and business know-how to support the production and distribution of goods and services; and human resource capacity-building*".

Switzerland[82] similarly declares: "[Switzerland's] *understanding of "technology transfer" includes a broad set of processes covering the flows of know-how, experience and equipment amongst different stakeholders such as governments, private sector entities, financial institutions, NGOs and research/education institutions. Incentives and activities reported here belong to any of the following four key modes of technology transfer: (i) physical objects or equipment; (ii) skills and human and organisational aspects of technology management and learning; (iii) designs and blueprints which constitute the document-embodied knowledge on information and technology; and (iv) production arrangement linkages within which technology is operated, including the enabling environment for such transfer.*" This description seems to include technical cooperation, or at least no clear distinctions arise.

These reports' quotes demonstrate the lack of a common understanding in the TRIPS Council of what activities shall be considered relevant under Article 66.2 or

[81] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – Canada. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/CAN4.pdf&Open=True.

[82] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – Switzerland. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/CHE4.pdf&Open=True.

relevant under Article 67. As said before, this is particularly evident in these reports because of their structure, which, in contrast with Australia and EU reports comprehends introductive paragraphs to better framework the states' activities; however, this criticism can be extended to comprehends both of the earliest mentioned reports if we look back to them with this acknowledge.

United Kingdom

United Kingdom report[83] presents a total of 11 plans assessed as technology transfer projects. Nevertheless, activities in the field of humanitarian aid are included as transfer of technology and the programs there presented can be more realistically assessed as technological cooperation under Article 67.

Norway

Norway[84] presents its activities clustered in two broad schemes, namely the Norwegian Agency for Development Cooperation (NORAD) and the Norwegian Investment Fund for developing Countries (NORFUND). Regarding NORAD is clearly stated that it provides "*incentives for technology transfer to LDCs through its facilities for pre-investment support, the Strategic partnerships, and The Knowledge Bank of NORAD*" as well as technical cooperation through a number of programs. The tables presenting the disbursements to pre-investment support and to strategic partnerships reveal that not all the recipient countries are included in the UN list of LDCs[85]. However, the majority of the disbursements are directed to them. On NORFUND similar criticism can be found, i.e., it is difficult to practically assess what type of technology are transferred and the beneficiaries are not only LDCs.

[83] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – United Kingdom. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/GBR4.pdf&Open=True.

[84] WTO. Council for TRIPS. 2023. Report on the implementation of article 66.2 of the TRIPS Agreement – Norway. Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/CRTTI/NOR4.pdf&Open=True.

[85] The list is available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/ldc_list.pdf.

United States

The last report on the implementation of Article 66.2 remaining to be assessed is the report of the US, which, at a first glance, certainty is the most comprehensive and detailed. However, it is not without criticisms.

First of all, it shall be acknowledged that the report lists a broad variety of activities which for sure trigger virtuous (and well documented) cooperation in the field of international transfer of technology but that can be better assessed as various "framework shapers" rather than specific programs on transfer of specific technologies. These various "framework shapers" are concretized by general technology transfer programs (in this case we are referring to US' *internal* transfer of technology between federally funded research and the commercial marketplace), university-led programs, capacity building programs, technical cooperation programs (thus, activities under Article 67), as well as BITs and general trade agreements with LDCs. As said before, without any doubt, all these activities are worthy but are somewhat out of the precise scope of Article 66.2.

Conversely, the activities listed in the "Development programming and incentives through private sector models" paragraph undertake a more practical significance. There are listed the activities pursued by the Millennium Challenge Corporation, a US government corporation which acts in the field of public-private partnership, which will be our focus in the following paragraph. Moreover, a series of country-specific projects are presented with a clearer overview of the results achieved and the technologies disseminated.

After having concluded with the US report, it is possible to analyse the main findings.

Nonetheless, a couple of preliminary specifications are due.

Primarily, it shall be underlined that he programs and projects cited in this analysis operate as illustrative examples of each of the developed states' reports submitted in 2023, with the aim of filtering the overarching trends and the criticisms observed. As each country's set of projects contributes to the overall landscape, it is important to note that the limited projects' citation arises from the necessity to avoid unnecessary redundancy rather than a lack of consideration of other plans or

initiatives, which together constitute the broader approach of developed states under TRIPS Article 66.2 obligations. Identical reasoning applies to the decision of evaluating the reports of Japan, Canada, and Switzerland as a unique cluster, as their similar configuration better fitted to the exercise.

Indeed, the ultimate purpose was to interpret the essence of the commitments rather than listing every initiative contained.

Secondly, the analysis is partial by its nature, in the sense that we are focusing only on the projects that developed states autonomously decided to report to the WTO: this implies that a considerable number of other projects not mentioned in the reports were not considered by default.

Having said that, we can finally identify the key findings and criticism. As we saw, the main focus of the activities rotates around the sectors of health technologies, agriculture technologies, and technologies for the sustainable development of LDCs, sectors in which multiple countries are actively participating. No further comments are needed as it is quite obvious that the efforts shall be focalised on these sectors.

Of more interest is the overarching pattern of the preferred support granted to domestic institutions rather than private enterprises. As we saw, governments often channel aid and incentives through governmental bodies, public institutions, and consortiums of universities (this is particular the case of the EU approach). The focus on fostering private enterprises participation shall require further attention, given that the bulk of R&D expenditure has its source on the business sector[86], with clear implications on where new technologies arose.

Another notable observation is the perceived lack of clarity in defining the specific objectives and the expected outcomes of the incentives. While the majority of the reports provide information on programs, it emerges the need for more explicit articulation of their tangible impacts or of their desired results if the project is on its initial phases. It should be considered to build up a series of standardized and clear metrics and indicators to enhance general transparency and evaluation. In addition, this would improve the comparability among the developed states' efforts,

[86] See Eurostat, statistics Explained, R&D expenditure, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=R%26D_expenditure#R.26D_expenditure_by_source_of_funds.

pushing less committed states to close the gap with their more virtuous fellows. Similar reasoning shall apply to the harmonization of the data: it shall be mandatory to report the financial commitments in a single currency instead of using several national currencies, and as a percentage of GDP. These minor changes, easily to be implemented and basically cost-free, could reinforce the transparency of the reports. The emphasis on fostering cooperation of best practices, on capacity building, and on knowledge exchange is another clear pattern which reveals the biggest criticism of these reports, as these activities are often assessed as transfer of technology. The pivotal point is the lack of a common understanding of what shall be consider as transfer of technology, at least under the scope of Article 66.2. As we assessed, the concept is open to various interpretation which in the end results in the possibility to easily circumvent the obligations under the TRIPS Agreement.

These criticisms are well confirmed by a 28th November 2023 Document submitted by South Africa on behalf of the organisation of African, Caribbean and Pacific States (OACPS), the African Group and the LDC group, which in a highly critical excerpt reads as follows: "*While there is regular reporting by developed country Members on their contributions under Article 66.2 of the TRIPS Agreement, the reality is a lack of clarity in notifications on the nature of incentives and whether such incentives sufficiently result in technology transfer to LDCs, including whether such incentives truly contribute to the creation of a sound and viable technological base in LDCs. Many notifications continue to show that recipients of incentives are not LDCs, and where LDCs are identified in the notifications as recipients, the incentives do not result in any transfer of technology. Further in the absence of a common understanding of what comprises technology transfer, technical capacity programmes are at times passed off as technology transfer*"[87].

[87] WTO. 2023. Committee on Trade and Development, Special Session Trade Negotiations Committee. "G-90 DOCUMENT FOR THE SPECIAL SESSION OF THE COMMITTEE ON TRADE AND DEVELOPMENT (CTD-SS) ON SPECIAL AND DIFFERENTIAL TREATMENT PROPOSALS ON ARTICLE 66.2 OF THE AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (TRANSFER OF TECHNOLOGY). SUBMISSION BY SOUTH AFRICA ON BEHALF OF THE ORGANISATION OF AFRICAN, CARIBBEAN AND PACIFIC STATES (OACPS), THE AFRICAN GROUP AND THE LDC GROUP". It is interesting to note that it is South Africa to submit this document, thus not a LDCs Members. This is another

This quote serves as the perfect summary of the findings and confirms that the suggestions provided above could enhance the concretization of Article 66.2 provision. Suggestions that arise from the report itself, with a proposal for the review of the WTO Agreements that shall require developed countries to "*ensure the provision of public funds to enterprises and institutions in their territories is subject to terms and conditions that will rapidly facilitate transfer of technologies and related know-how to least developed country Members*"[88] and to "*establish and publish an inventory of all publicly (wholly or partially) owned technologies and shall on request of any least developed country Member, transfer those technologies and related know-how, by providing incentives to enterprises and institutions in their territories*"[89].

These suggestions shall tackle the criticisms that arose, as the pivotal point around which Article 66.2 revolves, it is the international technology transfer not an end in itself but capable of enabling LDC to "*create a sound and viable technological base*". As for now, this commitment lacks total consistency.

II.II. Public-Private Partnerships and Technology Transfer: Selected Examples

The OECD defines[90] Public-Private Partnerships (PPPs) as "*long term contractual arrangements between the government and a private partner whereby the latter delivers and funds public services using a capital asset, sharing the associated*

example of the "*alliances that cut across North-South boundaries*" within the WTO and which we have already discovered analysing the documents over the negotiation of the TRIPS Agreement. See footnote 38. The full text of the Document is available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/Jobs/TNCTD/8.pdf&Open=True

[88] Ibidem.

[89] Ibidem.

[90] There is not a standardized definition of PPPs. For an overview over the theme see: UNCTAD, "What are PPPs?", available at: https://investmentpolicy.unctad.org/pages/27/what-are-ppps. WORLD BANK. PPP Legal Resource Centre. "PPP Contracts Types and Terminology", available at: https://ppp.worldbank.org/public-private-partnership/ppp-contract-types-and-terminology.

risks"[91]. The purpose of this paragraph is to analyse selected examples of programs, standardized contracts and contracts clauses falling in the broad realm of PPPs and that contribute to the international ToT or deal with intellectual property rights. The same reasoning of the previous paragraph applies: the vastity of the argument requires the effort of screening the most significant activities and citing only the qualitatively superior sources. Moreover, in the dealing of the argument we will not dwell on the various types of PPPs, as it is not of primary importance in this context to delve into levels of granularity that distinguish between the various PPP contracts[92].

Having specified that, in this context it is impossible not to cite USTDA and USAID, which hold significant importance for the evaluation of the recent US practice on the field. As a matter of fact, the mission of the US Trade and Development Agency (USTDA) is to build and enhance cooperation between US private sector and partner countries, facilitating the international sharing of innovative technologies. As underlined by the 2023 Annual Report, the Agency "*helps U.S. firms export their cutting-edge technology to emerging economies where there is demand and opportunity*"[93] structuring virtuous connections advantageous for both US businesses and emerging countries.
Similar approach is pursued by the US Agency for International Development

[91] OECD. 2012. "Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships". Available at: https://www.oecd.org/governance/budgeting/PPP-Recommendation.pdf.

[92] For example, Design-Build-Finance-Operate-Maintain (DBFOM) contracts; Design-Build-Finance-Operate (DBFO)contracts; Design-Construct-Manage-Finance (DCMF)contracts; Build-Operate-Transfer (BOT) contracts; Build-Own-Operate-Transfer (BOOT) contracts; Build-Transfer-Operate (BTO) contracts; Rehabilitate-Operate-Transfer (ROT) contracts; concessions contracts; Private Finance Initiative (PFI) contracts; Operations and Maintenance (O&M) contracts; Affermage contracts; Management Contract; Franchise contract. For more information, see the PPP Contract Types and Terminology page available at: https://ppp.worldbank.org/public-private-partnership/ppp-contract-types-and-terminology.

[93] USTDA. 2023. "2023 Annual Report". Available at: https://s3-us-gov-west-1.amazonaws.com/cg-654ebf73-8576-4082-ba73-dd1f1a7fe8dc/uploads/USTDA-2023-Annual-Report-and-Financials_web.pdf.

(USAID)[94] with its Private Sector Engagement (PSE) Policy[95], and the Private Sector Collaboration Pathway[96] (the successor of the Global Development Alliances).

USTDA and USAID programs and policies represent the most successful examples of how public-private cooperation is build up with a market-based approach, leveraging the respective resources and expertise and the resulting in a more effective use of funds. The 2023 USTDA Annual Report shows the constant increasing share of financial commitment dedicated on feasibility studies, revealing the focus of facilitating businesses to fully explore their potential in the sector of reference at the early stages of the projects (Figure 2.1).

Summary of FY 2023 Program Activities

USTDA Activities

BY VALUE OF OBLIGATIONS

	2021		2022		2023	
Conference/Workshop	$5,144,715	7.4%	$8,653,981	12.8%	$3,752,663	4.1%
Desk Study/Definitional Mission	$4,165,946	6.0%	$2,853,437	4.2%	$4,182,279	4.5%
Feasibility Study	$20,914,449	30.1%	$28,980,425	43.0%	$47,068,936	51.0%
Reverse Trade Mission	$1,368,151	2.0%	$3,293,125	4.9%	$10,754,534	11.6%
Technical Assistance	$37,911,378	54.5%	$22,574,699	33.5%	$26,573,400	28.8%
Training Grant	–	–	$1,070,000	1.6%	–	–
Total	**$69,504,639**	**100%**	**$67,425,667**	**100%**	**$92,331,813**	**100%**

Figure 2.1

The PSE Policy of the USAID, defined as "*a strategic approach to planning and programming through which USAID consults, strategizes, aligns, collaborates, and implements with the private sector for greater scale, sustainability, and*

[94] "*USAID builds dynamic, mutually beneficial partnerships with the private sector to foster economic growth and improve business outcomes in the United States and in the countries where the Agency works*". USAID. 2023. "Fiscal year 2023. Agency Financial Report" Available at: https://www.usaid.gov/sites/default/files/2023-11/USAID_2023AFR_508.pdf.

[95] USAID. 2021. "Private Sector Engagement policy". Available at: https://www.usaid.gov/sites/default/files/2022-05/usaid_psepolicy_final.pdf.

[96] USAID. 2023. "Private Sector Collaboration Pathway. Annual Program Statement". Available at: https://www.usaid.gov/sites/default/files/2023-05/Private%20Sector%20Collaboration%20Pathway%20%28PSCP%29%20Annual%20Program%20Statement%20%28APS%29.pdf.

effectiveness of development or humanitarian outcomes"[97] is specifically applied in the "Country Development Cooperation Strategies" which constitute the tailored approach of USAID for a given country or region. Examples of the application of this strategy can be found in the strategy for Bangladesh[98], for the Democratic Republic of Congo[99], for Ethiopia[100], only to cite some examples of LDCs members. In these strategies the private sector is integrated to promote the macro-economic stability in the case of Bangladesh, to "*expedite new technologies and platforms for digital finance, credit, service provision (utilities), etc. that will facilitate economic growth*" in the case of Congo and to contribute to the enhancing of the health and education system in the case of Ethiopia.

Finally, it is useful to mention the activities of the Millennium Challenge Corporation (MCC), an independent foreign aid agency established by US Congress in 2004 which provides "*time-limited grants promoting economic growth, reducing poverty, and strengthening institutions*"[101]. As it emerges from this brief description of the activities, the MCC has not dissimilar "core businesses" in respect of the just cited agencies, however its significance for the argument relies on the approach of presenting its data. As a matter of fact, a special focus shall be pointed to its "Evidence Platform" database, a useful tool providing reports, studies and evidence-based, ex-ante and ex-post evaluations of the several programmes put in place by the MCC. Querying this database applying as cross-sector theme "public-private partnerships", it stands out the first interim report over "Private-Public Partnerships in Guatemala" among the most interesting documents. The report is not dissimilar to the ones we have discussed so far, in the sense that it summarizes the activities pursued, the results achieved in the first years of the activities, and

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[97] USAID. 2021. "Private Sector Engagement policy". Available at: https://www.usaid.gov/sites/default/files/2022-05/usaid_psepolicy_final.pdf.

[98] The full strategy is available at: https://www.usaid.gov/sites/default/files/2023-06/Bangladesh-CDCS-2020-2027-FINAL_1.pdf.

[99] The full strategy is available at: https://www.usaid.gov/sites/default/files/2022-05/Public_CDCS-DRC-12-2025.pdf.

[100] The full strategy is available at: https://www.usaid.gov/sites/default/files/2022-05/Ethiopia-CDCS_2019-2024_Final-Public-Dec-2019-2.pdf.

[101] More information available at: https://www.mcc.gov/about/.

other details on the specific case of Guatemala. What is interesting is the fact that the report had been commissioned by MCC to an external consultancy agency, namely "Mathematica"[102], thus, it is not a self-made report. This independent, out-sourced evaluation system implies a more realistic estimate of the activities and shall be prioritized over in-house reports which could be biased or affected by result-based evidences rather than evidence-based results.

The core of every PPP is the contract regulating the relationships between the public and the private party. In this respect, the PPP Legal Resource Centre offers a wide-ranging database of useful tools to retrieve national documents and legal acts meaningful for the analysis. Our focus, as previously anticipated, is to provide an overview of the clauses or provisions of PPP contracts which fall under the IPRs realm or facilitate transfer of technology. In doing so, we will examine provisions from the most general regarding their applicability moving towards the more granular ones specifically applied by states legislations.

The United Nations Commission on International Trade Law (UNCITRAL) adopted in 2019 a Model Legislative Provisions on Public-Private Partnerships with the aim of creating a sound international environment for the establishment of PPP. The document[103], which covers a wide-ranging set of model provisions regarding the entire lifespan of a PPP projects, comprehends a set of provisions relevant for the discussion. Starting with IPRs, accordingly to Model Provision 26, "Procedures for determining the admissibility of unsolicited proposals", paragraph 3, in the circumstance of unsolicited proposals[104] "*the contracting authority shall respect the intellectual property, trade secrets or other exclusive rights contained in, arising from or referred to in the proposal. Therefore, the contracting authority shall not make use of information provided by or on behalf of the proponent in connection with its unsolicited proposal other than for the evaluation of that proposal, except*

[102] More information available at: https://www.mathematica.org/about-mathematica.

[103] UNCITRAL. 2020. "Model Legislative Provisions on Public-Private Partnerships". Available at: https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-11011_ebook_final.pdf.

[104] I.e. proposals directly submitted by the private sector.

with the consent of the proponent"[105]. The subsequent Model Provisions 27 and 28 respectively apply if the unsolicited proposals do not involve IP, trade secrets or other exclusive rights or if they involve them, providing for different measures for the establishment of a selection procedure with the participation of other interested parties. These provisions clearly seek to strike a balance between the protection of the IPRs related to an unsolicited proposal and the necessity to avoid lack of transparency and accountability in contract awards.

Regarding transfer of technology, Model Provision 19, paragraph 2 (g) provides as appropriate criteria for the evaluation of a private sector proposal, *inter alia*, "*the social and economic development potential offered by the proposals*."[106] This provision, according to the UNCITRAL Legislative Guide on Public-Private Partnerships, shall be intended to comprehend "*the transfer of technology and the development of managerial, scientific and operational skills*"[107], thus, clearly connecting the transfer of technology as a valuable discriminant in the contracts award. Finally, Model Provision 54 on Wind-up and transfer measures is even clearer, specifying that a PPP contract shall provide for, inter alia, "*the transfer of technology required for the operation of the facility*" and "*the training of the contracting authority's personnel or of a successor private partner in the operation and maintenance of the facility*". Despite these provisions seem quite obvious, represent useful tools for the dissemination of technology in a continuous manner even after the termination of the contract.

Another useful guidance is the 2019 World Bank "Guidance on PPP Contractual Provisions" which provides, for the Confidentiality section of a PPP contract, the insertion in the contractual definition of a "Confidential Information", "*information (however it is conveyed or on whatever media it is stored) the disclosure of which would, or would be likely to, prejudice the commercial interests of any person, trade secrets, commercially sensitive intellectual property rights and know-how of either*

[105] Ibidem.

[106] Ibidem.

[107] UNCITRAL. 2020. "Legislative Guide on Public-Private Partnerships". Available at https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-10872_ebook_final.pdf. This Guide aims is intended at improving the understanding of the Model.

Party […]"[108]. Similar provisions of the ones contained UNCITRAL Guidance are envisaged in respect of the handover of the projects.

Navigating into selected LDCs' legal documents, it is a useful exercise to have an overview of their posture over PPP. Starting with Afghanistan, in his Public Private Partnership Law of 2018, no explicit mentions are dedicated to IPRs, but rather a more general protection of "*the confidentiality of commercial and monopoly rights of information mentioned in the Unsolicited Proposal*"[109] provided by Article 56, Protection of Proponent Rights, which clearly recalls the model provision discussed above. Little room is dedicated to to transfer of technology, specifically in Article 26, Local Development and Technology Transfer, which reads as follows "*In order to facilitate the promotion of local industries in Afghanistan, the PPP shall be structured in a way to ensure the opportunity for the use of local capacity and transfer of technology to the country*"[110].

The Lao People's Democratic Republic, with its 2021 Decree on Public Private Partnership[111], refers explicitly to intellectual property in Article 54, The Handover of Partnership Projects, providing for the Office of PPP to inspect, *inter alia*, "*the transfer of technologies and intellectual properties and training for state employees as specified in the project documents and in the partnership agreement*"[112]. The very definition of Public Project under Article 3 the Decree contains reference to IPRs reading ""*Public Project" refers to a partnership project between public and private entities utilizing public natural resources, assets and copyrights to improve existing (brown field) or to develop brand new (green field) infrastructures and*

[108] World Bank. 2019. "Guidance on PPP Contractual Provisions". Available at: https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/2021-03/Guidance%20on%20PPP%20Contractual%20Provisions_2019%20edition.pdf.

[109] Public Private Partnership Law of Afghanistan. Sr. No: 1322. 2018. Available at: https://ppp.mof.gov.af/wp-content/uploads/2017/05/PPP-Law-English-Final.pdf.

[110] Ibidem.

[111] Lao People's Democratic Republic. 2021. Decree on public private partnership. Printed by: Investment Promotion Department Ministry of Planning and Investment. Available at: https://investlaos.gov.la/wp-content/uploads/formidable/18/PPP_Decree_No.624.Gov_Dated_21.12.2020_English_Print.pdf.

[112] Ibidem.

services"[113]. On the contrary, the 2021 Kingdom of Cambodia's Law on Public-Private Partnerships[114] made no explicit reference to IPRs nor to technology transfer, the latter having accorded a limited room in the "Policy Paper on Public-Private Partnerships for Public Investment Project Management 2016 – 2020"[115] only in terms of general policies. The same applies for the 2015 Bangladesh Public-Private Partnership Act[116]. Concluding with Nepal, in its "Public Procurement Act, 2063, (2007)" the "*provision of the transfer of knowledge and technology*" shall constitute, *inter alia*, a criterion for the evaluation of a private proposal, reflecting the UNCITRAL Model Provision 19 discussed above.

As it emerges from this overview, the approach of certain LDCs towards Public-Private Partnerships reveals a variety, ranging from explicit provisions on IPRs and a pronounced emphasis on technology transfer as among the essential criteria for evaluating private proposals, to a complete absence of mention or minimal space allocated to these aspects only in overarching policies documents.

To conclude our research on PPP and IPRs and transfer of technology, other model contracts of developed countries can be cited. For example, the 2014 US Department of Transportation "Model Public-Private Partnership Core Toll Concession Contract Guide" provides a model provision for the transfer of assets

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[113] Ibidem.

[114] Kingdom of Cambodia. 2021. Law on Public-Private Partnerships. Available at: https://ppp.mef.gov.kh/securedl/sdl-eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpYXQiOjE3MDYwMzMxOTIsImV4cCI6MTcwNjEyMzE5MiwidXNlciI6MCwiZ3JvdXBzIjpbMCwtMV0sImZpbGUiOiJmaWxlYWRtaW4vdXNlcl91cGxvYWQvUFBQX0xBV19CT09LX05ldy5wZGYiLCJwYWdlIjoyNzN9.nFHVT5PRtGg91OR36bbd8e1wEX6J8G5iPp1dv5pd22k/PPP_LAW_BOOK_New.pdf.

[115] Kingdom of Cambodia. 2016. Policy Paper on Public-Private Partnerships for Public Investment Project Management 2016 – 2020. Available at: https://ppp.mef.gov.kh/securedl/sdl-eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpYXQiOjE3MDYwMzMxOTIsImV4cCI6MTcwNjEyMzE5MiwidXNlciI6MCwiZ3JvdXBzIjpbMCwtMV0sImZpbGUiOiJmaWxlYWRtaW4vdXNlcl91cGxvYWQvQXBwcm92ZWRfUFBQX1BvbGljeS1FbmcucGRmIiwicGFnZSI6MjczfQ.5EC-c0tZliKRYD4_9EaYEHED4MJblF2j2Jf0gWReQYE/Approved_PPP_Policy-Eng.pdf.

[116] Bangladesh. 2015. Public-Private Partnership Act. Authentic English text available at: http://www.pppo.gov.bd/download/ppp_office/PPP_Law_2015_(Approved_Translation).pdf.

which includes "*any intellectual property*"[117]. An even more precise document is the UK Treasury Standardization of PF2 Contracts[118], which contains a solid chapter on IP providing for guidelines for the ownership and licensing of IP, guidelines in case of infringements of IPR, and provisions on rights to IPR on expiry or termination of the contract,[119] which, as we saw, are the among the most common features. Comparable provisions to the above-mentioned ones of UNCITRAL on confidentiality related to IPRs and know-how are envisaged, too[120].

A similar approach is held by Ireland for its DBFOM (Design-Build-Finance-Operate-Maintain) contracts[121]: a well-organized compendium of clauses is publicly available, with Clause 26 dedicated to Intellectual Property, defining provisions in case of infringements by the contractor or the authority, rights to IPR on expiry or termination and other specific legal obligations[122], together with useful cross-references to other linked clauses the parties may agree on.

Less space has been dedicated to the model contracts of developed countries, both because the focus are LDCs and because, as seen from these examples, the provisions are very similar to each other, which emphasizes the greater level of protection accorded to IPRs in the developed countries. It is interesting to note that the concept of technology transfer is not present, underscoring the different approach adopted in the structure of these model contracts by LDCs and their

[117] US Department of Transportation. 2014. "Model Public-Private Partnership Core Toll Concession Contract Guide". Available at: https://www.fhwa.dot.gov/ipd/pdfs/p3/model_p3_core_toll_concessions.pdf.

[118] See footnote 92. PF2 contracts are the evolution of Private Finance Initiative (PFI).

[119] HM Treasury. 2012. "Standardisation of PF2 Contracts", chapter 33. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/207383/infrastructure_standardisation_of_contracts_051212.PDF.

[120] Ibidem, chapter 31.9.

[121] This acronym form part of the specific nomenclature regarding PPP. See footnote 92.

[122] IE GOV. COMPILATION OF PPP TERMS AND CONDITIONS OF CONTRACT. PUBLIC SECTOR VERSION. CLAUSE 26: INTELLECTUAL PROPERTY. Available at: https://wayback.archive-it.org/10702/20180424174649/http://ppp.gov.ie/wp/files/documents/DBFOM_Contract/clause-26.pdf.

developed fellows due to their different necessities.

III. TODAY AND TOMORROW: THE DEBATE WITHIN THE WTO OVER VOLUNTARY LICENSING IN THE AFTERMATH OF THE COVID-19 PANDEMIC

The objective of this chapter is to discuss the debate within the WTO regarding the issue of *voluntary* licenses after the COVID-19 experience with a special focus on pharmaceutical products, and this will be done after providing a general overview of the concept itself and the international regulatory system of *compulsory* licenses.

III.I. VOLUNTARY LICENCING AND THE WTO COMPULSORY LICENCING FRAMEWORK

The International Chamber of Commerce drafted a model contract specifically intended for transfer of technology, the "ICC Model Transfer of Technology Contract", which is intended for a "*situation where a company (licensor)* […] *licenses to another company (licensee) a global package of information and intellectual property rights in order to put the licensee in the condition to manufacture the products using the technology of the licensor.*" [123]

This model contract is the best example of "voluntary licensing", i.e. the intentional agreement between an IPRs' holder and a third part in which the former agrees to the latter the consent of producing a patented product or process, whatever it may be.

On the other hand, compulsory licensing can be granted by public authorities in the absence of appropriately structured voluntary arrangements under certain conditions for their applicability and as last resort solution in particular cases.

In this regard, the TRIPS Agreement sets the international standards over this matter in its Article 31 and Article 31bis, which are useful to analyze to framework the state of play.

TRIPS Article 31, "Other Use Without Authorization of the Right Holder", specifies a set of provision that shall be respected "*Where the law of a Member allows for other use of the subject matter of a patent without the authorization of*

[123] International Chamber of Commerce. 2009. "ICC Model Transfer of Technology Contract". ISBN: 978-92-842-0023-8.

the right holder, including use by the government or third parties authorized by the government". This set of provisions limit the discretion of guaranteeing such licensing, which shall be in relation with domestic market ("*any such use shall be authorized predominantly for the supply of the domestic market of the Member authorizing such use*"[124]), shall be permitted if "*prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time*"[125], shall be "*liable, subject to adequate protection of the legitimate interests of the persons so authorized, to be terminated if and when the circumstances which led to it cease to exist and are unlikely to recur*"[126] and "*the right holder shall be paid adequate remuneration in the circumstances of each case, taking into account the economic value of the authorization*"[127]. Moreover, compulsory licensing shall be "*considered on its individual merits*"[128], its scope and duration shall be "*limited to the purpose for which it was authorized*"[129], it shall be non-exclusive[130] (i.e. the right holder can continue to produce), non-assignable[131] (i.e. the licence cannot be sold) and judicial or other independent review shall be available regarding its legal validity[132] and the

[124] Article 31, letter (f).

[125] Article 31, letter (b). In case of "*national emergency or other circumstances of extreme urgency*" the tentative of obtaining the authorization directly from the right holder it is not needed, but the right holder shall "*be notified as soon as reasonably practicable*". In case of "*public non-commercial use*", the tentative of obtaining the authorization directly from the right holder it is not needed, but the right holder shall "*be informed promptly*" if there is the acknowledging that a patent will be used (the exact phrasing is "*where the government or contractor, without making a patent search, knows or has demonstrable grounds to know that a valid patent is or will be used by or for the government*").

[126] Article 31, letter (g).

[127] Article 31, letter (h).

[128] Article 31, letter (a).

[129] Article 31, letter (c).

[130] Article 31, letter (d).

[131] Article 31, letter (e).

[132] Article 31, letter (i).

amount of the remuneration[133]. Finally, subparagraph (k) provides for exceptions to the application of subparagraph (b) and (f) if the compulsory licensing "*is permitted to remedy a practice determined after judicial or administrative process to be anti-competitive*", while subparagraph (l) envisages additional conditions when the exploitation of a patent determines the infringement of another patent.

At that point, the 2001 Doha Declaration on the TRIPS Agreement and public health[134], being silent Article 31 and, in general, the TRIPS Agreement, over what shall constitute a "*national emergency or other circumstances of extreme urgency*" under subparagraph (b), clarified that "*Each Member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency*"[135] and that "*public health crises*" are for sure comprehended. This was a focal point, as "*national emergency or other circumstances of extreme urgency*" exclude the obligation of tentatively obtain the authorization directly from the right holder, shortening the process for the authorization of a compulsory licence.

Additionally, the Declaration emphasised a simple but central point: as we saw, accordingly to subparagraph (f), compulsory licensing shall be "*authorized predominantly for the supply of the domestic market of the Member authorizing such use*", but that essentially signified that the provision generated insurmountable obstacles for LDCs Members, resulting in a lack of effectiveness of the compulsory licensing option in their peculiar circumstances. This was because a patented product under an authorized compulsory licence accorded by a LDCs' jurisdiction could not be produced in the country in question due to the lack of a proper industrial base, and it could not be exported from a state with production capabilities either, as subparagraph (f) does not allow the issuance of compulsory licenses solely for export purposes, as just highlighted.

This issue was particular pressing for pharmaceuticals products.

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[133] Article 31, letter (j).

[134] WTO. MINISTERIAL CONFERENCE. Fourth Session. 2001 "DECLARATION ON THE TRIPS AGREEMENT AND PUBLIC HEALTH". Full text of available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/Min01/DEC2.pdf&Open=True.

[135] Ibidem, paragraph 5(c).

This obstacle would have been overcome with an amendment of the Agreement, for which the Declaration solicited for in its paragraph 6, which reads as follows: "*We recognize that WTO Members with insufficient or no manufacturing capacities in the pharmaceutical sector could face difficulties in making effective use of compulsory licensing under the TRIPS Agreement. We instruct the Council for TRIPS to find an expeditious solution to this problem and to report to the General Council before the end of 2002.*"

The result has been the WTO General Council's adoption of the 2005 Protocol Amending the TRIPS Agreement, which entered into force on 23 January 2017 after two-thirds of the Members accepted it, and it is binding only among them and among Members which hereafter accepted it.

The Protocol added Article 31bis, an Annex and an Appendix to the Annex. Our focus is on the first paragraph of Article 31bis, which provides an exception of Article 31 subparagraph (f) for an exporting member "*with respect to the grant by it of a compulsory licence to the extent necessary for the purposes of production of a pharmaceutical product(s) and its export to an eligible importing Member(s*)". The focal point of our discussion lays here; nevertheless, for enhanced completeness, it's important to mention that another derogation is envisaged for the remuneration of the right holder (i.e. of Article 31 subparagraph (h))[136], while the Annex clarifies the definition of the terminologies used[137], the terms for the granting of the compulsory licence[138], "*reasonable measures*" for the best application of the compulsory licence[139], and other requirements over the availability of legal remedies. Interestingly, a recall to Article 66.2 is present, too.

[136] The derogation reads as follows: "*Where a compulsory licence is granted for the same products in the eligible importing Member, the obligation of that Member under Article 31(h) shall not apply in respect of those products for which remuneration in accordance with the first sentence of this paragraph is paid in the exporting Member*".

[137] E.g. the definitions of "pharmaceutical product", "eligible importing Member, and "exporting Member".

[138] E.g. the guidelines for the importing Member notification to the Council of TRIPS, the guidelines for the conditions that the licence shall contain, and a notification by the exporting Member to the Council of TRIPS of the grant of the licence.

[139] E.g. to avoid re-exportation of the products.

Finally, the Appendix clarifies the assessment of manufacturing capacities in the pharmaceutical sector[140].

Having clear the WTO international framework for compulsory licensing, it is interesting to note how is performed so as to collecting insight over Members' practice. Thus, if we query the e-TRIPS gateway[141], i.e. the single point of access for TRIPS-related information, under the section "Notifications related to the special compulsory licensing system", we find that only two Members other than LDCs Members, i.e. Antigua and Barbuda[142] and Bolivia[143], decided to notify to the Council of TRIPS of their intention to use the special compulsory licensing system as an importing Member. In addition, the only granting of a compulsory licence for export has been pursued, back in 2007, by Canada[144] after the filing of an application by Rwanda[145], and in accordance with WTO General Council Decision of 30 August 2003 on the Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health[146], which was the "interim" solution on which the above-mentioned 2005 Protocol was based. Finally, a 2021 Notification of need to import pharmaceutical products (estimated in 15 million doses of COVID-19 vaccines) under the special compulsory licensing system pursued by Bolivia[147] has remained unfulfilled.

The open-source data and information available in the e-TRIPS gateway reveal a

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[140] LDCs are "*deemed to have insufficient or no manufacturing capacities in the pharmaceutical sector*". Conditions are envisaged for other eligible importing Members.

[141] Available at: https://e-trips.wto.org.

[142] WTO. Document IP/N/8/ATG/1, available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/N/8ATG1.pdf&Open=True.

[143] Document IP/N/8/BOL/1, available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/N/8BOL1.pdf&Open=True.

[144] WTO. Document IP/N/10/CAN/1, available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/IP/N/10CAN1.pdf&Open=True.

[145] WTO. Document IP/N/9/RWA/1, available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/IP/N/9RWA1.pdf&Open=True.

[146] Full text of the Decision available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/L/540.pdf&Open=True.

[147] Document IP/N/9/BOL/1, available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/N/9BOL1.pdf&Open=True.

depressing landscape regarding the exploitation of the opportunities provided by the amended TRIPS Agreement and suggest that compulsory licencing is not fully functional regarding its objectives.

III.II. The Debate on Voluntary Licencing within the Council for TRIPS

Against the discouraging framework acknowledged in the previous paragraph, the importance of accomplishing voluntary licensing clearly stands out as one possible solution of the pressing problems of the unequal distribution of pharmaceutical products.[148]

As a matter of fact, the discussion is ongoing in the Working Group on Trade and Transfer of Technology within the Council for TRIPS, and, more specifically, has been introduced by a communication from the United Kingdom on "Intellectual Property, Voluntary Licensing and Technology Transfer", which has as clear objective to examine "*the factors influencing and underpinning the formation of these partnerships* (Editor's note: voluntary licensing and/or technology transfer partnerships) *and for Members to share experiences on how more partnerships may be formed as a further step to achieving equitable access to health products and technologies*"[149]. This first-step communication stresses the importance of the TRIPS Agreement framework, which provides "*confidence to invest in R&D activity*"[150] and "*plays an integral part in providing a constructive means to structure and enable the formation of these partnerships*"[151]. Moreover, according to the UK point of view, voluntary arrangements themselves are "*means of*

[148] See: WHO. 2017. "Access to medicines: making market forces serve the poor". Available at: https://cdn.who.int/media/docs/default-source/essential-medicines/fair-price/chapter-medicines.pdf?sfvrsn=adcffc8f_4&download=true.

[149] WTO. Council for Trade-Related Aspects of Intellectual Property Rights. Working Group on Trade and Transfer of Technology. 2023. "Intellectual Property, Voluntary Licensing and Technology Transfer. Communication from the United Kingdom". Paragraph 4. Full text of the communication available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/C/W704R1.pdf&Open=True.

[150] Ibidem, paragraph 8.

[151] Ibidem, paragraph 9.

consolidating the confidence which the IP framework provides"[152].

A part dedicated to the link between voluntary licensing, transfer of technology and the factors which influence the assessment of a potential licensee (as we saw with the above-mentioned ICC Model Transfer of Technology Contract, transfer of technology is often one of the features of voluntary licensing or the principal one), while another meaningful section is dedicated to the barriers to effective partnerships other than the ones strictly linked to the licensee. In this case, UK recalls tariff and non-tariff barriers and the use of export restrictions as clear elements of constraints for the establishment and the well execution of these partnerships.

The communication ends with the purpose of continuing the dialogue on the base of a series of considerations, clustered as follows:

> *a. Noting the importance and prevalence of voluntary licensing and/or technology transfer, how could Members facilitate further voluntary licensing and/or technology transfer?*
>
> *b. What other factors may affect the successful formation of partnerships?*
>
> *c. What national and/or international, public and/or private stakeholder experiences could be brought for discussion? For example:*
>
> *i. How have domestic policies helped Member's pandemic response efforts?*
>
> *ii. Where has a Member successfully incentivized technology transfer?*
>
> *iii. Where has an entity in a Member successfully been the recipient of technology transfer and/or voluntary licensing and what were the factors for success?*
>
> *iv. Where has an entity in a Member been unsuccessful in*

[152] Ibidem, paragraph 12.

forming a partnership – if so, why?

d. What challenges have entities in a Member experienced previously in securing voluntary licensing and/or technology transfer partnerships, and how were they overcome?

e. What challenges are Members currently experiencing in helping facilitate partnerships?

Finally, an Annex of successful examples of partnerships is attached, which comprises the agreement between AstraZeneca-Oxford University with more than 20 vaccine manufacturing organisations such as the Serum Institute of India (SII) and Fiocruz in Brazil, between Shionogi (Japanese pharmaceutical company) and the Medicines Patent Pool (MPP, which is "*a United Nations-backed public health organisation working to increase access to and facilitate the development of life-saving medicines for low- and middle-income countries*[153]), between Pfizer and MPP, agreement which covers 95 countries, and between MSD, Gilead, Eli Lilly and generic pharmaceutical manufactures. Data are dispensed on tangible results of these collaborations.

How to encourage voluntary licensing within the facilitator framework delivered by the TRIPS Agreement has been part of the agenda of the 13 October 2023 Working Group on Trade and Transfer of Technology meeting. Based on the UK document, a number of Members delivered their statements on the topic[154].

Leaving aside the most neutral declarations of Chile, Japan, Colombia, United States, European Union, Canada, and the Philippines, which welcomed the UK communication, recognized the relevance of the issue and its multi-factors nature, and underlined their willingness to actively participate and engage in the discussion, are remarkable the statements of Switzerland and India.

[153] More information available at: https://medicinespatentpool.org.

[154] WTO. Working Group on Trade and Transfer of Technology. 2023. "Note in the Meeting of 13 October 2023. Chairperson: H.E. Sofia Boza Martinez (Chile)". Full text available at https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/WGTTT/M71.pdf&Open=True.

Switzerland declared:

> *Many factors are needed to create real incentives for technology transfer to happen, including the right infrastructure, a conducive business environment, sufficient absorption capacity, and last but not least, a well-functioning, reliable, safe, and enforceable regulatory framework, including the protection of intellectual property rights. Ultimately, it is regularly the private sector which is the holder of technology, and it will decide, on the basis of these and other factors, whether and with whom to share its technology.* [155]

Voluntary licensing is cited only in the following paragraph which completes the declaration. It is remarkable the willingness of Switzerland of firmly underlining its steadfast approach over the necessity of a full protection of IPRs as prerequisite for every discussion over voluntary licensing and transfer of technology.

Moreover, Switzerland further stresses its position citing the concept of absorption capacity, which shall be intended as all the "framework conditions" of the recipient country which smooth transfer of technology, such as "*the quality of the education system and the technical skills of the workers, the existing infrastructures and the characteristics of the production system, the effectiveness of the banking system, the commercial environment, and so on*"[156].

Recalling what we saw in the previous chapter, e.g. the demonstrated ambiguity between what shall be considered transfer of technology and what shall fall under

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[155] Ibidem, paragraph 34.

[156] WTO. Council for TRIPS. Working Group on Trade and Transfer of Technology. 2003. "REFLECTION PAPER ON TRANSFER OF TECHNOLOGY TO DEVELOPING AND LEAST-DEVELOPED COUNTRIES. Communication from the European Communities and their member States". Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/WGTTT/W5.pdf&Open=True.

technical cooperation programmes, recalling the concept of absorption capacity in this context, even if duly considering the positive consequences it brings with for the recipient country, may result in blaming recipient countries themselves if transfer of technology is not fully effective. As we will see, India underlines this issue in its declaration.

India's statement is with any doubt the harshest. After having underlined the reality of the pandemic response declaring "*The access to vaccine and other health product was anything but predictable or equitable or affordable. There are many barriers to it, lack of technology transfer and inflexibility in the IP regime figure at the very top in such barriers*"[157], it stressed that the issuing of voluntary licenses "*has not been an adequate response to the COVID-19 Pandemic*"[158] and "*we needed measures by way of TRIPS waiver for vaccine, and also need extension of the TRIPS waiver to cover the production and supply of COVID-19 diagnostic and therapeutics*"[159].

According to India's point of view, "*The debate around voluntary licenses must not in any way attempt undermining the ministerial mandate on the TRIPS waiver*[160]. *We would be willing to engage in this deliberation provided the* ***debate is an honest and balanced one****, wherein developed Members reflect what they have done and what they are willing to do to champion the technology transfer*"[161] (emphasis added) and "*the proponent* (Editor's note: UK) *has highlighted these instances of specific partnership successes. In that sense we see* ***certain lop-sidedness in the submission****. If we read, it appears as if in terms of all these paragraphs on the barriers or enablers action rests with the developing country. So that is the impression which comes in the first read*"[162] (emphasis added). Additionally, India

[157] Ibidem, paragraph 39.

[158] Ibidem, paragraph 40.

[159] Ibidem, paragraph 40.

[160] WTO. 2022. "Ministerial Decision on the TRIPS Agreement Adopted on 17 June 2022". Full text of the Decision available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN22/30.pdf&Open=True.

[161] WTO. Working Group on Trade and Transfer of Technology. 2023. "Note in the Meeting of 13 October 2023. Chairperson: H.E. Sofia Boza Martinez (Chile)", paragraph 41.

[162] Ibidem, paragraph 42.

firmly criticized the abuse of propriety rights' holder and declared that "*discussion would be healthier if it highlights any specific effort that developed Members may have made to check such abuses and the effort made therein*."[163]

These quotes represent the opposite approach taken by Switzerland and India and reflect the broad division between developed and developing Members. The confrontational nature of the dialogue over this issue is substantiated with clear-cut interrogations from India's side regarding the concrete commitments and efforts made by developed countries to tackle every point early cited.

It is noteworthy to note that the Ministerial Decision on the TRIPS Agreement adopted on 17 June 2022, i.e. the TRIPS waiver on Covid-19 vaccines cited by India[164], was firstly proposed by India itself and South Africa back in October 2020[165]. Basically, it took nearly two years for the adoption, thus significantly limiting its relevance. Moreover, the same Decision, at its paragraph 8, mandated that "*No later than six months from the date of this Decision, Members will decide on its extension to cover the production and supply of COVID-19 diagnostics and therapeutics*." Extension after extension[166], as underlined by India, the discussion is still ongoing and the result will be again a lack of relevance of the Decision, once (and if) adopted.

It is difficult to envisage how the dialogue between developed and developing Members will proceed in the coming months and years. As we saw, voluntary licensing is strictly linked to technological transfer and while developing Members and LDCs still struggle to build up their economies towards more advanced ones, seeking support for the catch-up process from the latter, developed members, in this

[163] Ibidem, paragraph 43.

[164] See footnotes 159 and 160.

[165] WTO. Council for TRIPS. 2020. "WAIVER FROM CERTAIN PROVISIONS OF THE TRIPS AGREEMENT FOR THE PREVENTION, CONTAINMENT AND TREATMENT OF COVID-19. COMMUNICATION FROM INDIA AND SOUTH AFRICA". Full text available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/C/W669.pdf&Open=True.

[166] "Members continue discussion on TRIPS Decision extension to therapeutics and diagnostics", March 2023, https://www.wto.org/english/news_e/news23_e/heal_17mar23_e.htm.

case well represented by Switzerland, are somewhat sticked in their positions of "blaming" the small-attractive environment of their less developed fellows, thus pushing for reforms.

Even if in principle both parties have reasonable points in their favor, it shall be noted that this deficiency of the cooperation, and the perceived little effectiveness which arises of the WTO, could undermine the roots of the multilateral system, which, after all, permitted a constant and durable economic development not only in the West, as shown by the figure 3.1 below.

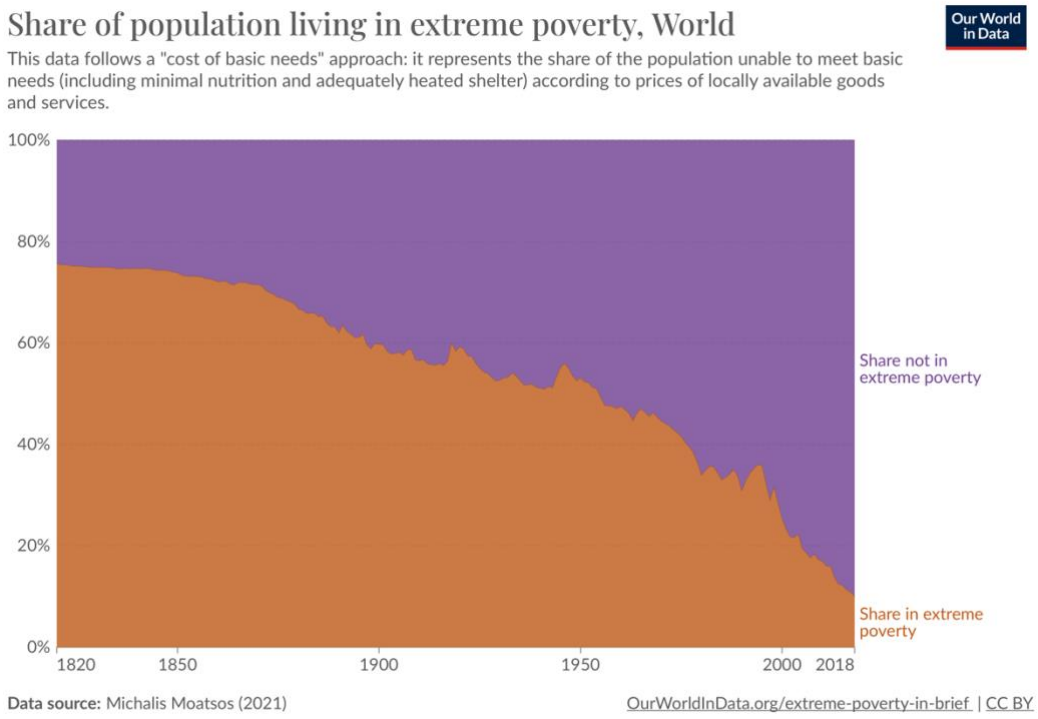

Figure 3.1

CONCLUDING REMARKS

How can international transfer of technology be achieved while protecting intellectual property rights? What remedies has been established by the multilateral framework to strike a balance between these opposite interests? What are the efforts implemented to share the results of R&D investments? And in which modalities are concretized? What is the state of debate inside a prominent organisation such as the WTO?

The dissertation delved into these wide interrogatives seeking the most objective responses, by querying international organizations' databases, critically assessing governments reports, duly considering where laid the bargaining power and how the political context shaped the debate.

However, at this point, some personal opinions are due. As we extensively saw, at the very heart of the issue lays the uneven distribution of new technologies' creation and IPRs granted which, with a cascade effect, have massive ripples on the wellbeing of literally billions of people around the globe. I tried to highlight it especially with the last chapter, given that speaking about pharmaceutical products provokes an automatic consciousness about the scale of the problems, but it should be kept in mind that only general economic development, which acts as a trigger of countless beneficial effects, could enhance the standards of living, and freed people from inaudible conditions.

Put in simpler and harsh terms: underdevelopment and poverty kill as much people as a wave of disease for which no medicines are available. This is demonstrated by countless research papers which evidence the strict correlation between poverty and basically every negative condition a person can live with[167].

It would be naive thinking that changing the international IPRs regulatory framework slightly easing the protection accorded to IPRs' holder could act as the silver bullet for the resolution of this complex and multi-factor problem. But I am fully convinced that it could represent a strong symbol offered by developed countries to LDCs and developing ones, as IPRs are somewhat perceived as the emblem of the West leading technologies power which limit their development

[167] See Our World in Data, Poverty, available at https://ourworldindata.org/poverty.

possibility. Moreover, it could undermine the anti-West narrative which is strongly arising. As a matter of fact, contemplating easing IPRs' protection is not a totally unwise proposal but it has its supporters in academic. Professors Boldrin and Levine, in their book "*Against Intellectual Monopoly"* [168], argue that intellectual monopoly is detrimental for innovation, concluding their book stating:

> *For centuries, the cause of economic progress has identified with that of free trade. In the decades to come, sustaining economic progress will depend, more and more, on our ability to progressively reduce and eventually eliminate intellectual monopoly. As in the battle for free trade, the first step must consist in destroying the intellectual foundations of the obscurantist position. Back then the mercantilist fallacy taught that, to become wealthy, a country must regulate trade and strive for trade surpluses. Today, the same fallacy teaches that, without intellectual monopoly, innovations would be impossible and that our governments should prohibit parallel import and enforce draconian intellectual monopoly rules. We hope that we have made some progress in demolishing that glass house.*

As I am fully convinced of the utility of such a "New Deal" regarding IPRs, I am also fully convinced that the minority voices, such as the ones of Professors Boldrin and Levine, will not be heard and that the political willingness of proposing such a plan is not existent.

[168] Boldrin, M., & Levine, D. K. (2008). "*Against Intellectual Monopoly"*. Cambridge: Cambridge University Press. The book provides a series of concrete examples and remedies to the uncompetitive effects of the actual IPRs system.

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Ad ogni persona, dalla più vicina alla più lontana, che oggi, anche solo per un fugace istante, penserà "*Sono orgoglioso/a di lui*": questo è dedicato anche a te.