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Use It or Lose It?

Assessing the Compatibility of the Working Requirements in the Paris Convention & TRIPS

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Introduction

In his “Poor Man’s Tale of a Patent”, Charles Dickens’s protagonist questions whether it is “reasonable to make a man feel as if, in inventing an ingenious improvement meant to do good, he had done something wrong?”¹ This is a question that many British inventors likely asked themselves in the early 20th century. At the time, the United Kingdom saw a revival of the Elizabethan forfeiture clauses² that were – in former times – inserted into patent grants, declaring them void unless the patentee put the patent into practice locally within a limited period. In this context, barrister, Ernest Lunge commented that such working requirements were “vexatious and injurious to inventors without producing any advantage to the community”. In his view, a system of compulsory licenses or reciprocal treaties was more ‘intelligent’.³

The Paris Convention for the Protection of Industrial Property⁴ was the first such ‘reciprocal treaty’ regulating intellectual property. Incorporated into the Agreement on Trade-Related Aspects of Intellectual Property Rights,⁵ its Article 5(A)(2) allows Contracting Parties to:

[...] take legislative measures providing for **the grant of compulsory licenses to prevent the abuses** which might result from the exercise of the exclusive rights conferred by the patent, **for example, failure to work [emphasis added]**.

This possibility is, however, subject to a number of conditions as set out in Article 5(A)(1):

[a] compulsory license may **not** be applied for on the ground of failure to work or insufficient working **before the expiration of a period of four years** from the date of filing of the patent application **or three years** from the date of the grant of the patent,

¹ C. Dickens, “A Poor Man’s Tale of a Patent” in: *Works of Charles Dickens: Hard Times for these Times*, vol. 2 (New York: Hurd and Houghton, 1869) at 150.

² See section 27 of the United Kingdom Patents and Designs Act 1907.

³ See E. Lunge, *Compulsory Working and Revocation of Patents* (London: Stevens and Sons, Limited, 1910) at preface and 4. It is likely that Lunge found forfeiture to be particularly vexatious since compulsory licenses at least produced an advantage to the community.

⁴ 21 UST 1583, 828 UNTS 305 [hereinafter the “Paris Convention”].

⁵ *Agreement on Trade-Related Aspects of Intellectual Property Rights*, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 320 (1999), 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter the “TRIPS Agreement”]. The TRIPS Agreement, through Article 2.1, incorporates the Paris Convention and both apply on an equal footing. It should be noted that incorporation “was mainly undertaken in order to link the provisions of the Berne and Paris Conventions to the WTO dispute settlement and render them enforceable within the multilateral trading system”. See F.M. Abbott *et al.*, *International Intellectual Property in an Integrated World Economy*, 2nd ed. (New York: Wolters Kluwer Law & Business, 2001).

whichever period expires last; it **shall be refused if the patentee justifies his inaction by legitimate reasons**. Such a compulsory license shall be **non-exclusive and shall not be transferable**, even in the form of the grant of a sub-license, except with that part of the enterprise or goodwill which exploits such license” [emphasis added].⁶

Article 5(A)(2), in conjunction with Article 5(A)(1), strikes what Lunge would likely have perceived as an ‘intelligent’ balance between the interests of patentees and the community.⁷ But are working requirements truly in the interests of the local community that they are meant to supply / serve? And are the effects of compulsory licenses and forfeiture, on the patentee’s incentives, not almost the same?⁸

The calculation of costs and benefits of a working requirement on the local community depend on a number of factors, including whether the local demand for a patented invention can be met in a more efficient and economic manner through importation. The results of the calculation are, therefore, likely to vary among regions and technology sectors. Nevertheless, a number of Contracting Parties to the Paris Convention have – potentially to their detriment – enacted working requirements that indiscriminately exclude importation as a means of meeting these requirements and thereby appear to fly in the face of Article 27.1 of the TRIPS Agreement:

“[...] patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.”⁹

While Article 27.1 of the TRIPS Agreement specifically requires Contracting Parties to treat patented inventions on a non-discriminatory basis irrespective of whether they are produced locally or imported, the non-working or insufficient working of a patented invention in a

⁶ Article 5(A)(1) of the Paris Convention.

⁷ Note that compulsory licensing was seen as an improvement in terms of a patentee’s risk of forfeiture: see J.H. Reichman & C. Hasenzahl, “Non-Voluntary Licensing of Patented Inventions, Historical Perspective, Legal Framework under TRIPS and an Overview of the Practice in Canada and the USA”, UNCTAD-ICTSD Project on Intellectual Property Rights and Sustainable Development, Issue Paper No. 5 (Geneva: UNCTAD, 2003) at 4. As a result of revisions to Article 5(A) made at The Hague in 1925, the reference to ‘failure to work’ was introduced into the Paris Convention and forfeiture became subsidiary to the issuance of a compulsory license where the latter failed to remedy failure to work. See N.P. De Carvalho, *The TRIPS Regime of Patent Rights*, 3rd ed. (Alphen aan den Rijn: Kluwer Law International, 2010) at 283 and P.-T. Stoll *et al.*, eds, WTO – *Trade Related Aspects of Intellectual Property Rights* (Leiden: Martinus Nijhoff Publishers, 2009) at 558.

⁸ According to R. Bird & D.R. Cahoy, “The Impact of Compulsory Licensing on Foreign Direct Investment” (2008) 45:2 *American Business Law Journal* 283 at 286, “[t]he imposition of a compulsory license – explicitly endorsed in international law [at Article 31 of the TRIPS Agreement] – is one of the most significant reductions in rights [...]”.

⁹ See Article 27.1 of the TRIPS Agreement.

jurisdiction that has adopted ‘exclusively local’ working requirements – though not subject to forfeiture¹⁰ – may result in potentially discriminatory restrictions on the patentee’s rights.

The interface between Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement clearly causes difficulties, and while the latter is more recent than the former, it cannot simply be given predominance. The first part of this paper looks to the relevant patent laws from a selection of countries. Special consideration is given to the literature on point and the canon of treaty interpretation under the Vienna Convention on the Law of Treaties¹¹ in an attempt to reconcile the Paris Convention and the TRIPS Agreement. Since the treaty interpretation points to economic factors discussed in the *travaux préparatoires* of the TRIPS Agreement, the second part of the paper looks to empirical economic studies in order to assess the impact of working requirements on different countries.

It is argued that social and economic welfare costs and benefits should be factored in to the decision of patentees to either (i) import finished commodity patented inventions through trade or (ii) engage in local working of the patented invention in the patent-granting country through foreign direct investment (FDI). It is also argued that the effect of such decisions will vary, depending on the level of economic development of the patent granting country, *i.e.* if it is a developed country, a developing country (DC) or a least developed country (LDC),¹² and depending on the technology sector involved. Since working requirements are targeted at specific technology sectors, the impact of these requirements on different sectors is discussed in the third part. In our conclusions, we find that Article 5(A)(2) of the Paris Convention is compatible with Article 27(1) of the TRIPS Agreement and we propose informed policy recommendations that must be balanced with graduated compensation for compulsory licensing.¹³

¹⁰ Article 5(A)(1) Paris Convention: “(1) Importation by the patentee into the country where the patent has been granted of articles manufactured in any of the countries of the Union shall not entail forfeiture of the patent.”

¹¹ See the Vienna Convention on the Law of Treaties of 23 May 1969 (SR 0.111) [hereinafter the “Vienna Convention”]. Note that questions of interpretation of treaty norms related to international intellectual property rights (IPRs) are generally addressed by reference to the law of treaties.

¹² The WTO defines the voluntary category of LDCs and the following countries fall under its definition: Angola, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Congo, Democratic Republic of the, Djibouti, Gambia, Guinea, Guinea Bissau, Haiti, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Solomon Islands, Tanzania, Togo, Uganda, Zambia. See the website of the WTO [online], <http://www.wto.org/english/thewto_e/whatis_e/tif_e/org7_e.htm> (23.05.2012).

¹³ Inspired by progressive liberalisation, the doctrine of graduation generally relates to the individual scheduling of commitments for countries in a manner that corresponds to their diverging levels of economic development: as development progresses, countries can ‘graduate’ to a higher level of international commitment: see T. Cottier, “The Future Geometry of WTO Law: From Progressive Liberalization to Progressive Regulation in WTO Law” (2006) 9 *Journal of International Economic Law* 779 at 818.

I. Working Requirements in light of Article 27.1 TRIPS

Over ten years ago, the Permanent Mission of the United States requested consultations with the Government of Brazil under the World Trade Organization Dispute Settlement Understanding regarding Article 68 of Brazil's Law No. 9,279 of 14 May 1996. The specific provision establishes a local working requirement for patents that can only be satisfied by local production of the patented invention,¹⁴ and the United States questioned the provision's compliance with the TRIPS Agreement, in particular Article 27. Given pressure from world leaders and health organizations, the United States withdrew its complaint because of the potential damage to Brazil's HIV / AIDS Program,¹⁵ and the parties reached a settlement.¹⁶ Consequently, the question as to whether working requirements comply with the TRIPS Agreement remains unanswered.

As described in a table in the Annex to this paper, the legislation of a number of countries, which is "in compliance"¹⁷ with Article 5(A)(2) of the Paris Convention, is difficult to reconcile with Article 27.1 of the TRIPS Agreement. In the Annex, we classify legislated working requirements from a selection of developed countries, DCs and LDCs¹⁸ into two categories. CATEGORY 1 working requirements are either unqualified, exclusively local (explicitly excluding importation as a means of meeting local demand for patented inventions), or allow for the outright revocation of patents.¹⁹ CATEGORY 2 working

¹⁴ Brazil – Measures Affecting Patent Protection - Request for Consultations by the United States, WT/DS199/1, G/L/385, IP/D/23 (8 June 2000). See also X. Liu, "A Study on Patent Compulsory License System in China – With Particular Reference to the Drafted 3rd Amendment to the Patent Law of the P.R. of China" in: M.J. Adelman *et al.*, eds, *Patents and Technological Progress in a Globalized World: Liber Amicorum Joseph Straus* (Munich: Springer, 2009) at 117.

¹⁵ B.J. Condon & T. Sinha, *Global Lessons from the AIDS Pandemic: Economic, Financial, Legal and Political Implications* (Heidelberg: Springer-Verlag, 2008) at 40. See also N.P. De Carvalho, *supra*, note 7 at 291.

¹⁶ Brazil - Measures Affecting Patent Protection - Notification of Mutually Agreed Solution, WT/DS199/4, G/L/454, IP/D/23/Add.1 (19 July 2001).

¹⁷ See the language of the relevant Lebanese legislation in the Annex.

¹⁸ In an annex to a WIPO publication [on line], <http://www.wipo.int/edocs/mdocs/scp/en/scp_15/scp_15_3-annex5.pdf> (04.04.2012), C. Visser lists 29 different countries where working requirements are in force: Algeria, Argentina, Bahrain, Bangladesh, Brazil, Canada, Egypt, Ethiopia, Ghana, India, Indonesia, Jordan, Kenya, Lebanon, Malaysia, Mexico, Morocco, Mozambique, Nigeria, Philippines, Qatar, Saudi Arabia, South Africa, Tanzania, Thailand, Tunisia, Uruguay, Zambia, and Zimbabwe. The present paper neither discusses the patent laws of Tanzania, due to the difficulty of obtaining IP legislation online, nor the patent laws of Bahrain, Lebanon and Qatar.

¹⁹ This can be contrasted to a compulsory license, which does not entirely eliminate the IPR: see R. Bird & D.R. Cahoy, *supra*, note 8 at 290.

requirements leave room, either implicitly or explicitly, not only for importation to satisfy these requirements but also for part of the patented invention to be worked abroad.²⁰

With the effect of working requirements being to compel foreign patentees to transfer technology and situate production facilities within the patent-granting jurisdiction, and Article 5(A)(2) of the Paris Convention allowing for such measures of protection to be taken in order to prevent abuses resulting from the exclusivity of IPRs, it comes as no surprise then that many DCs and LDCs impose working requirements for patented inventions.²¹ They claim that few inventions and processes patented domestically are actually used in domestic production; that the monopoly created by IPRs is being used to restrict competitors' access to internal markets; and that IPRs are driving up the prices of new technologies.²²

Since working requirements are meant to induce foreign patent owners to bring human and financial capital into the territory of patent granting countries,²³ enforcement of working requirements can be seen as a form of 'protectionism'.²⁴ Since working requirements allow governments to intervene in restricting / weakening IPRs through compulsory licenses, the protectionism of working requirements is negatively associated with the strength of IPRs. A

²⁰ For instance, under Indian law, though this is not clear from the wording of the legislation, the patented invention must be locally manufactured to some extent: see P. Khastgir & R. Dev, "Local working requirements and enforceability of patents: an Indian perspective of challenges and opportunities surrounding a granted patent" (August 2011) *Asia Pacific Regional Forum News* 23 at 26.

²¹ C.M. Correa, "The Trips Agreement and Developing Countries" in: P.F.J. Macrory *et al.*, eds., *The World Trade Organization: Legal, Economic and Political Analysis*, vol. 1 (New York, Springer, 2005) at 1092.

²² See F.K. Beier, "Does Compulsory Use of Patents Promote Technology Transfer to Developing Countries?" (1986) 8:12 *European Intellectual Property Review* 363 at 363. See also A. Ahmed Yusuf, "Transfer of Technology" in: M. Bedjaoui, ed, *International Law: Achievements and Prospects*, Part I (Paris: UNESCO, 1991) at 697-703.

²³ N.P. De Carvalho, *supra*, note 7 at 283.

²⁴ See A.A. D'Amato & D.E. Long, *International Intellectual Property Law* (London & Boston: Kluwer Law International, 1997) at 249. These authors write that national working requirements are a "type of protectionist provision" motivated by economic calculations.

brief review of the Ginarte-Park Index, generally²⁵ indicates weaker IPRs in CATEGORY 1 countries and stronger IPRs in CATEGORY 2 countries.²⁶

The patent laws that explicitly allow importation to satisfy working requirements, but that impose certain economic conditions in this regard, are included in CATEGORY 2. For example in Canada, India, Kenya, Malaysia, South Africa and Thailand importation can satisfy working requirements where demand is met on reasonable terms;²⁷ and, in Brazil,²⁸ importation can satisfy working requirements where there is a lack of economic feasibility for the local manufacture of the patented invention. In other words, some national patent laws explicitly factor in economies of scale in the assessment of whether or not to enforce working requirements.

A. Ambiguities in the Relevant Provisions

Commentators generally disagree on the relationship between Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement: on the one hand, the Paris Convention, seen as providing countries with the right to require local production, is lauded by DCs seeking to enhance industrial development.²⁹ On the other hand, the TRIPS Agreement, with

²⁵ Exceptions in CATEGORY 1: although Argentina's legislated working requirements do not implicitly or explicitly provide that importation can satisfy these requirements, Argentina is indexed by W.G. Park as having strong IPRs. Exceptions in CATEGORY 2: the legislated working requirements of Thailand, Zambia and Zimbabwe implicitly provide that importation may satisfy these requirements, yet these countries are indexed by W.G. Park as having relatively weak IPRs. It should be noted that although Zambia and Zimbabwe use identical language in their patent laws, the strength of their patent laws appears to be very different.

²⁶ Discrepancies between our categories and the assessments made by W.G. Park may be explained by the fact that the legislation-based approach adopted by W.G. Park may overestimate the strength of patent laws, as it does not consider their actual enforcement. For indices that factor in enforcement of IPRs, see B.S. Javorcik, "The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies" (2004) 48 *European Economic Review* 39 and W. Lesser, "The Effects of Intellectual Property Rights on Foreign Direct Investment and Imports into Developing Countries in the Post TRIPS Era" (2002) 5 *IP Strategy Today* 1.

²⁷ It is important to bear in mind that high prices can be charged for imported and locally produced products alike. According to N.P. De Carvalho, *supra*, note 7 at 292, locally manufactured products have been subject to price controls in patent-granting countries with local working requirements.

²⁸ As opposed to Argentina.

²⁹ See, for example, M. Halewood, "Regulating Patent Holders: Local Working Requirements and Compulsory Licences at International Law" (1998) 35:2 *Osgoode Hall Law Journal* 247 at 245 and P. Khastgir & R. Dev, *supra*, note 20 at 24.

its principle of non-discrimination, is seen as repudiating working requirements.³⁰ A corollary to this argument is that the law allows for working, not local working,³¹ and importation therefore satisfies this requirement. Along the same lines, it is argued that the mere failure to work a patent does not amount to an abuse: it is only an abuse if an abusive failure to work the patent amounts to an abuse³² or if the patent-granting country is undersupplied.³³

The diverging perspectives in the literature on point are partly due to the fact that relevant key terms in the Paris Convention are left to be defined by Member States. Article 5(A)(2) of the Paris Convention, which allows countries to prevent abuses resulting from the exclusive rights conferred by a patent, does not define those ‘abuses’ beyond ‘failure to work’ the patented invention, which some do not consider abusive.³⁴ Furthermore, the definition of the terms ‘failure to work’ and ‘insufficient working’ are left to be determined by individual Member States.³⁵ An early commentary on the Paris Convention, as revised at Stockholm in 1967, states that ‘working’ implies local working,³⁶ yet nothing in the language of Article 5(A)(2)

³⁰ See, for example, G. Ghidini, *Innovation, Competition and Consumer Welfare in Intellectual Property Law* (Cheltenham: Edward Elgar Publishing Limited, 2010) at 250-251 and N.P. De Carvalho, *supra*, note 7 at 285.

³¹ See, for example, B.M. Hoekman, *Trade Laws and Institutions: Good Practices and the World Trade Organization* (Washington, DC: The World Bank, 1995) at 52; N.P. De Carvalho, *supra*, note 7 at 284, 286; A. Taubman, *A Practical Guide to Working With TRIPS* (New York: Oxford University Press, 2011) at 104; and, K. Gamharter, *Access to Affordable Medicines* (Vienna: Springer-Verlag, 2004) at 27-28.

³² See N.P. De Carvalho, *supra*, note 7 at 284, where the author cites the example of a patent owner of a pharmaceutical ingredient who refuses, without reasonable grounds, to license the ingredient to a manufacturer of a life-saving pharmaceutical formulation.

³³ J. Straus, “Bargaining around the TRIPS Agreement: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions” (1998) 9 *Duke Journal of Comparative & International Law* 91; N.P. De Carvalho, *supra*, note 7 at 293.

³⁴ To illustrate, a Multinational Enterprise, undertaking FDI and complying with working requirements, may – in certain technology sectors – engage in abusive practices involving, for example, restrictive licensing conditions, technology grant-backs, tied sales, cross-licensing agreements, vertical controls preventing competition, price discrimination or predation against local firms. See K.E. Maskus, *infra.*, note 63 at 134. Moreover, a patented invention may be produced locally for export only, yet this sort of ‘enclave production’ is not always captured by the terms of the patent laws that ‘comply’ with the Paris Convention.

³⁵ M. Pflüger, “Article 5 Paris Convention” in: T. Cottier & P. Véron, eds., *Concise International and European IP Law: TRIPS, Paris Convention, European Enforcement and Transfer of Technology* (Alphen aan den Rijn: Kluwer Law International, 2008) at 231.

³⁶ G.H.C. Bodenhausen, *Guide to the Application of the Paris Convention for the Protection of Industrial Property As Revised at Stockholm in 1967*, World Intellectual Property, 1968: “[n]ormally, working a patent will be understood to mean working it *industrially*, namely by *manufacture* of the patented

points to this conclusion. In fact, there was some disagreement in this regard during the first revisions of the Paris Convention: while the French argued that importation should be grounds for invalidating a patent, the Belgians took the view that working requirements could be satisfied by the working of a patented invention within the Paris Union.³⁷

The ambiguities in the Paris Convention are not the only reason for diverging perspectives in the literature. The consequences for lack or insufficiency of local working, which were included in the Anell and Brussels Drafts to the TRIPS Agreement, were excluded from the final TRIPS Agreement. The Anell Draft precluded the grant of a compulsory license where the right holder could justify lack or insufficiency of local working by legal, technical or commercial reasons. The grant of a compulsory license would only have been possible in order to supply the local market.³⁸ Likewise, the Brussels Draft would have prohibited the granting of compulsory licenses where importation was adequate to supply the local market and where the right holder had a legal, technical or economic justification for non-use of the patented invention.³⁹ Neither provision of the Anell or Brussels Drafts was ultimately included in the final TRIPS Agreement; thus, WTO Members generally disagree on the issue of working requirements with some even favouring their prohibition.⁴⁰

B. Legal Interpretation of the Relevant Provisions

It is not only unclear whether Article 27.1 of the TRIPS Agreement was intended to prohibit working requirements and supersede Article 5(A)(2) of the Paris Convention, but there is also a dearth of WTO guidance as to how to reconcile these provisions.⁴¹ It is useful, therefore, to look to the principles of treaty interpretation of the Vienna Convention, which applies with

product, or *industrial application* of a patented process. Thus, importation of the patented article, or of the article manufactured by a patented process, will not normally be regarded as working the patent.” Note that Bodenhausen was the informal reporter to the 1967 Stockholm conference.

³⁷ A. Stack, *International Patent Law: Cooperation, Harmonization and an Institutional Analysis of WIPO and the WTO* (Cheltenham: Edward Elgar Publishing Limited, 2011) at 71.

³⁸ Section 5A.3.5 of the Anell Draft, cited in United Nations Conference on Trade and Development & International Centre for Trade and Sustainable Development, *Resource Book on TRIPS and Development* (Cambridge: Cambridge University Press, 2005) at 464.

³⁹ United Nations Conference on Trade and Development & International Centre for Trade and Sustainable Development, *supra*, note 38 at 467, citing clause (n) of the Brussels Draft.

⁴⁰ See C.M. Correa, *Trade Related Aspects of Intellectual Property Rights* (Oxford: OUP, 2007) at 275.

⁴¹ Recall that the United States withdrew its complaint to the WTO against Brazil regarding Brazil’s local working requirements. Note that the observed lack of guidance is specifically with respect to the WTO: in *Commission v. Italy*, C-235/89, the European Court of Justice held that the working requirements of a Member State of the European Union are satisfied by the importation of products manufactured in another Member State of the European Union.

respect to the TRIPS Agreement in disputes before the WTO.⁴² If we follow the general rule of treaty interpretation at Article 31 of the Vienna Convention, then Article 27.1 of the TRIPS Agreement must be interpreted “in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”⁴³

The natural starting point for interpretation under Article 31 of the Vienna Convention is the ordinary meaning given to the terms of the treaty. Then, the context, the object and purpose, any authentic means of interpretation, and any relevant rules of international law follow on an equal level.⁴⁴ If we look to Article 27.1 of the TRIPS Agreement, the ordinary meaning is clear. This is not so, however, for relevant terms of Article 5(A)(2) of the Paris Convention, such as ‘abuses’ and ‘failure to work’. On the other hand, the context, object and purpose of the latter provision are clear: the provision was meant to give States the ability to use compulsory licensing in order to remedy abuses, such as non-working, inadequate supply of local demand, and exorbitant pricing. It was also meant to foster technology transfer.⁴⁵

The context, object and purpose of the TRIPS Agreement, as set out at its preamble and Article 7, also include technology transfer,⁴⁶ and has been argued that this is undermined where working requirements of Article 5(A)(2) of the Paris Convention can be completely

⁴² See Report of the WTO Appellate Body, AB-1997-5, India – Patent Protection for Pharmaceutical and Agricultural Chemical Products WT/DS50/AB/R (19 December 1997).

⁴³ Article 31 of the Vienna Convention reads as follows: “General rule of interpretation. 1. A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. 2. The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes: (a) any agreement relating to the treaty which was made between all the parties in connection with the conclusion of the treaty; (b) any instrument which was made by one or more parties in connection with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty. 3. There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties. 4. A special meaning shall be given to a term if it is established that the parties so intended.”

⁴⁴ See WT/DS152/R, Report of the Panel, *United States – Sections 301-310 of the Trade Act of 1974* (22 December 1999), para. 7.22. See also D. Shanker, “The Vienna Convention on the Law of Treaties, the Dispute Settlement System of the WTO and the Doha Declaration on the TRIPS Agreement” (2002) 36 *Journal of World Trade* 721 at 726.

⁴⁵ See E. Lunge, *supra*, note 3 at 2-5.

⁴⁶ Article 7 TRIPS of the Agreement: “[t]he protection and enforcement of intellectual property rights 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.”

satisfied by the importation of the finished commodity patented invention.⁴⁷ In our view, however, this argument is flawed for three reasons. Firstly, it assumes that technology is only transferred through Foreign Direct Investment (FDI) and that little or no technology is transferred through trade or licensing. Secondly, it disregards imitation and reverse engineering, non-market channels of technology transfer that are not undermined where working requirements are fully satisfied by the importation of finished commodity patented inventions.⁴⁸ Thirdly, it fails to consider the latter part of Article 7 of the TRIPS Agreement, which conditions the transfer and dissemination of technology on social and economic welfare.

With respect to our first and second objections, one need only consider the example of patent disclosure requirements, which provide a significant source of technical information and promote non-market based technology transfer through imitation and reverse engineering.⁴⁹ In addition, a brief review of empirical economic studies suggests that arm's length technology transfer through licensing and trade, may depend on non-market channels of technology transfer, such as imitation.

In her study of 96 countries, including developed countries DCs and and LDCs, Smith found that strengthened patent protection increased the flow of United States exports to countries with strong imitative abilities, but decreased exports to those with weak imitative abilities.⁵⁰ Likewise, in Co's study on United States royalties and license fees from 1989-2002, strong patent protection, as measured by the Ginarte-Park Index,⁵¹ was found to positively influence licensing activities where local imitative abilities were strong, whereas strong patent protection was found to negatively influence licensing activities where local imitative abilities

⁴⁷ See, for example, M. Halewood, *supra* note 29 at 247-250. The author argues that historically, under the Paris Convention, patented inventions could be imported as long as quantities did not threaten the effective local working of the patent.

⁴⁸ K.E. Maskus, "Encouraging International Technology Transfer", Issue Paper No. 7, UNCTAD-ICTSD Project on IPRs and Sustainable Development, May 2004, at 2 and 30.

⁴⁹ See the survey by E. Mansfield, "How Rapidly Does New Industrial Technology Leak Out?" (1985) 34:2 *The Journal of Industrial Economics* 217.

⁵⁰ P.J. Smith, "Are Weak Patent Rights a barrier to US exports? (1999) 48:1 *Journal of International Economics* 151.

⁵¹ The Ginarte-Park index was elaborated in J.C. Ginarte & W.G. Park, "Determinants of patent rights: A cross-national study" (1997) 26 *Research Policy* 283. It was updated in W.G. Park, "International Patent Protection: 1960-2005" 37:4 (2008) *Research Policy* 761 and constitutes the most widely used legislation-based IPR index. According to K.E. Maskus, *Intellectual Property Rights in the Global Economy* (Washington, DC: Institute for International Economics, 2000) at 181-182, the impact of working requirements on patent value can be estimated econometrically because these requirements are identified in the Ginarte-Park Index.

were weak.⁵² Based on these studies, it is possible to conclude that technology transfer within the meaning of Article 7 of the TRIPS Agreement may be achieved through non-market channels even where patented inventions are imported as finished commodities.

With respect to our second objection, it is important to recall that good faith, which is at the centre of the General Rule of Article 31 of the Vienna Convention, presumes that treaty terms are intended to *mean something rather than nothing*.⁵³ Thus, a good faith interpretation of the economic language of Article 7 of the TRIPS Agreement must take heed of the welfare effects of technology transfer. Moreover, a good faith interpretation of Article 27.1 of the TRIPS Agreement, which is more relevant for our purposes, implies that the working requirements of the Paris Convention may be satisfied by importation. The terms of Article 27.1 of the TRIPS Agreement, which preclude WTO Members from discriminating among patented inventions on the basis of whether they are imported or locally produced, would otherwise be *meaningless* and would lead to a result that is manifestly absurd and paradoxical.

Where the meaning of a treaty provision resulting from the application of Article 31 of the Vienna Convention leads to an unreasonable result, recourse may be had to the preparatory work of the treaty pursuant to Article 32 of the Vienna Convention.⁵⁴ Looking first to the revisions of the Paris Convention,⁵⁵ it is clear that importation and the possibility of legislating local working requirements were never mutually exclusive.⁵⁶ According to Edith Tilton

⁵² C.Y. Co, “US Exports of Knowledge-intensive Services and Importing-country Characteristics” (2007) 15:5 *Review of International Economics* 890.

⁵³ M.E. Villiger, *Commentary on the 1969 Vienna Convention on the Law of Treaties* (Boston: Martinus Nijhoff, 2009) at 425-426, citing the Minority Opinion in the *Iran-US Claims Arbitration* (1981), ILR 62 (1982) 603, F.G. Jacobs, “Varieties of Approach to Treaty Interpretation: With Special Reference to the Draft Convention on the Law of Treaties Before the Vienna Diplomatic Conference” (1969) 18:2 *International Comparative Law Quarterly* 318 at 333. See also WT/DS176/AB/R, Appellate Body Report, *United States – Section 211 Omnibus Appropriations Act of 1998 AB-2001-7*, 2 Jan. 2002, para. 338-339: “[o]ne of the corollaries of the ‘general rule of interpretation’ in the *Vienna Convention* is that interpretation must give meaning and effect to all the terms of a treaty. An interpreter is not free to adopt a reading that would result in reducing whole clauses or paragraphs of a treaty to redundancy or inutility.” See also WT/DS11/AB/R, Appellate Body Report, *Japan – Taxes on Alcohol Beverages* at 11.

⁵⁴ Article 32 of the Vienna Convention: “[s]upplementary means of interpretation. Recourse may be had to supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion, in order to confirm the meaning resulting from the application of article 31, or to determine the meaning when the interpretation according to article 31: (a) leaves the meaning ambiguous or obscure; or (b) leads to a result which is manifestly absurd or unreasonable.”

⁵⁵ S.P. Ladas, *Patents, Trademarks, and Related Rights: National and International Protection* (Cambridge: Harvard University Press, 1975) at 526-531.

⁵⁶ Article 5(1) of the 1883 text stated that importation would not entail forfeiture and Article 5(2) imposed an obligation on the patentee to exploit his patent in accordance with the laws of the patent granting country.

Penrose, patented inventions could be imported in limited quantities so long as this did not threaten the effective local working of the patent:

[t]here are two possibilities: one that the patentee introduces articles and manufactures abroad in such small quantities that it does not interfere with serious exploitation of the invention in the country where the patent was taken out. The other that the importation takes place on a large scale and consequently there is no working, or at any rate only a mock working. In the latter case, forfeiture for failure to work can be enforced and that will be sufficient to protect the national industry.⁵⁷

We support this view to the extent that it suggests that importing patented inventions and requiring local working are complementary. However, in our view, the incorporation of the Paris Convention by the TRIPS Agreement creates a third possibility: complementarity of importation and working requirements with social and economic welfare, within the meaning of Article 7 of the TRIPS Agreement, factored in to determine the quantities manufactured locally and abroad.

Moving on to the preparatory work of the TRIPS Agreement, it is clear from the Anell and Brussels Drafts that the evaluation of economic factors is involved in the assessment of whether or not to grant a compulsory license. Both drafts place importance on the supply of the patented invention to the local market and the commercial / economic reasons that might justify a lack or insufficiency of local working. Thus, interpreting Article 27.1 of the TRIPS Agreement – according to Article 32 of the Vienna Convention – theoretically allows economic evidence to inform the debate on working requirements.

Since working requirements are meant to benefit the public rather than the patentee, and the public benefit from such requirements is not measured solely in terms of domestic manufacture,⁵⁸ it should theoretically factor-in the supply of the patented invention to the domestic population,⁵⁹ as well as any economic reasons for which local working might not be beneficial to the local population. If we consider these factors, it should be possible to import patented inventions on a large scale such that there is no ‘local’ working *per se*, yet the technology transfer and dissemination requirements of Article 7 of the TRIPS Agreement are still met.

C. Conclusion

An analysis of Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement in light of the Vienna Convention, lends support to the consideration of economic factors in reconciling these provisions. Some national patent laws are indeed drafted so as to reflect the micro- and macro-economic-based considerations for principles of international

⁵⁷ E.T. Penrose, *The Economics of the International Patent System* (Baltimore: Johns Hopkins Press, 1951) at 76.

⁵⁸ A. Taubman, *supra*, note 31 at 104.

⁵⁹ K. Gamharter, *supra*, note 31 at 28.

division of labour in research, development and production.⁶⁰ Moreover, in light of the relationship between patent law and trade law, as well as the fact that manufacturing processes are increasingly international, there is support, particularly in the economic literature, for the view that importation should be able to fully satisfy working requirements.⁶¹ In the second part of this paper, we discuss the question of economic factors to consider in assessing how much importation is acceptable under the Paris Convention, and when it is appropriate and beneficial to require local working.

II. Economic Impact of Working Requirements

Most empirical economic studies suggest that strengthened IPRs positively influence market-based technology transfer through trade, licensing and/ or FDI.⁶² Contrary to the traditional view that trade falls as FDI rises, trade and FDI are complementary: FDI in local production requires further investment, for marketing purposes, in finance and distribution, which are strongly complementary with merchandise trade flows within Multinational Enterprises (MNEs).⁶³ As opposed to trade, however, FDI by MNEs, through the acquisition/ establishment of subsidiaries, is inherently linked to local production and has significant spillover effects in terms of employment creation and industrial and technological capacity building.⁶⁴ It clearly constitutes the most interesting market-based channel of technology transfer for study in the context of working requirements.

⁶⁰ As F.K. Beier, *supra*, note 22 aptly remarks, “[i]n most cases it is only possible and practical, for micro-economic as well as macro-economic reasons, to produce the patented products in a sufficiently large quantity in a few countries for a larger, generally regional marketing area. It necessarily follows that the different markets within this region can be supplied better and cheaper through imports than through domestic, licensed products.

⁶¹ A. Taubman, *A Practical Guide to Working With TRIPS* (New York: Oxford University Press, 2011) at 104.

⁶² Regarding trade, see C. Fink & C.A.P. Braga, “How Stronger Protection of Intellectual Property Rights Affects International Trade Flows” in: C. Fink & K.E. Maskus, eds., *Intellectual Property and Development: Lessons from Recent Economic Research* (New York: World Bank & Oxford University Press, 2005). Regarding licensing, see C.Y. Co, *supra*, note 52; R. Wakasugi, “Vertical Intra-Industry Trade and Economic Integration in East Asia” (2007) 6:1 *Asian Economic Papers* 26; and G. Yang & K.E. Maskus, “Intellectual Property Rights and Licensing: An Econometric Investigation” in: C. Fink & K.E. Maskus, eds., *Intellectual Property and Development: Lessons from Recent Economic Research* (New York: World Bank & Oxford University Press, 2005). Regarding FDI, see B.S. Javorcik, *supra*, note 26; J.Y. Lee & E. Mansfield, “Intellectual Property Protection and U.S. Foreign Direct Investment” (1996) 2 *The Review of Economics and Statistics* 181; W.G. Park & D.C. Lippoldt, *infra*, note 65; B. Seyoum, *infra*, note 65.

⁶³ K.E. Maskus, “The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment” (1998) 9 *Duke Journal of Comparative & International Law* 109 at 114.

⁶⁴ C. Macleod, *Inventing the Industrial Revolution: The English Patent System 1660-1800* (Cambridge: Cambridge University Press, 1988) at 10 and E. Penrose, *The Economics of The International Patent System* (Baltimore: Johns Hopkins Press, 1951) at 137ff.

A. Impact of Working Requirements on FDI Incentives

Since IPRs positively affect FDI inflows,⁶⁵ and compulsory licenses – used to sanction insufficient working – significantly weaken IPRs, it has been argued that patent working requirements may have adverse effects on FDI incentives.⁶⁶ MNEs engage in FDI where cost or efficiency advantages outweigh disadvantages such as distance, potential language and cultural barriers and different tax treatment.⁶⁷ The Eclectic Paradigm, otherwise known as Dunning’s ‘OLI’ framework,⁶⁸ explains the main factors determining a MNE’s decision to undertake FDI.

The ‘OLI’ framework refers to ownership, localisation, and internalisation advantages. In the context of IPRs, an ownership advantage, such as a patent, confers market power and cost efficiencies; a location advantage, such as strong IPRs in a particular country, makes production in one location more profitable than another;⁶⁹ and, an internalisation advantage makes technology transfer through a subsidiary, *i.e.* internally, more prudent than through licensing. For example, although the decision to engage in local production through FDI rather than licensing does not depend entirely on the strength of IPRs,⁷⁰ it may arise where

⁶⁵ See B. Seyoum, “The Impact of Intellectual Property Rights on Foreign Direct Investment” (1996) 31:*The Columbia Journal of World Business* 50 and W.G. Park & D.C. Lippoldt, “Technology Transfer and the Economic Implications of the Strengthening of Intellectual Property Rights in Developing Countries” (2007) *OECD Trade Policy Working Paper* 62. Contrast the situation where FDI is a licensee is unwilling to agree to royalty terms unless it knows the value of the technology being licensed. In this exceptional situation, which applies to technologies that are expensive to develop but easily copied (proprietary technologies

⁶⁶ R. Bird & D.R. Cahoy, *supra*, note 8 at 284.

⁶⁷ K.E. Maskus, *supra*, note 63 at 111 and 116.

⁶⁸ J.H. Dunning, “Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach” in: B. Ohlin *et al.*, eds., *The International Allocation of Economic Activity*. London: Macmillan, 1977.

⁶⁹ Examples include large market size, high local demand, high trade and transport costs (in other words, high tariffs in relation to fixed costs so as to favour FDI over trade), short distances from markets, abundant natural resources, modern infrastructure and low fixed costs for building, transparent government procedures, highly-skilled labour relative to wage costs, proximity to customers: see K.E. Maskus, *supra*, note 63 at 123.

⁷⁰ K.E. Maskus, *supra*, note 63 at 121.

IPRs are weak and competition is strong,⁷¹ as valuable information and know-how could otherwise be imitated in the patent-granting country.⁷²

B. Impact of Working Requirements on FDI in DCs and LDCs

From a review of FDI inflows and outflows for representative nations studied in the International Monetary Fund's Balance of Payments Statistics, Maskus notes rising FDI levels in emerging economies due to what Dunning would characterise as their 'location' advantages. By contrast, he is not alone in highlighting the limited ability of LDCs to attract investment due to their lack of 'location' advantages.⁷³ LDCs generally do not have the requisite infrastructure, workforce, supplies, organisational ability, technical know-how, or access to raw materials that would allow them to support local production of patented inventions. Working requirements and threats of compulsory licensing by LDCs would, therefore, have little impact on FDI incentives.⁷⁴

Although likely to derive little benefit from compulsory licenses and working requirements, LDCs such as Bangladesh, Mozambique, Tanzania and Zambia have enacted such requirements. In an article based on a game theory framework, Bird & Cahoy argue that since the granting of compulsory licenses might have a greater impact on Middle Developed Countries (MDCs), as measured by the United National Development Programme's Human Development Index, than on LDCs, both MDCs and LDCs might benefit from a "collective action as an equalizing mechanism". The authors suggest a coordinated mechanism, between MDCs, susceptible to FDI losses, and LDCs, immune from such losses, to impose compulsory licenses collectively through regional cooperation.⁷⁵

To support their view, Bird & Cahoy cite the very different experiences of two MDCs: Egypt and Brazil. Egypt is portrayed as susceptible to FDI losses: the Ministry of Health's decision to grant a compulsory license over Viagra led Pfizer to rethink its FDI incentives and "slam

⁷¹ D.J. Teece, "Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy" (1986) 15 *Research Policy* 285. See also K.E. Maskus, *supra*, note 63 at 120, where the author explains that this is the exceptional situation where the strength of IPRs is negatively associated with FDI flows.

⁷² See K.C. Kennedy, "A WTO Agreement on Investment: A Solution in Search of a Problem?" (2003) 24 *University of Pennsylvania Journal of International Economic Law* 77 at footnote 273.

⁷³ See also R. Bird & D.R. Cahoy, *supra*, note 8 and M. Gumbel, "Is Article 31bis Enough: The Need to Promote Economies of Scale in the International Compulsory Licensing System" (2008) 22:1 *Temple International & Comparative Law Journal* 161. Contrast E. Penrose, "International Patenting and the Less-Developed Countries"(1973) 83:331 *The Economic Journal* 768 at 785.

⁷⁴ H. Hestermeyer, *Human Rights and the WTO: The Case of Patents and Access to Medicine* (Oxford: Oxford University Press, 2007) at 242. See also K.E. Maskus, *supra*, note 63 at 121.

⁷⁵ R. Bird & D.R. Cahoy, *supra*, note 8 at 300-317.

on the brakes” on a modern production facility there.⁷⁶ By contrast, Brazil is portrayed as immune to compulsory license-related FDI losses: the United States withdrew its complaint to the WTO regarding Brazil’s local working requirements,⁷⁷ and FDI inflow to Brazil has continued despite its compulsory license legislation.⁷⁸ Bird & Cahoy suggest that MDCs, such as Brazil, share their immunity from FDI losses with countries of the same region that have similar interests but are more susceptible to FDI losses.

Bird & Cahoy demonstrate that working requirements, meant to induce local production and manufacturing, may ironically make certain countries more susceptible to FDI losses. Lybecker & Fowler’s comparative study on compulsory licensing in Canada and Thailand lends support to this argument. They cite the example, in the pharmaceutical sector, of common (or global) diseases and neglected diseases (endemic to developing regions). With respect to the former, they argue that the issuance of a compulsory license in DCs or LDCs is unlikely to have a major impact on investment, yet with respect to treatments for neglected diseases, a compulsory license could drive pharmaceuticals to reduce investment, if any.⁷⁹

C. Conclusion

As DCs and LDCs begin to adopt the increased international minimum standards imposed by the TRIPS Agreement, solutions proposed on the issue of working requirements should ensure that DCs and LDCs still have some policy room to tailor IPR systems to their development needs. A model of regional collective action may be a solution to empower LDCs to use

⁷⁶ R. Bird & D.R. Cahoy, *supra*, note 8 at 306, citing R.A. Castellano, (2006) 46:2 “Patent Law for New Medical Uses of Known Compounds and Pfizer’s Viagra Patent” *Idea Concord* 283 at 289.

⁷⁷ See B.J. Condon & T. Sinha, *supra*, note 15 at 40. Note that Brazil has what Dunning would consider a ‘location’ advantage in this case: a large market and high local demand with 52% of all reported HIV/AIDS cases in Latin America and the Caribbean being in Brazil: see M. Gumbel, *supra*, note 73 at 174. According to N.P. De Carvalho, *supra*, note 7 at 292, Article 68 of the Brazilian law was seen as similar to Sections 204 and 209 of the US Patents Act. Thus, a ruling against Brazil in this dispute would have led to a ruling against the United States in a dispute that arose subsequently: see United States - *US Patents Code* - Request for Consultations by the United States, WT/DS224/1 (7 February 2001).

⁷⁸ See R. Bird & D.R. Cahoy, *supra*, note 8 at 316, citing H.R. Mayer, United States Court of Appeals for the Federal Circuit 20th Anniversary Judicial Conference: A Salute to the Federal Court” 217 F.R.D. 548 (2002) at 668 and P. Valach, Jr., who attributes Brazil’s resistance to a ‘three-pronged’ protection of its compulsory license legislation, with local production of those HIV drugs that pre-date patent protection, deal negotiations with patent-holders to lower the prices for Brazilian citizens and threats to use a compulsory license as a last resort. See “TRIPS: Protecting the Rights of Patent Holders and Addressing Public Health Issues in Developing Countries” (2005) 4 *Chicago-Kent Journal of Intellectual Property* 156 at 175. See also W.G. Park & D.C. Lippoldt, *supra*, note 65 at 27, where the authors remark that Brazil is host to a number of global automobile manufacturers and stands to be the fifth largest automobile producer in the world.

⁷⁹ K. Lybecker & E. Fowler, “Compulsory Licensing in Canada and Thailand: Comparing Regimes to Ensure Legitimate Use of the WTO Rules” (Summer 2009) *Journal of Law, Medicine and Ethics* 222 at 235.

working requirements and leverage their immunity to FDI losses in order to collaborate and benefit from the ‘location’ advantages of their DC neighbours, who are more susceptible to these losses. At the same time, it may not be worth imposing a compulsory license for certain technologies which are imported more efficiently and economically through trade.

III. Working Requirements & Different Technologies

IPRs play an important role in decisions as to whether to engage in technology transfer through trade, licensing or FDI. Maskus argues that the importance of IPRs varies by industry and market structure.⁸⁰ With respect to trade, Maskus & Penubarti,⁸¹ as well as Park & Lippoldt⁸² have found that patent strength positively and significantly affects trade and that impact varies according to sectors. With respect to licensing, Arora *et al.* have found that markets for patent licensing are more likely to develop in some industries rather than others.⁸³ With respect to FDI, Maskus & Penubarti have noted that trade reductions through the exercise of market power are more prominent in patent-sensitive sectors and remark that FDI may be more prevalent in these sectors.⁸⁴ Likewise, Javorcik has found that weak protection of IPRs impacts the composition of FDI inflows, deterring investment in IPR-sensitive-sectors and encouraging distribution rather than local production.⁸⁵

A. Working Requirements & Patent-sensitive Technologies

According to Maskus & Penubarti, patent-sensitive sectors include petroleum and coal products, food products, professional goods, metal products, electrical machinery, plastic products, other chemical products, pharmaceuticals, machinery, and industrial chemicals. The same authors categorise the following as least patent-sensitive sectors: leather products, wearing apparel, footwear, rubber products, printing and publishing, transport equipment, nonferrous metals, beverages, and iron and steel.⁸⁶ If, as Carvalho writes, working requirements are targeted at technologies of the steel, chemical and energy industries where

⁸⁰ K.E. Maskus, *supra*, note 63 at 111.

⁸¹ K.E. Maskus & M. Penubarti, “Patents and International Trade: An Empirical Study” in: K.E. Maskus *et al.*, eds., *Quiet Pioneering: Robert M. Stern and His International Economic Legacy* (Ann Arbor: University of Michigan Press, 1997) at 110.

⁸² W.G. Park & D.C. Lippoldt, *supra*, note 65.

⁸³ A. Arora *et al.*, “Markets for Technology: The Economics of Innovation and Corporate Strategy” (2001) 13:3 *Industrial and Corporate Change* 451.

⁸⁴ K.E. Maskus & M. Penubarti, *supra*, note 81 at 109.

⁸⁵ B.S. Javorcik, *supra*, note 26 at 40.

⁸⁶ K.E. Maskus & M. Penubarti, *supra*, note 81 at 109.

fixed costs and first-copy costs are high,⁸⁷ then – given their effect on IPR protection – such requirements targeted at technologies in the steel and energy industries may not have as much impact on FDI as when they are targeted at the chemical industry. This is significant, as according to a study by Park & Lippoldt, patent strength is positively associated with United States FDI expansion in the chemical industry⁸⁸ and according to a study by Maskus on sectoral characteristics of FDI, the industrial chemical industry almost tops the list of sectors in which FDI is most prevalent.⁸⁹

B. Working Requirements & Pharmaceutical Technologies

With respect to pharmaceuticals, although these are considered patent-sensitive technologies, Carvalho argues that demand for these technologies is generally met through importation.⁹⁰ While there is a mechanism in place that allows DCs in a health crisis to request the issuance of a compulsory license for the import of a needed drug,⁹¹ it is still unclear whether this mechanism is sufficient for DCs and LDCs that rely solely on imported pharmaceuticals. As such, the question of local manufacturing arises. Abbott argues that the importance of reconciling Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement becomes clear in the context of a pandemic, as foreign suppliers of pharmaceuticals might otherwise be tempted to divert patented products to their own markets.⁹²

In our view, if the importing country does not have the infrastructure required to manufacture the pharmaceutical technology locally, then enforcement of working requirements may be futile without some form of regional collective action with another country that has these ‘location’ advantages.⁹³ Even if the requisite infrastructure exists in a country, it is unlikely to

⁸⁷ P.A. David, “*Koyaanisqatsi in cyberspace: The economics of an “out-of-balance” regime of private property rights in data and information*” in: K.E. Maskus & J.E. Reichman, eds., *International Public Goods and Transfer of Technology: Under a Globalized Intellectual Property Regime* (Cambridge & New York, Cambridge University Press, 2005) at 118. See also C.T. Bouchard & J.V. Koch, *America for Sale: How the Foreign Pack Circled and Devoured Esmark* (Santa Barbara: Greenwood Publishing, 2009) at 179, where the authors point out that it is cost efficient for firms in high fixed cost industries to rapidly become large in size, as greater production is tied to a lower average unit production cost and a greater competitive advantage over firms that produce less.

⁸⁸ W.G. Park & D.C. Lippoldt, *supra*, note 65 at 23.

⁸⁹ K.E. Maskus & M. Penubarti, *supra*, note 81 at 115.

⁹⁰ N.P. De Carvalho, *supra*, note 7 at 292.

⁹¹ See Article 31*bis* of the TRIPS Agreement.

⁹² F.M. Abbott, “WTO Dispute Settlement Practice Relating to the Agreement of Trade-Related Intellectual Property Rights” in: Ortino, F. & Petersmann, E.-U., eds., *The WTO Dispute Settlement System, 1995-2003* (The Hague: Kluwer Law International, 2004).

⁹³ As stated by the World Bank, “pharmaceutical manufacturing should only be encouraged in countries that have an effective control agency to enforce GMP [Good Manufacturing Practice]”. See A. Seiter,

include “the most technical and value-adding” stage of pharmaceutical manufacturing, *i.e.* chemical synthesis.⁹⁴ If local manufacturing in the country is limited to formulation and packaging, it will be important for the country to consider that compulsory licensing is generally not effective in forcing technology transfer of know-how.⁹⁵ It will also be important to consider the costs and benefits of enforcing a working requirement in light of studies by Bird & Cahoy and Lybecker & Fowler regarding the potentially adverse effects on FDI.

C. Conclusion

FDI incentives differ from one country⁹⁶ to another due to what economists characterise as ‘location’ advantages. The discussion in this part of our paper builds on the second part, which focused on the incentives of MNEs to transfer technology to DCs and LDCs through FDI. It explores the impact of working requirements on trade and FDI in different sectors of technology in an attempt to assess where working requirements may ironically constitute disincentives to FDI and where they may truly be in the interests of the local community that they are meant to supply / serve.

Using the rubric/ checklist below, DCs and LDCs should be able to weigh the costs and benefits of imposing a working requirement on a particular patented technology. Based on the number of negative responses to the questions in the checklist, a country should be able to predict that FDI losses are likely if a working requirement is enforced. Then, if local demand for the patented invention is being met through trade, it can be presumed that this is the most efficient and economic channel of technology transfer for that particular patented invention.

“Pharmaceuticals: Local Manufacturing” The World Bank HNP Brief #3 at 2 [online], <http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1109774792596/HNPBrief_3.pdf> (2.06.2012).

⁹⁴ Local manufacturing of pharmaceuticals in developing countries besides India, China and other MDCs, usually does not include chemical synthesis: see A. Seiter, *supra*, note 93 at 1-2, where the author also lists subsidiaries of MNEs manufacturing products for local and regional markets, generic manufacturers operating globally, generic companies with predominantly national operations, small-scale local manufacturers and companies that cut across these categories. See also K.E. Maskus, *supra*, note 63 at 115, where the author finds that pharmaceutical firms have a significant number of foreign affiliates producing under license.

⁹⁵ K.E. Maskus, “Differentiated Intellectual Property Regimes for Environmental and Climate Technologies” (2010) *OECD Environment Working Papers*, No. 17, OECD Publishing at 8. See also F.K. Beier, *supra*, note 22 at 365. Contrast P. Khastgir & R. Dev, *supra*, note 20 at 28, where the authors remark that with respect to India, “various provisions in the Patents Act for the working of a patent in India such as compulsory licence provisions [...] are likely to create an atmosphere of conciliation, compromise and co-working rather than confrontation.” Recall, however, that India is a MDC and local manufacturing of pharmaceuticals in India includes chemical synthesis.

⁹⁶ R. Bird & D.R. Cahoy, *supra*, note 8 at 286.

LOCATION ADVANTAGES	PATENT-SENSITIVE TECHNOLOGIES	PHARMACEUTICAL TECHNOLOGIES
Large market size		
High local demand,		
High trade and transport costs		
Short distances from markets		
Abundant natural resources		
Low fixed costs for building		
Transparent government procedures		
Highly-skilled labour force		
Low wages		
Proximity to customers		
Modern infrastructure		
Strong competition		
Infrastructure for chemical synthesis		
Effective control agency to enforce GMP		
Compulsory license through Article 31 <i>bis</i> unlikely		
Weak IPRs		

The rubric above is likely to lead to a discussion regarding Article 27.1 of the TRIPS Agreement, particularly with respect to “discrimination as to [...] fields of technology”. Although patent laws cannot discriminate in their treatment of different fields of technology, and patents over inventions in certain fields of technology must not be subject to more stringent conditions than patents over inventions in other fields of technology, the WTO dispute settlement panel has clarified, in the *EC-Canada* case,⁹⁷ that the conduct prohibited by Article 27.1 is ‘discrimination’, which is not the same as ‘differentiation’.⁹⁸ As Burk & Lemley argue, neither the United States nor the European Union have faithfully followed the

⁹⁷ *Canada – Patent Protection of Pharmaceutical Products*, WT/DS114/R (17 March 2000).

⁹⁸ W. Zu Waldeck und Pymont, “Special Legislation for Genetic Inventions – A Violation of Article 27(1) TRIPS?” in: Adelman, M.J. *et al.*, eds, *Patents and Technological Progress in a Globalized World: Liber Amicorum Joseph Straus* (Munich: Springer, 2009) at 299ff. According to F.M. Abbott, *supra*, note 92 at 441: “[u]nder the jurisprudence of the *Canada Generic Pharmaceuticals* case, this leaves room for local working requirements adopted for *bona fide* (i.e., non-discriminatory) purposes. Note that N.P. De Carvalho, *supra*, note 7 disagrees with this view: “[a]ctually the Panel [in the *Canada Generic Pharmaceuticals* case] did not say this. The Panel went only as far as accepting differentiated treatment for *bona fide* purposes that is not explicitly prohibited by Article 27.” For a summary of the *Canada Generic Pharmaceuticals* case, see F.M. Abbott, “Intellectual property rights in World Trade” in: Gunzman, A.T. & Sykes, A.O., eds., *Research Handbook in International Economic Law* (Cheltenham: Edward Elgar Publishing Limited, 2007) at 475.

TRIPS treaty mandate in this regard,⁹⁹ as American jurisprudence and European law contain different rules for different technologies. In our view, the rubric above is fully compatible with the TRIPS Agreement and merely invites countries to differentiate between technologies – something that is regularly done at the legislative and enforcement levels in various jurisdictions.¹⁰⁰

IV. Conclusions and Recommendations: A Possible Way Forward

In a study of working requirements, one must not lose sight of the fact that compulsory licenses are said to address effects of ‘property holdups’.¹⁰¹ In the first part of this paper, we attempted to demonstrate that property is not ‘held up’ where working requirements are met by importation; in the second part, we demonstrated that importation may be necessary, particularly where working requirements provide disincentives to FDI, the channel of technology transfer that is inherently linked to local production; in the third part, we explored the impact of working requirements on different technologies and elaborated a rubric/checklist for countries to assess whether enforcement of a working requirement is beneficial or costly to their local communities.

In this final part of our paper, we come back to our initial question regarding the compatibility of Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement. We find that the working requirements of the Paris Convention can be reconciled with Article 27.1 of the TRIPS Agreement to the extent that importation is allowed to meet these requirements, either fully or partially. Since the model proposed by Bird & Cahoy provides a useful solution to avoid dividing at the borders,¹⁰² and allows DCs and LDCs of the same region to collectively call for local working where this is economically feasible and mutually beneficial, we recommend the enactment of working requirements, particularly for those presenting ‘immunity’ to FDI losses, and the clarification of scope for those without such ‘immunity’.

As illustrated in the Annex to this paper, working requirements need not explicitly include importation as a means of meeting local demand for patented inventions. There are countries, such as Argentina and Egypt, with working requirements listed in CATEGORY 1 that are

⁹⁹ D.L. Burk & M.A. Lemley, “Tailoring Patents to Different Industries” in E. Arezzo & G. Ghidini, *Biotechnology and Software Patent Law: A Comparative Review of New Developments* (Cheltenham: Edward Elgar Publishing, Limited, 2011) at 35, citing D.L. Burk & M.A. Lemley, *Is Patent Law Technology-Specific?* (2002) 17 *Berkeley Technology Law Journal* 1155 at 1183-1185 and E.J. Basinski, “The European Union’s Proposed Directive on Computer-Implemented Inventions: What Price ‘Interoperability’?” (2003) 3 *World e-Commerce & IP Report*.

¹⁰⁰ M.D. Janis, “Equilibrium in a Technology-Specific Patent System” (2004) 54 *Case Western Reserve Law Review* 743, who writes that “patent law rules are (to some extent) and should be (to a greater extent) tailored to specific technologies.”

¹⁰¹ R. Bird & D.R. Cahoy, *supra*, note 8 at 290.

¹⁰² See A. Stack, *supra*, note 37 at 70, who writes that dividing at that borders is ‘welfare reducing’.

regarded as fully TRIPS compliant¹⁰³ even though their working requirements make no mention of importation.¹⁰⁴ Likewise, there are countries listed in CATEGORY 2, such as Ghana and Kenya, which are not regarded as fully TRIPS compliant,¹⁰⁵ yet their legislation explicitly allows for importation to satisfy working requirements.¹⁰⁶ In other words, the ability to fulfil working requirements through importation need not be explicit in order for legislation to be TRIPS compliant. Yet if working requirements have a signalling effect,¹⁰⁷ then perhaps explicit language regarding importation is necessary for certain countries in order to increase FDI incentives, or at least reduce the likelihood of FDI losses.

In order to limit the potential for FDI losses and to equalise the bargaining power between DCs and LDCs on the one hand, and patentees on the other, we propose an international system of graduated compensation for compulsory licensing modelled on the Swiss system.¹⁰⁸ Since the impact of working requirements differs from one country to another and from one sector of technology to another, equitable compensation to the patentee should be defined on a case-by-case basis, taking into account the value of the license, as well as the level of development of the 'importing' country.¹⁰⁹ Although DCs and LDCs have significant changes to make to their domestic legislation in order to be TRIPS compliant by 2016, we recommend

¹⁰³ See I.M. Hamdan-Livramento, *Examining How TRIPS Implementation Affects Access to Foreign Technologies for Developing Countries*, Thèse No 4455, Ecole Polytechnique Fédéral de Lausanne, 2009 at 21-22, where the author graphically depicts TRIPS compliance for African countries 1994-2007, TRIPS compliance for low-income countries 1994-2007, TRIPS compliance for upper-middle income countries 1994-2007, and TRIPS compliance for countries with RTAs 1994-2007. In an index that ranges from 0 to 7 from non-compliance to full compliance, Argentina has a score of 7 and Egypt has a score of 7.

¹⁰⁴ Theoretically, countries listed in Category 1 should not be TRIPS compliant. For instance, in her index, I.M. Hamdan-Livramento gives Bangladesh a score of 2 and Nigeria has a score of 1. See *supra*, note 103 at 21-22.

¹⁰⁵ See I.M. Hamdan-Livramento, *supra*, note 103 at 21-22: Ghana has a score of 6.5 and Kenya has a score of 5.

¹⁰⁶ Theoretically, countries listed in Category 2 should be TRIPS compliant. For instance, in her index, I.M. Hamdan-Livramento gives a score of 7 to each of Brazil, Malaysia, Mexico, Morocco, South Africa, and Uruguay. See *supra*, note 103 at 21-22.

¹⁰⁷ See R. Bird & D.R. Cahoy, *supra*, note 8 at 284, where the authors write that IPRs have a signalling effect and that weaker rights signal increased government interference in strategic business decisions.

¹⁰⁸ See Article 40(e)(5) of the Swiss Loi fédérale du 25 juin 1954 sur les brevets d'invention, RO 1955 893, as amended on 1 July 2008 by RO 2008 2551; FF 2006 1 : « Le titulaire du brevet a droit à une rémunération adéquate. Celle-ci est déterminée compte tenu du cas d'espèce et de la valeur économique de la licence. Dans le cas d'une licence prévue à l'art. 40d, la rémunération est déterminée en tenant compte de la valeur économique de la licence dans le pays d'importation, du niveau de développement et de l'urgence sanitaire et humanitaire. Le Conseil fédéral précise le mode de calcul. ».

¹⁰⁹ T. Cottier, *supra*, note 13 at 818.

that Members enter into additional commitments regarding graduated compensation for compulsory licensing.¹¹⁰

To date, attempts to reconcile Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement have resulted in various proposals, for instance to eliminate references to ‘importation’ and ‘local production’ in Article 27 § 1 of the TRIPS Agreement,¹¹¹ or to strengthen compulsory working provisions in national patent laws.¹¹² Indeed, over the past twenty years, a number of countries, including Canada, China, India, Mexico, New Zealand and Thailand have changed their domestic patent legislation in favour of foreign patentees by either tempering/repealing working requirements, or by restricting their use of compulsory licences.¹¹³ Rather than analysing textual reforms or attempting to clarify the meaning of Article 5(A)(2) of the Paris Convention and Article 27.1 of the TRIPS Agreement, we have attempted, in this paper, to strike an ‘intelligent’¹¹⁴ balance between the interests of patentees and the community.

¹¹⁰ T. Cottier, *supra*, note 13 at 819.

¹¹¹ A. Kur & M. Levin, eds., *Intellectual Property Rights in a Fair World Trade System: Proposals for Reform of TRIPS* (Cheltenham: Edward Elgar Publishing Limited, 2011) at 584.

¹¹² F.K. Beier, *supra*, note 22 at 363. According to the author, many developing countries have adopted this solution in their patent laws and some, such as Mexico and Yugoslavia, have taken legal measures meant to restrict the use of patents as conferring import monopolies.

¹¹³ M. Halewood, *supra*, note 29 at 245, citing A. Rotstein, “Intellectual Property and the Canada-US Free Trade Agreement: The Case of Pharmaceuticals” in: K. Nair & A. Kumar, eds., *Intellectual Property Rights* (New Delhi: Allied Publishers, 1994) at 221; D. Hill & J. Evans, “Chinese Patent Law: Recent Changes Align China More Closely with Modern International Practice” (1994) 27 *George Washington Journal of International Law & Economics* 359; B.K. Keayla, “Product Protection and the Pharmaceutical Industry” in: K. Nair & A. Kumar, eds., *Intellectual Property Rights* (New Delhi: Allied Publishers, 1994) at 151; R. Baca, “Compulsory Licensing in the 1990s: The Aftermath of NAFTA and the 1991 Industrial Property Law” (1995) 28 *Vanderbilt Journal of Transnational Law* 33; J. Wechkin, “Drug Price Regulation and Compulsory Licensing for Pharmaceutical Patents: The New Zealand Connection” (1995) 5 *Pacific Rim Law & Policy Journal* 237; H. Kwon, “Patent Protection and Technology Transfer in the Developing World: The Thailand Experience” (1995) 28 *George Washington Journal of International Law & Economics* 567. See also C. O’Neal Taylor, “The Limits of Economic Power: Section 301 and the World Trade Organization Dispute Settlement System” (1997) 30 *Vanderbilt Journal of Transnational Law* 209.

¹¹⁴ Citing E. Lunge, *supra*, note 3 at 4.

ANNEX

*Asterisks are used to indicate Least Developed Countries (LDCs)

COUNTRY	CATEGORY 1
Argentina 3.98	LEY DE PATENTES DE INVENCION Y MODELOS DE UTILIDAD (Ley 24.481 modificada por la Ley 24.572 T.O. 1996 - B.O. 22/3/96-) Modificada por la Ley 25.859 Art. 43: “Transcurridos TRES (3) años desde la concesión de la patente, o CUATRO (4) desde la presentación de la solicitud, si la invención no ha sido explotada, salvo fuerza mayor o no se hayan realizado preparativos efectivos y serios para explotar la invención objeto de la patente o cuando la explotación de ésta haya sido interrumpida durante más de UN (1) año, cualquier persona podrá solicitar autorización para usar la invención sin autorización de su titular. Se considerarán como fuerza mayor, además de las legalmente reconocidas como tales, las dificultades objetivas de carácter técnico legal, tales como la demora en obtener el registro en Organismos Públicos para la autorización para la comercialización, ajenas a la voluntad del titular de la patente, que hagan imposible la explotación del invento. La falta de recursos económicos o la falta de viabilidad económica de la explotación no constituirán por sí solos circunstancias justificativas. ”
Algeria 3.07	Ordonnance n° 03-07 du 19 Joumada El Oula 1424 correspondant au 19 juillet 2003 relative aux brevets d'invention. Art. 38. « Toute personne peut, à tout moment après l'expiration d'un délai de quatre (4) années à compter de la date de dépôt de la demande d'un brevet ou de trois (3) années à compter de la date de délivrance du brevet d'invention, obtenir auprès du service compétent, une licence d'exploitation pour cause de défaut ou d'insuffisance d'exploitation. Pour l'appréciation du délai cité à l'alinéa ci-dessus, le service compétent appliquera celui qui expire le plus tard. La licence obligatoire ne peut être accordée par le service compétent, qu'après vérification de la réalité du défaut ou de l'insuffisance d'exploitation et s'il n'existe pas de circonstances qui justifient ce défaut ou cette insuffisance d'exploitation de l'invention brevetée. »
*Bangladesh 1.87	Patents and Designs Act, 1911 (Act NO. II of 1911), s. 22: “Any person interested may present a petition to the Government which shall be left at the Department of Patents, Designs and Trade Marks, together with the prescribed fee, alleging that the demand for a patented article in Bangladesh is not being met to an adequate extent and on reasonable terms and praying for the grant of a compulsory license, or, in the alternative, for the revocation of the patent. ”
Egypt 2.77	Law No. 82 of 2002 Pertaining to the Protection of Intellectual Property Rights, Art. 23(4): “The Patent Office - after the approval of a Ministerial Committee established by a decree from the Prime Minister - shall grant compulsory licenses for the exploitation of the invention. The committee shall determine the financial rights of the patentee upon the issuance of such licenses, in the following circumstances: [...] Fourth- If the patentee does not exploit the patent in the Arab Republic of Egypt by himself or upon his approval, or it has not been sufficiently exploited, in spite of the lapse of four years from the date of submitting the patent application, or three years from the date of the grant thereof - whichever is longer - and also if the patentee ceases the exploitation of the invention without an acceptable reason for a period exceeding one year. The exploitation may be achieved by the production of the protected product in the Arab Republic of Egypt, or by the utilization of the method of manufacture protected by a patent of invention therein. ”
Ethiopia 2.13	Proclamation No. 123/1995 Concerning Inventions, Minor Inventions and Industrial Designs, Art. 29(3): “Any person who is capable of working a patented invention may apply for a compulsory license, where the patentee fails, without legitimate reason to justify his inaction, to work his invention in Ethiopia , after the expiration of a period of three years from the date of grant of the patent or four years from the date of filing of the patent application which ever expires last.”
Indonesia 2.77	Law No. 14 of 1 August 2001 Regarding Patents, Art. 76(3): “A request for a Compulsory License as referred to in paragraph (1) shall only be made on the grounds that the relevant patent has not been implemented or only partially implemented by the Patent holder.”
Mozambique 2.52	Industrial Property Code (Approved by Decree No. 04/2006 of 12th April 2006), Art. 83: 1. “The proprietor of a patent shall be required to work the patented invention, either directly or indirectly. 2. Working shall commence within three years after the date on which the patent was granted, or within four years after the application was filed, whichever period is longer. 3. If the proprietor fails to work the invention within the stipulated periods, he may be compelled to grant a licence to a third party. 4. The proprietor of the patent may also be compelled to grant a

	licence to a third party to work the patent if the use of another patent depends on it. 5. A compulsory licence will only be granted, as envisaged in the preceding paragraphs, when the potential user has made efforts to obtain the patent proprietor's agreement on reasonable conditions and the negotiations have not been successful."
Nigeria 2.50	Patents and Designs Act, Chapter 344, 1990, Schedule 1, paras. 1-4: "1. Subject to this Part, at any time after the expiration of a period of four years after the filing of a patent application or three years after the grant of a patent, whichever period last expires, a person may apply to the Court for the grant of a compulsory licence on one or more of the following grounds- (a) that the patented invention, being capable of being worked in Nigeria, has not been so worked; (b) that the existing degree of. working, of the patented invention in Nigeria does not meet on reasonable terms the demand for the product; (c) that the working of the patented invention in Nigeria is being hindered or prevented by the importation of the patented article; and (d) that, by reason of the refusal of the patentee to grant licences on reasonable terms, the establishment or development of industrial or commercial activities in Nigeria is unfairly and substantially prejudiced. 2. If an invention protected by a patent in Nigeria cannot be worked without infringing rights derived from a patent granted on an earlier application or benefiting from an earlier foreign priority, a compulsory licence may be granted to the patentee of the later patent to the extent necessary for the working of his invention if the invention- (a) Serves industrial purposes different from those served by the it, invention which is the subject of the earlier patent; or (b) constitutes substantial technical progress in relation to that last mentioned invention. 3. If the two inventions mentioned in paragraph 2 of this Schedule serve the same industrial purposes, a compulsory licence may be granted under that paragraph only on condition that a compulsory licence shall also be granted in respect of the later patent to the patentee of the earlier patent, if he so requests. 4. A compulsory licence shall not be granted in respect of a patent if the patentee satisfies the court that his actions in relation to the patented invention are justifiable in the circumstances, but he shall not be held to have so satisfied the court if he merely shows that the patented article is freely available for importation. "
Saudi Arabia 2.98	Law of Patents, Layout-Designs of Integrated Circuits, Plant Varieties, and Industrial Designs, 2004, Art. 24(a): "The City may grant a compulsory license to a third party to exploit an invention covered by the patent or a layout design of an integrated circuit covered by a certificate of design upon an application submitted to it, according to the following: (1) The application shall be submitted after the elapse of four years from the date of filing the patent application or three years from the date of granting the patent, whichever expires later, without the owner of the protection document exploiting his invention or having exploited it in an inadequate fashion, unless he justifies that with a legitimate excuse. [...] (3) The compulsory license is basically granted to make the invention or design available in the local markets. But this provision does not apply where the aim of the license is to prevent or restrict practices against which a decision or judgment is issued declaring them to be acts of unlawful competition."
COUNTRY	CATEGORY 2
Brazil 3.59	<i>Ley N° 9.279, del 14 de mayo de 1996, que regula los derechos y obligaciones relativos a la propiedad industrial</i> , Art. 68(1): "The titleholder shall be subject to having the patent licensed on a compulsory basis if he exercises his rights derived therefrom in an abusive manner, or by means thereof engages in abuse of economic power, proven pursuant to law in an administrative or judicial decision. (1) The following also occasion a compulsory license: I. non-exploitation of the object of the patent within the Brazilian territory for failure to manufacture or incomplete manufacture of the product, or also failure to make full use of the patented process, except cases where this is not economically feasible, when importation shall be permitted; or II. commercialization that does not satisfy the needs of the market."
Canada 4.67	Patent Act (R.S., 1985, c. P-4) S. 65: "(1) The Attorney General of Canada or any person interested may, at any time after the expiration of three years from the date of the grant of a patent, apply to the Commissioner alleging in the case of that patent that there has been an abuse of

	<p>the exclusive rights thereunder and asking for relief under this Act.</p> <p>What amounts to abuse (2) The exclusive rights under a patent shall be deemed to have been abused in any of the following circumstances: (a) and (b) [Repealed, 1993, c. 44, s. 196]</p> <p>(c) if the demand for the patented article in Canada is not being met to an adequate extent and on reasonable terms; (d) if, by reason of the refusal of the patentee to grant a licence or licences on reasonable terms, the trade or industry of Canada or the trade of any person or class of persons trading in Canada, or the establishment of any new trade or industry in Canada, is prejudiced, and it is in the public interest that a licence or licences should be granted; (e) if any trade or industry in Canada, or any person or class of persons engaged therein, is unfairly prejudiced by the conditions attached by the patentee, whether before or after the passing of this Act, to the purchase, hire, licence or use of the patented article or to the using or working of the patented process; or (f) if it is shown that the existence of the patent, being a patent for an invention relating to a process involving the use of materials not protected by the patent or for an invention relating to a substance produced by such a process, has been utilized by the patentee so as unfairly to prejudice in Canada the manufacture, use or sale of any materials. (3) and (4) [Repealed, 1993, c. 44, s. 196] Definition of “patented article” (5) For the purposes of this section, the expression “patented article” includes articles made by a patented process.</p>
Ghana 3.35	<p>Patents Act, 2003 (Act 657), s. 14(1): “On a request, made to the court after the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last, the court may issue a non-voluntary licence if the court is satisfied that the patented invention is not exploited or is insufficiently exploited, by working the invention locally or by importation, in the country.”</p>
India 3.76	<p>Patents Act, 1970, s. 84(1): “At any time after the expiration of three years from the date of the sealing of a patent, any person interested may make an application to the Controller for grant of a compulsory licence on patent on any of the following grounds, namely: – (a) that the reasonable requirements of the public with respect to the patented invention have not been satisfied, or (b) that the patented invention is not available to the public at a reasonably affordable price, or (c) that the patented invention is not worked in the territory of India.”</p>
Jordan 3.43	<p>Patents of Invention Law No. 32 of 1999, as amended by Law No. 28 of 2007, Art. 22B: “The Minister may grant a license to use a patent to third parties without obtaining the patentee’s consent in any of the following cases exclusively: [...] B.1. If the patentee doesn’t exploit it or exploits it insufficiently before the elapse of 4 years as of the application date or 3 years as of the granting date, the period to be applied is the one that elapses later. However, the Minister may grant the patentee an additional grace period if he deems that reasons beyond the control of the patentee have prevented exploitation. 2. For the purposes of item (1) of this paragraph, and without prejudice to the provisions of the related International Conventions, the importation of the subject goods of the patent to the kingdom shall be deemed utilization of the patent.</p>
Kenya 3.22	<p>Industrial Property Act, 2001, s. 72(1): “At any time after four years from the filing date of an application or three years from the grant of a patent, whichever period last expires, any person may apply to the Tribunal for a licence to exploit the patented invention on the grounds that a market for the patented invention is not being supplied on reasonable terms in Kenya.”</p>
Malaysia 3.48	<p>Patents Act No. 291 of 1983, as amended, s. 49(1): “(1) At any time after the expiration of three years from the grant of a patent, or four years from the filing date of the patent application, whichever is the later, any person may apply to the Registrar for a compulsory licence under any of the following circumstances: (a) where there is no production of the patented product or application of the patented process in Malaysia without any legitimate reason; (b) where there is no product produced in Malaysia under the patent for sale in any domestic market, or there are some but they are sold at unreasonably high prices or do not meet the public demand without any legitimate reason.”</p>
Mexico 3.88	<p>Ley de la Propiedad Industrial del 25 de junio de 1991 con las ultimas enmiendas del 17 de mayo de 1999, Art. 70: “Tratándose de invenciones, después de tres años contados a partir de la fecha del otorgamiento de la patente, o de cuatro años de la presentación de la solicitud, según lo que ocurra más tarde, cualquier persona podrá solicitar al Instituto la concesión de una licencia obligatoria para explotarla,</p>

	cuando la explotación no se haya realizado, salvo que existan causas debidamente justificadas. Párrafo reformado DOF 02-08-1994 No procederá el otorgamiento de una licencia obligatoria, cuando el titular de la patente o quien tenga concedida licencia contractual, hayan estado realizando la importación del producto patentado u obtenido por el proceso patentado. ”
Morocco 3.52	Dahir No. 1-00-91 of 9 Kaada 1420 (February 15, 2000) on the Enactment of Law No. 17-97 on the Protection of Industrial Property, Art. 60: “Any person or entity under public or private law may, three years after the patent is granted or four years after the date on which the patent is applied for, obtain from the court a compulsory license for such patent, on the conditions provided for in Articles 61 and 62 below, if at the time of the request, and failing legitimate reasons , neither the owner of the patent or his successor in title: (a) has begun to work or has made real and effective preparations for working the invention that is the subject matter of the patent on the territory of the Kingdom of Morocco; (b) has marketed the product that is the subject matter of the patent in a quantity sufficient to meet the needs of the Moroccan market; or (c) where the working or marketing of the patent in Morocco has been abandoned for more than three years. ”
Philippines 4.18	Intellectual Property Code, s. 93(5): “The Director of Legal Affairs may grant a license to exploit a patented invention, even without the agreement of the patent owner, in favor of any person who has shown his capability to exploit the invention, under any of the following circumstances: [...] If the patented invention is not being worked in the Philippines on a commercial scale, although capable of being worked, without satisfactory reason: Provided, That the importation of the patented article shall constitute working or using the patent. ”
South Africa 4.25	Patents Act No. 57 of 1978, s. 56(2): “The rights in a patent shall be deemed to be abused if—(a) the patented invention is not being worked in the Republic on a commercial scale or to an adequate extent, after the expiry of a period of four years subsequent to the date of the application for the patent or three years subsequent to the date on which that patent was sealed, whichever period last expires, and there is in the opinion of the commissioner no satisfactory reason for such non-working; [...] (c) the demand for the patented article in the Republic is not being met to an adequate extent and on reasonable terms ; (d) by reason of the refusal of the patentee to grant a licence or licences upon reasonable terms, the trade or industry or agriculture of the Republic or the trade of any person or class of persons trading in the Republic, or the establishment of any new trade or industry in the Republic, is being prejudiced, and it is in the public interest that a licence or licences should be granted; or (e) the demand in the Republic for the patented article is being met by importation and the price charged by the patentee, his licensee or agent for the patented article is excessive in relation to the price charged therefor in countries where the patented article is manufactured by or under licence from the patentee or his predecessor or successor in title. ”
Thailand 2.66	Patent Act B.E. 2522 (1979), s. 46(1)-(2): “At any time after the expiration of three years from the grant of a patent or four years from the date of application, whichever is later, any person may apply to the Director-General for a license if it appears, at the time when such application is filed, that the patentee unjustifiably fails to exercise his legitimate rights as follows: (1) that the patented product has not been produced or the patented process has not been applied in the country, without any legitimate reason; or (2) that no product produced under the patent is sold in any domestic market, or that such a product is sold but at unreasonably high prices or does not meet the public demand, without any legitimate reason. ”
Tunisia 3.25	Loi n_2000-84 du 24 août 2000, relative aux brevets d’invention, Art. 69: “Any interested party may, after the expiry of the period provided for in Article 51 of this Law, obtain a compulsory license at any time in any of the following cases: — where the invention to which the patent relates has not started to be worked industrially in Tunisia, or where no real and effective preparations have been made for such working, within the period provided for in Article 51 of this Law; — where the product which is the subject matter of the invention has not been marketed in sufficient quantities to meet the needs of the Tunisian market ; — where the industrial or commercial exploitation of the invention to which the patent relates has been abandoned for more than three years in Tunisia.”
Uruguay 3.39	<i>Ley N° 17.164 del 2 de septiembre de 1999 - Regúlanse los derechos y obligaciones relativos a las patentes de invención, los modelos de utilidad y los diseños industriales (1.827*R)</i> , Art. 54: “Any interested party may request a compulsory license after three years have elapsed since the grant of the patent or four years since the date of application, whichever expires last, if the invention has not been exploited or if

	<p>serious and effective preparations have not been made for its exploitation or if exploitation has been suspended for more than one year, provided that there are no reasons of <i>force majeure</i>. In addition to the reasons recognized in the legislation, insurmountable objective problems of a technical or legal nature such as delays in the granting of authorizations by government bodies, independent of the will of the owner of the patent, which make working the patent impossible, shall be considered reasons of <i>force majeure</i>. The exploitation of a patent shall include its production, use, import or any other commercial activity undertaken and related to its subject matter. In this respect, the working of the patent by a representative or licensee shall be considered carried out by the owner of the patent.”</p>
<p>*Zambia 1.94</p>	<p>Patents Act, Chapter 400 of the Laws of Zambia, s. 37: “(1) Subject to the provisions of subsection (14), any person interested who can show that he has been unable to obtain a licence under a patent on reasonable terms may, after the expiration of a period of three years subsequent to the date on which that patent was sealed or four years subsequent to the date on which the application in respect thereof was lodged, whichever period last expires, apply to the Registrar in the prescribed manner for a compulsory licence on the ground that the reasonable requirements of the public with respect to the invention in question have not been or will not be satisfied. [...] (6) The reasonable requirements of the public referred to in subsection (1) shall be deemed not to have been satisfied in any of the following circumstances, namely: (a) if the patented invention, being an invention capable of being worked in Zambia, is not being worked therein on a commercial scale and there is no satisfactory reason for such non-working [...] (b) if the working of the invention within Zambia on a commercial scale is being prevented or hindered by the importation of the patented article by the patentee or persons claiming under him, or by persons directly or indirectly purchasing from him or by persons against whom the patentee is not taking or has not taken proceedings for infringement; (c) if the demand for the patented article in Zambia is not being met to an adequate extent and on reasonable terms; (d) if by reason of the refusal of the patentee to grant a licence or licences upon reasonable terms, the trade or industry of Zambia or the trade of any person or class of persons trading in Zambia, or the establishment of any new trade or industry in Zambia, is being prejudiced, and it is in the public interest that a licence or licences should be granted; (e) if any trade or industry in Zambia, or any person or class of persons engaged therein, is being prejudiced by unfair conditions attached by the patentee, whether before or after the commencement of this Act, to the purchase, hire, licence or use of the patented article, or the using or working of the patented process; (f) if any condition which under the provisions of section <i>forty-nine</i> is null and void as being in restraint of trade and contrary to public policy, has been inserted in any contract made in relation to the sale or lease of or any licence to use or work any article or process protected by the patent: Provided that, for the purpose of determining whether there has been any abuse of the monopoly rights under a patent, due regard shall be had to the fact that patents are granted not only to encourage invention but also to secure that inventions shall so far as possible be worked on a commercial scale in Zambia without undue delay.”</p>
<p>Zimbabwe 2.60</p>	<p>Patents Act (Chapter 26:03) (as last amended by Act 9 of 2002), s. 31: “(1) Subject to subsection (15), any person interested who can show that he has been unable to obtain a licence under a patent on reasonable terms may, within a period of six months from the initial request for a voluntary licence, apply to the Registrar in the prescribed manner for a compulsory licence on the ground that the reasonable requirements of the public with respect to the invention in question have not been or will not be satisfied. [...] (6) The reasonable requirements of the public referred to in subsection (1) shall be considered not to have been satisfied in any of the following circumstances— (a) if the patented invention, being an invention capable of being worked in Zimbabwe, is not being worked therein on a commercial scale and there is no satisfactory reason for such non-working: [...] (b) if the working of the invention within Zimbabwe on a commercial scale is being prevented or hindered by the importation of the patented article by— (i) the patentee or persons claiming under him; or (ii) persons directly or indirectly purchasing from the patentee; or (iii) persons against whom the patentee is not taking or has not taken proceedings for infringement; (c) if the demand for the patented article in Zimbabwe is not being met to an adequate extent and on reasonable terms; (d) if, by reason of the refusal of the patentee to grant a licence or licences upon reasonable terms, the trade or industry of Zimbabwe or the trade of any person or class of persons trading in Zimbabwe or the establishment of any new trade or industry in Zimbabwe is being prejudiced, and it is in</p>

	<p>the public interest that a licence or licences should be granted; (e) if any trade or industry in Zimbabwe or any person or class of persons engaged therein is being prejudiced by unfair conditions attached by the patentee, whether before or after the appointed day, to the purchase, hire, licence or use of the patented article or to the using or working of the patented process; (f) if any condition, which under section forty-four is null and void as being in restraint of trade and contrary to public policy, has been inserted in any contract made in relation to the sale or lease of or any licence to use or work any article or process protected by the patent: Provided that, for the purpose of determining whether there has been any abuse of the monopoly rights under a patent, due regard shall be had to the fact that patents are granted not only to encourage invention but also to secure that inventions shall so far as possible be worked on a commercial scale in Zimbabwe without undue delay.</p>
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