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- 1 The importance of international technology transfer for economic development can hardly be overstated. Whereas the often conflicting interests of developed countries on the one hand and developing countries on the other have long been the cause of serious political obstacles to technology transfers, by now it appears to be accepted by most scholars that higher levels of intellectual property rights protection are fundamental for encouraging both foreign direct investment (FDI) and licensing. However, the best strategies for attaining a sufficient level of protection and to what extent such strategies would be in conflict with other strategies and objectives pursued in international negotiations and relations remains an open issue. In particular, it is not quite clear if, and if so, to what extent, either FDIs or licensing agreements by and amongst private firms are to be preferred. Similarly doubts exist with regard to the effects of multilateral or bilateral treaties on the transfer of technology.
- 2 In view of these questions, the main focus of the present book – which was written as a Ph.D. thesis at the Universities of Turin/Italy and Ghent/Belgium – is on assessing whether certain types of international rules are more or less capable of efficiently encouraging technology flows from developed to developing countries. Of course, such an endeavor will encounter a variety of methodological obstacles, which Yi Shin Tang describes right at the very beginning of his book. In particular, the relationship between FDIs and licensing is much more intertwined than the formal opposition might suggest. The reason is simply that licensing decisions by private firms are taken in view of the existing international or at least bilateral legal framework. Inversely, existing licensing habits, needs or demands are shaping the content of FDIs. Statistical data is also not always available, or if it is available, it is not sufficiently fine-grained for permitting unambiguous conclusions. However, the data available do clearly indicate that in spite of an increase in the in-

ternational and bilateral instruments in the wake of the creation of the WTO system and the TRIPS agreement, the flows of technology to developing countries have not taken place as expected by both policy makers and economists. Even amongst developing countries, the benefits of the agreements seem to be rather unbalanced towards few countries, in particular those in South East Asia.

- 3 Against this background, Yi Shin Tang uses a methodology that is predominantly legal in nature (because of the normative construction and effects of legal rules), but is combined with an economic and institutional analysis (because of the concerns of efficiency to be achieved by the legal rules in question). In this combination of economic analysis and a comparative law approach (comparative law and economics), Yi Shin Tang has attempted to mitigate the risk of arriving at insufficiently founded results, one which is inherent in an economic analysis of international law.
- 4 After the introductory chapter, the five remaining chapters of the book focus on the following: the current scenario of international transfer of technology (chapter 2); the law and economics of intellectual property in the international market (chapter 3); the legal structure of the international regimes on technology transfer (chapter 4) and the relationship between bilateral investment treaties (BITs) and multilateral intellectual property rights (IPRs) regimes (chapter 5). The last chapter (chapter 6) is reserved for a general conclusion.
- 5 While chapter 2 is mainly devoted to the introduction and explanation of fundamental notions, such as the economic nature of innovation, foreign direct investment and licensing, the role of nation-states and transnational corporations, a practical and theoretical description of current technology flows and the grounds for international cooperation in the technology market, in chapter 3 Yi Shin Tang develops a series of tools that are needed for more detailed understanding of these factors. Based on previous work by Nicholson, he develops a formal mathematical model in order to explain “how the structure of IPRs creates incentives for increased flows of FDI and licensing in foreign markets” (p. 86). In this way, he is able to demonstrate that – and

under what circumstances – the same level of IPR protection has different impacts on FDI and licensing, which in turn may influence an individual firm’s decision to invest or license abroad. In addition, a comparison of both domestic and international law systems reveals that international IPR legislation provides a greater incentive to technology transfer than mere domestic legislation. Of course, this conclusion may hardly surprise, if only for the simple fact that technology transfer has to rely on some minimum level of IPR protection outside of the domestic jurisdiction of the exporting or licensing firm. Similarly, Yi Shin Tang analyzes the policy options resulting from his findings for developing countries. Also in this chapter, Yi Shin Tang clarifies the relationship between FDI and licensing on the one hand and the multilateral and bilateral options on the other. According to his analysis, FDI is more often achieved by BITs, whereas licensing incentives are rather to be found within multilateral IPR instruments. From a transnational firm’s perspective, BITs have the advantage that in general they not only provide a higher degree of IPR protection in the developing country, but that the means of enforcement are usually more efficient than under a multilateral IPR instrument. It should be noted, however, that in emphasizing the lower level of information that private firms might gain with regard to the target state’s domestic level of IPR protection and enforcement under a multilateral IPR treaty as opposed to a BIT, Yi Shin Tang does not mention the effect of the information that is exchanged on exactly these matters within the TRIPS Council.

- 6 Chapter 4, the structural analysis of the international legal rules governing FDI and licensing, is then again much more conventional in style and methodology. Here, Yi Shin Tang describes both the development and the contents of the major IPR conventions (the Paris and Berne Conventions, the Rome Convention, the Madrid Agreement and, most notably, of course, the TRIPS agreement), before giving an overview and analyzing the – relatively “boiler plate”–normative structure of BITs, which is based on more than 2000 BITs. This structure includes legal protection of foreign investment against every type of hostility, including the imposition of the national treatment principle, measures securing full market access

and repatriation of investments, measures against deliberate expropriation and strong dispute settlement mechanisms. Of course, it is true that the international regime of IPR treaties as they presently exist is the result of a historic piecemeal process rather than of a unique legislative design. However, it might be worth noting that the TRIPS agreement in particular did react in a comprehensive fashion to the gaps and lacuna of the existing international treaties. Nevertheless, BITs, Yi Shin Tang concludes, do provide a greater level of security to private firms and investors, which – one might add – could work equally well as an incentive to increased FDI and licensing.

- 7 In chapter 5, Yi Shin Tang develops his major idea, namely that under both article XXIV of the GATT and article 4 of TRIPS not only is there room left for bilateral action, but that – contrary to the view held by most scholars – BITs may indeed have beneficial effects on the transfer of technology (pp. 151 et seq.). Here, his analysis is again based on an economic model which – by way of an analysis of the expected behavior of the players involved – intends to demonstrate the beneficial effects of a combination of both multilateral and bilateral actions taken in view of promoting the international transfer of technology, notably to developing countries. But in this respect Yi Shin Tang has to admit that his theory must rely on the assumption that the states “have a sufficient capability to decide on a rational basis, subject only to the forum of negotiations in which they are interacting” (p. 191). However, given both the potentially unequal bargaining power between the two parties involved in the conclusion of a BIT and the “boiler plate” structure of the latter, one may have serious doubts whether this assumption is fulfilled in reality, in particular when BITs are negotiated between highly developed and developing countries.
- 8 In sum, Yi Shin Tang refutes both the view held by many scholars that the lack of a desired transfer of technology from developed to developing countries is the result of the growing dominance of BITs over multilateral IPR-agreements and the view – also held by many – that the level of IPR-protection contained in the IPR-agreements has to be held responsible. Rather, Yi Shin Tang sug-

gests that “stronger IPRs may indeed provide better and more stable incentives for international technology transfers” due to the fact that IPR-goods are “not only owned by private multinationals but also depends on the capacity of high investments in research and development that only these companies enjoy”. Also, contrary to the view shared by most international trade law scholars, Yi Shin Tang concludes that “bilateral treaties do not necessarily create a harmful influence on the existing multilateral IPR framework” (p. 193). He argues that if it is true that multilateral and bilateral instruments are strategies independent from one another, they might well produce beneficial effects if pursued together. Of course this conclusion has then to face the question of why the present use of BITs does not produce better results with regard to the desired transfer of technology. To answer this question, Yi Shin Tang points out that so far, most BITs have been concluded between developed countries and that developing nations do not (yet) make optimal use of BITs, mainly due to ideological reasons yet to be overcome. Second, in spite of all his attempts to adequately describe and model the economic effects of the different normative tools, in the end Yi Shin Tang must admit “that many other factors are equally or more significant in promoting technology inflows to developing countries” than the institutional conditions at the international level (p. 194). In particular, problems inherent to the domestic environment are of importance, such as a developing country’s gross domestic product, inflation and level of imports as well as institutional issues such as the rule of law and the skill of labor and, one might add, infrastructure and the educational system.

- 9 However, even if a complete model that could take into account all the different factors is still far off, the present book adds additional insight and contains enough food for further thought. The book provides a robust guideline to policy makers, researchers and students wishing to identify and categorize the factors that influence the process of technology flows across national boundaries as well as the economic theories and legal arguments that may support a given position in international forums. The book may serve as a valuable source of argumentation for both developed and developing countries in the yet unexplored relationship between foreign

investments, technology licensing and international trade.

- 10 Undoubtedly, Yi Shin Tang is a new talent on the international IP and trade law horizon. He studied law at the University of São Paulo and specialized in international trade law for his post-graduate studies at the University Institute of European Studies (IUSE) in Turin/Italy and at the University of Ghent/Belgium. He also obtained a joint master degree from the New York University/National University of Singapore (LL.M in Law and Global Economy from NYU and LL.M. in Asian Legal Studies from NUS). He was a teaching assistant at the Fundacao Getulio Vargas School in São Paulo and a research assistant at the Cornell University of Law School in Ithaca, NY/USA, and he has worked as a researcher for the International Trade Law and Development Institute in São Paulo. Internationally networked already at an early stage in his career, in 2007 and 2008 Yi Shin Tang was a fellow of the Akademie Schloss Solitude in

Stuttgart, Germany. He won the NYU@NUS Dean's Award in 2008 as well as awards from the University of Paris, Graduate Institute of Geneva, Coase Institute and the European Council. Yi Shin Tang is now back in Brazil, working as a lawyer in the São Paulo office of the firm of Magalhães, Nery e Dias and teaching at a local university. Earlier publications include: "How Evil is Bilateralism?", working research presented at the Second Conference on Economic Geography in Beijing/China (2007); "Technological Innovation, State Rationality, and Design of International Agreements", a working paper presented at the Law and Society International Conference in Berlin (2007); "An analysis of the international institutions governing the transfer of technology to developing countries", research presented at the IEL Conference in Ghent/Belgium (2006) and "Telecommunication Services: Perspectives for Brazil in the Doha Round", a book chapter published in Trade in Services in the WTO, edited by Umberto Celli Jr., São Paulo (2004).