HOST COUNTRY TAXATION OF TRANSFER OF TECHNOLOGY TRANSACTIONS

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I. INTRODUCTION

The distribution of economic benefits arising from international transfer of technology transactions has received substantial attention from both theoretical and practical points of view.[1] However, the effects of the tax systems of the different countries involved in the international trade of technology generally have not been the objects of careful economic analysis.[2] This situation is especially puzzling insofar as the restructuring of the different tax systems that apply to transfer of technology operations may substantially alter the final net flow of royalties and other types of consideration from the host country to the supplier nation. Drafters of tax and other statutes dealing with international transfer of technology transactions in developing nations frequently concentrate their efforts on setting up a framework limiting the contractual possibilities of the parties involved. This is generally accomplished by imposition of a screening procedure whereby certain provisions are invalidated and payments agreed upon by local purchasers of technology must comply with rules devised to favor the

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[1] *See, e.g.*, Finnegann & McCarthy, *The Impact of the United States Tax Laws on International Technology Transfer: An Overview and Some Suggestions for Minimizing the Bite*, 8 GA. J. INT'L & COMP. L. 115 (1978); *International Technology Transfer*, 71 PROC. AM. SOC'Y INT'L L. 224 (1977); Pease Jeffries, *Regulation of Transfer of Technology: An Evaluation of the UNCTAD Code of Conduct*, 18 HARV. INT'L L. J. 309 (1977); Roffe, *International Code of Conduct on Transfer of Technology*, 11 J. WORLD TRADE L. 186 (1977); Silverstein, *Sharing United States Energy Technology with Less-Developed Countries: A Model for International Technology Transfer*, 12 J. INT'L L. & ECON. 363 (1978); Wang, *Code of Conduct and Taxation of International Corporations*, 8 GA. J. INT'L & COMP. L. 809 (1978); Zvijdwijk, *The UNCTAD Code of Conduct on the Transfer of Technology*, 24 MCGILL L.J. 562 (1978); Note, *An International Code of Conduct on Transfers of Technology*, 26 INT'L & COMP. L. Q. 210 (1977); Note, *Technology, Trade, and the Law: A Preliminary Exploration*, 6 L. & POL'Y INT'L BUS. 85 (1974).

[2] In this sense, it is significant that the Draft International Code of Conduct on Transfer of Technology submitted by the "Group of 77" developing countries to UNCTAD contained a list of 41 prohibited restrictive clauses, and only one mention of an eventual undertaking by developed countries to allow a "preferential fiscal treatment to revenue resulting from transfer of technology to developing countries." *See* U.N. Doc. TD/CODE TOT/1/Add. 1, Annex 1 (1978).

host country's interests.[3] However, in practice, the rules of the market for modern technology have made enforcement impossible or inconvenient for the interests of domestic enterprises eager to avail themselves of the best technical possibilities.[4] On the other hand, little has been done in the way of optimizing the tax systems of recipient nations in order to minimize the net cost of technology acquired abroad. Also, many of the provisions that do purport to minimize this cost result in a net transfer of income from the host nation's tax authority to that of the country where the technology originates.

This article discusses the basic economic effects of a host country's withholding tax on royalties and other revenues arising from transfer of technology transactions.[5] One of the points to be stressed in this respect is that the effects of the different options open for a country with a negative balance of technology payments (generally an underdeveloped nation) are linked closely with the tax systems in the countries where the technology originates (generally industrialized nations). Thus, the tax policy of the host nation, whether applied through tax treaties or unilaterally, should be formulated with a view to its overall effects, with care paid to the consequences policy decisions may have under the tax provisions of the countries where the technology originates.

This article does not discuss to what extent developed nations should cooperate with the less industrialized sector of the world by means of the amendment of their tax laws regarding international industrial property transactions. Rather, it focuses on simple taxation alternatives available to the host nations that may alter the distribution of the income derived from foreign technology.

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[3] *See, e.g.*, Decision 24 of the Cartagena Agreement Commission; Argentine Law 21.617 (Argen. 1977); Mexican Law of Dec. 28, 1972 on the Registration of Contracts and Agreements Regarding the Transfer of Technology (Mex. 1972). The principal Latin American transfer of technology statutes have been collected in INSTITUTO PARA LA INTEGRACION DE AMERICA LATINA & BANCO INTERAMERICANO DE DESARROLLO, REGIMEN DE LA TRANSFERENCIA DE TECHNOLOGIA EN LOS PAISES DE AMERICA LATINA (1977).

[4] *See* Argentine Law 21.617 (Argen. 1977) (Official Commentary, Introduction).

[5] To simplify the analysis, we shall suppose that the host nation, *i.e.*, that to which the technology is transferred, taxes income derived from foreign technology by means of a withholding tax. In fact, other types of taxation may also be applicable. *See Tax Treatment of the Importation and Exportation of Technology, Know-How, Patents, Other Intangibles and Technical Assistance*, 60A CAHIERS DE DROIT FISCAL INTERNATIONAL 1 (1975) (hereinafter cited as *Tax Treatment*).

II. TAX TREATMENT OF TRANSFER OF TECHNOLOGY TRANSACTIONS IN TECHNOLOGY EXPORTING COUNTRIES

A predominant part of the discussions in connection with the taxation of income derived from transfer of technology transactions by the recipient countries omits an analysis of the relation of such taxation to the tax rules applicable in the countries from which the technology is derived. This omission is expressly or implicitly based on the idea that the effects of the host country taxation on transfer of technology operations are independent of the tax situation in the technology exporting countries. Because this article focuses on the overall effects of host country taxation of transfer of technology revenues, taking into consideration the tax treatment applicable in the supplier countries, it is necessary to review the possible structure of such treatment.

In the absence of a tax treaty between the country where the transferor is a resident for fiscal purposes and the country where the transferee operates, the income derived from transfer of technology transactions (*e.g.*, royalties, flat license fees, *etc.*) is generally subject to a double tax burden. The country in which the technology is imported typically imposes a withholding or similar tax on the revenues accruing in favor of the transferor,[6] while in many cases this income is also subject to income tax treatment in the country where the transferor is a resident.[7]

To prevent the negative effect that this double taxation would have on the international flow of technology, several systems, such as double taxation agreements, have been devised, particularly in capital and technology exporting countries.[8] These systems are, basically, the following:

(a) Double taxation agreements in which, *e.g.*, a maximum is set for the tax rate applicable in the technology importing country.[9] These agreements usually include some form of tax credit system to be applied by the country where the transferor is taxed as a resident,[10] sometimes taking the form of a tax sparing mechanism.[11]

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[6] *See Tax Treatment, supra* note 5, at 10. The withholding tax may apply on gross or net income, depending on the country considered. *Id.* at 13. Also, taxes other than income or withholding taxes may be applicable in the technology importing country, *e.g.*, turnover or property taxes. *Id.* at 26.

[7] *Id.* at 14.

[8] *See* M. CHALIFOUR, LE REGIME FISCAL DES TRANSFERTS INTERNATIONAUX DE TECHNOLOGIE (1976).

[9] *See Tax Treatment, supra* note 5, at 16.

[10] *Id.*

[11] *Id.* at 17.

(b) Unilaterally applied tax credit.[12] This system is of special significance due to the fact that it has been enacted in a group of technology exporting countries to which a large proportion of the revenues issuing from transfer of technology transactions is directly or indirectly remitted. The United States,[13] the United Kingdom, Japan, Germany,[14] and the Netherlands[15] are among the countries included in this group.[16] Under the tax credit system, taxes paid in the host country on transfer of technology income may be credited against the tax liability imposed in the technology exporting country, with certain limitations that vary under each applicable statute.[17]

(c) Non-taxation of the income derived from exported technology or, with similar effects, of such income when it has been subjected to taxes abroad.[18]

(d) Treatment of taxes paid abroad as a deductible expense.[19] In this case, the income subject to taxation in the technology exporting country is reduced by the amount withheld in the host country. This system is sometimes used as an alternative to the tax credit method, subject to the taxpayer's election.[20]

(e) Taxation of the income derived from technology exports at a lower rate than that generally applicable to other taxable income.[21] This system may be combined with the deduction as an expense of the taxes paid abroad.[22]

(f) Tax sparing treatment,[23] which consists of crediting the

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[12] *Id. See also* OCDE, MESURES FISCALES POR ENCOURAGER LES INVESTISSEMENTS PRIVES DANS LES PAYS EN VOIE DE DEVELOPPEMENT 51 (1965).

[13] *See* I.R.C. §901.

[14] *See Tax Treatment* II, *supra* note 5, at 9, where some of the limitations applicable in Germany to the tax credit system are stated.

[15] The tax credit system is only applicable, as a rule, to income that originated in underdeveloped countries. *See Tax Treatment* II, *supra* note 5, at 86.

[16] The details of the tax credit system may vary substantially from country to country. For the purposes of this article, only the basic rules, common to most nations, shall be considered, except where otherwise stated.

[17] *E.g.*, the "overall limitation" applicable in the United States, under which the amount of the foreign tax credit is limited by an amount determined by multiplying the taxpayer's total United States tax liability by a fraction consisting in his total foreign source income divided by his total taxable income. *See* I.R.C. §904 (a).

[18] *See* OCDE, *supra* note 12, at 51, 101.

[19] *Id.* at 102. This system applies, *e.g.*, in Austria and Luxembourg. *See Tax Treatment* II, *supra* note 5, at 77, 260.

[20] *See, e.g.*, I.R.C. §275 (a)(4).

[21] This system applies, *e.g.*, in France. *See Tax Treatment* II, *supra* note 5, at 189.

[22] *Id.* at 193.

[23] *Id.* at 17.

taxes generally applicable in the technology importing country against the exporting country's tax liability, even if the former tax has not been paid due to special promotional provisions, *e.g.*, tax incentives for investments in certain areas.[24] A variation of this scheme, often employed in double taxation agreements between developed and underdeveloped nations, is to determine a fixed rate of tax credit applicable in the former, regardless of the tax rate in force in the latter.[25] Usually, tax sparing provisions are found only in double taxation treaties.[26]

III. PRICE DETERMINATION IN TRANSFER OF TECHNOLOGY TRANSACTIONS

Not only has the analysis of the effects of taxation of transfer of technology income been based on the isolated evaluation of the rules applicable in importing nations, regardless of their relation to the tax system applicable in the country of the transferor's residence, but also such analysis frequently has been developed without due consideration for the particular conditions in which the price for technology is determined in the relevant markets. This has led to oversimplifications[27] and to an incorrect evaluation of the effects that the different tax rates applied by host countries have on the international flow of technology.[28]

Many of the difficulties in transfer of technology transactions between developed and underdeveloped countries arise from basic assumptions in connection with the determination of the price of such transactions. Since the aforementioned analysis is generally geared toward the calculation of the benefits that each party derives from the transactions involved,[29] it is clear that the price

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[24] *See, e.g.*, Argentine Law 21.608 on Industrial Promotion (Argen. 1977).

[25] *See Tax Treatment, supra* note 5, at 17.

[26] *Id.*

[27] Zvijdwijk, *supra* note 1, at 562, mentions one such generalization: "It has been argued by the Western countries that if the terms of the transfer are too strict, the price of technology will go up and, as a result, the flow of technology from developed to developing countries will slow down or even come to a standstill." *Id.* at 564.

[28] Thus, for example, a lower tax rate is applied in Argentina to royalties and other remittances abroad connected with transfer of technology agreements (18%) than to normal profit remittances (45%). *See* Argentine Law 20.628, arts. 63,100 (Argen. 1973). This different treatment is generally justified as a means to promote technology imports. Although this position has been contended on economic grounds (*see* E. O'FARRELL, TRANSFERENCIA DE TECHNOLOGIA 51 (1978)), it deserves even closer scrutiny given the fact that the effects of the lower tax rate may be largely nullified by the tax credit provisions applicable in technology exporting countries.

[29] *See* Wang, *supra* note 1, at 811.

for which technology is sold or otherwise transferred to the recipient countries plays an essential role in the distribution of the overall economic gains arising from the international flow of technical knowledge. Thus, an inventor who, through a license agreement, transfers utilization rights over his invention to a foreign licensee is thereby expanding the productive possibilities of the recipient economy. If market forces are at work, this will result in a flow of profits to the licensee. The extent to which these profits are thereafter transferred to the licensor through the pertinent provisions of the license agreement will determine the distribution of such profits between the residents of the recipient country and those of the technology exporting nation.

Several factors must be taken into account when considering the forces at play in the international markets for technology. First, traded technology tends to be protected either by a legal[30] or a de facto[31] monopoly.[32] The power attached to this monopoly may vary from case to case, depending on the extent to which substitute technology is available. Second, the cost of entering into a new transfer of technology tends to be negligible, whether the total cost of the transfer is considered or the marginal cost of the revenue derived from such transfer is computed.[33] Finally, if adequate legal instruments are available and used,[34] a new transfer of

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[30] Legal protection may be afforded by patent and other industrial property statutes.

[31] De facto protection may arise from trade secrets and other forms of know-how not available to the general public. Obviously, the existence of this type of de facto monopoly depends on the legal rules governing trade secrets and other types of know-how, which vary substantially from country to country. *See generally* N. WISE, TRADE SECRET AND KNOW-HOW THROUGHOUT THE WORLD (1976).

[32] Transfer of technology may also involve knowledge that is freely available in the market and for which a situation resembling perfect competition prevails. This would be the case of transactions in connection with teaching and professional training. *See* UNCTAD, DIRECTRICES PARA EL ESTUDIO DE LA TRANSMISION DE TECHNOLOGIA A LOS PAISES EN DESARROLLO 16 (1972). Transactions involving freely available technology are only a small part of the total flow of knowledge between developed and developing nations for which a price is paid.

[33] This cost generally includes the value of blueprints, instructions, and other forms of written information that the transferor makes available to the transferee. Additional costs may be involved when the transferor's personnel are used for purposes of performing the transfer, *e.g.*, for training or demonstration purposes. This cost is usually charged as a separate item of the transaction.

[34] Restrictions on exports by a licensee to the markets where the licensor operates are illustrative. Several countries impose limitations on this type of provision. *See* Argentine Law 21.617, art 10 (c) (Argen. 1977); Brazilian Normative Act 15, arts. 2.5.2. (b)(i); 3.5.2. (c)(i); 4.5.2. (d)(i); 5.5.2. (d)(i) (Braz. 1975); Mexican Transfer of Technology Law, art. 7 (VII) (Mex. 1972); Andean Foreign Investment Code, arts. 20, 25 (a).

technology does not involve any opportunity or similar cost for the transferor.[35]

On the basis of these factors and other considerations to be stated below, the following mechanisms for price determination in transfer of technology transactions may be distinguished:

(a) The supplier of technology may act as a profit-maximizing monopolist, increasing the price of technology to the point where the marginal revenue derived from the increase is equal to zero.[36] Under this condition, the price of the technology is a function of the transferee's demand for it. This demand, in turn, is a function of the additional profits the transferee may derive from the use of the technology. Thus, if the transferor acts as a monopolist and the transferee is not in a position to act as a monopsonist,[37] the transferor will tend to obtain all the additional profits (before royalty payments) derived from the employment of the transferred technology.[38]

(b) The supplier of technology may determine its price on the basis of a fixed percentage royalty of the net sales value of the products manufactured or the services rendered with the transferred technology, regardless of the local or foreign taxes applicable. Although the economic justification for this pricing policy is not as clear as in case (a) above, it may be followed in practice because the international experience of the licensor has determined a certain royalty that reflects the additional profits to be derived from the use of the technology. Also, under some transfer of technology statutes, a maximum percentage rate is provided for royalty pay-

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[35] The disclosure of knowledge does not in any way limit the knowledge in the hands of the transferor. However, if certain precautions are not taken, the market value of the know-how may be reduced by the increased number of competing firms in which such information is available. Therefore, the nonexistence of opportunity costs requires a certain market division between the transferor and the transferee whereby the latter's additional competitiveness does not affect the former's profitable use of the technology.

[36] It is assumed that the marginal cost of transferring the technology is negligible. *See* notes 33-35 and accompanying text *supra*. The monopoly power of the transferor is obviously limited by the existence of competing technologies. This, however, does not alter the principle stated in the text, since it only implies that the transferee's demand curve will become more elastic.

[37] The transferee's bargaining position as sole possible buyer of the technology in a given market generally results from his monopolistic position in the industry in which the technology is applicable. This position may be a consequence of the local market's size or result from institutional factors, *e.g.*, restrictions on foreign investment in certain activities.

[38] This conclusion should be qualified by the fact that a minimum proportion of the profits accruing from the use of the new technology must be retained by the transferee as an inducement to his entering into the transaction.

ments, which includes the taxes paid by the transferee on such payments.[39]

(c) The transferor may act on the basis of a certain royalty rate, free of host country taxes, applied as a general pricing guideline in all its international license operations. Although it is difficult in economic theory to find a basis for this course of action, it is used with some frequency in international transfer of technology transactions. The desire to obtain a uniform rate of return from the different foreign licensees and its use as a bargaining tool in the continuous process of negotiations in which the supplier of technology may be involved both appear to play a substantial role in this approach.

(d) The pricing policy of a supplier of technology may be based on the obtainment of a uniform royalty rate, free of foreign or local taxes, in all its international operations. A negotiation policy such as that described in case (c) may supply a rationale for this mechanism. Also, the goal of maintaining a reasonable level of profits, in order not to attract additional competitors into the international technology market, may strengthen the motivation behind this pricing system.[40]

Although other pricing strategies may be detected, those described above cover the majority of international transfers of technology. In addition, they present a reasonable view of the market mechanisms that become applicable when taxes are imposed by the importing or exporting countries on the revenues accruing from such a transfer.

IV. EFFECT OF HOST COUNTRY TAXATION ON THE PRICE OF FOREIGN TECHNOLOGY

Concern with the allocation of the benefits resulting from international transfer of technology transactions has led to the enactment in several developing countries, especially in Latin America, of statutory schemes devised to improve the bargaining position of the local parties.[41] With similar objectives, negotiations have taken place within the framework of the United Nations directed

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[39] *See* Argentine Law 21.617, art. 10 (d); Cabanellas, *The Argentine Transfer of Technology Law: An Analysis and Commentary*, 3 HASTINGS INT'L & COMP. L. REV. 29, 79 (1979).

[40] For the analysis of this pricing policy, see P. SYLOS LABINI, OLIGOPOLY AND TECHNICAL PROGRESS (1962). Because the supply of technology does not bear as close a relationship to its price as the supply of other goods or services, the likelihood of the use of this mechanism in transfer of technology operations is limited.

[41] *See* note 3 *supra*.

toward the adoption of an international code of conduct on the transfer of technology.[42] Both of these legal mechanisms are directed toward the limitation or elimination of certain restrictive provisions included in transfer of technology agreements, thereby improving the contractual benefits derived by the transferee.[43] To a lesser extent, and generally by the use of vague formulations[44] coupled with a screening procedure without which the transaction is invalid under local law,[45] these schemes tend to lower the price paid by local parties for technology purchased from foreign sources.

An evaluation of transfer of technology statutes enacted in developing nations requires a more extensive analysis than that afforded herein. However, it should be mentioned that the extent to which such statutes improve, from the host nation's viewpoint, the distribution of benefits accruing from a transfer of technology transaction is limited by several factors. First, the elimination of certain contractual provisions devised to protect the transferor may impose upon him certain costs,[46] such that the total and marginal cost of supplying technology to a foreign firm may become significant, thereby determining a floor for the technology's price below which it will not be supplied under profit maximization principles.[47] Second, if limitations are imposed on the contractual powers of foreign licensors and on their capacity to appropriate through royalties the economic rent derived from the employment

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[42] *See* Pease Jeffries, *supra* note 1, at 309; Roffe, *supra* note 1, at 186; Zvijdwijk, *supra* note 1, at 562.

[43] The so called "restrictive provisions" included in transfer of technology regulations generally comprise contractual provisions limiting the transferee's rights to use the technology, to develop and have full rights to new connected technology, to sell his production, and to buy inputs. Apart from other rules limiting the transferor's interference in the transferee's enterprise, provisions tend to be included assuring that the transferee will profit fully from the acquired technology, *e.g.*, by protecting his rights to use such technology after termination of the agreement, and by holding the transferor liable for possible defects in the technology supplied. *See* sources mentioned in notes 1 & 3 *supra*. Some of the rules regarding restrictive provisions are similar to those included in U.S. and EEC antitrust laws and regulations. *See* Ebb, *Transfers of Foreign Technology in Latin America: The Birth of Antitrust Law*, 43 FORDHAM L. REV. 719 (1975).

[44] *E.g.*, the Group of 77's draft to the UNCTAD Code of Conduct on the Transfer of Technology provides that "the price charged or other consideration made for the technology transferred shall be fair and equitable and shall be no less favourable than the consideration usually charged by the supplying party or other technology suppliers for similar technologies under similar circumstances." See note 2 *supra*.

[45] *See, e.g.*, Argentine Law 21.617, arts. 10 (d), 24 (Argen. 1977).

[46] An example is reduced income in other markets due to competition from the technology importing country.

[47] *See* notes 33-35 and accompanying text *supra*.

of new technology in the recipient country,[48] it will be increasingly likely that the suppliers of know-how will attempt to enter that country's markets through direct investment;[49] through an association with local or multinational firms willing and able to pay, directly or indirectly, a price reflecting the economic rent;[50] or through exports to such markets.[51] Finally, it should be borne in mind that transfer of technology statutes tend to create an artificial bilateral monopoly situation—artificial in that the screening authorities may, by denying registration of a transaction, bar a foreign technology supplier's access to the local market, creating a loss of potential profits for the supplier, especially so due to the lack of opportunity costs involved in transfer of technology operations.[52] However, the possibility that more than one potential purchaser of technology exists in the importing country and the alternative channels of access to such country's markets closely restrict the effect of the artificially or legally created bilateral monopoly as far as the price determination process is concerned.

The relatively extensive use of transfer of technology regulation in developing countries contrasts vividly with their lack of a clear tax policy regarding transfer of technology transactions entered into with foreign suppliers, particularly in view of the shortcomings of such regulation and of the ever-widening use of taxation as a method to improve the bargaining position of developing countries in other fields.[53] This vacuum results, at least in part,

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[48] Because the marginal cost of supplying technology to new foreign markets is, given the adequate legal framework, negligible, the income derived from such markets is, in strict economic terms, rent. This fact is at the core of the technology pricing issue. *See* notes 33-35 and accompanying text *supra*.

[49] This may be limited by the local rules on foreign investment. *See, e.g.*, Law to Promote Mexican Investment and Regulate Foreign Investment (Mexico 1973).

[50] Although this type of scheme has also been limited by means of special provisions regulating transfer of technology transactions between foreign licensors and their local subsidiaries, the appropriation of the economic returns resulting from the use of technology in the host country through dividends or other types of consideration is highly difficult to control in the absence of extensive regulation of all transactions with foreign enterprises. *See, e.g.*, Andean Foreign Investment Code, art. 21.

[51] This may also be limited by tariffs on imported goods. Such tariffs, and the protection for local manufacturers resulting therefrom, tend to be higher when an item already produced in the importing country is concerned than when the technology involved implies the production of a new article, not competing with preexisting local supply.

[52] A supplier of technology barred from entering a particular market may not recoup such foregone opportunity through transactions in other markets, since these are, by definition, independent of the first market. Obviously, as is mentioned in the text, a direct form of entering into a particular national market may be more or less perfectly substituted by other types of transactions.

[53] *See* Wang, *supra* note 1, at 811.

from the view that an increased rate of taxation applied by the technology importing countries will result in a proportionally higher cost to be borne by the local purchasers of know-how. It has been presumed that increased taxes would be reflected by the technology purchase price; thus, the local taxation policy would only allocate income between the transferee and the host country's tax authority, being sterile as a means of improving such country's terms of negotiation.[54] Furthermore, since the convenience of importing foreign technology has been perceived on different grounds by many developing countries, their governments have tended to impose a lower tax rate for transfer of technology income than for current profits distributed to foreign residents.[55]

The assumptions upon which these policy formulations are based deserve closer consideration. To clarify an issue that includes both legal and economic aspects, it is helpful to observe that the lower tax rate for a foreign technology transferor's income frequently has been sustained on the basis that, following general income tax principles, withholding should apply only on net income and not on gross receipts.[56] Because it is practically impossible to determine the cost associated with the "production" of the imported know-how in the country of origin, the net income policy is implemented by a legal presumption as to the proportion between net and gross revenues in transfer of technology transactions.[57] Avoiding at this stage any ethical consideration about who should be entitled to tax the income accruing from inventions and technical knowledge, several inconsistencies may be found in the net income principle as applied in the manner described above. Since transfer of technology operations to foreign countries, particularly developing ones, generally do not involve any significant additional costs,[58] the income received from such operations results in a net increase in the total earnings of the transferor.[59] It

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[54] *See, e.g.*, Official Commentary to Argentine Law 21.481 (Argen. 1976), which states: Regarding income paid to foreign beneficiaries as consideration for contract performances ruled by the transfer of technology law, the project provides that the presumptive net income from Argentine sources is 40% of the amount paid. This provision intends to make it possible for local enterprises to have access to foreign technology of interest to the country, since in practice it is the local buyer and not the foreign seller who finally pays the tax.

[55] *See Differences in Tax Treatment between Local and Foreign Investors and Effects of International Treaties*, 63B CAHIERS DE DROIT FISCAL INTERNATIONAL 34 (1978).

[56] *See Tax Treatment*, *supra* note 5, at 12.

[57] *See* note 55 *supra*.

[58] *See* notes 33-35 and accompanying text *supra*.

[59] Because entering into new transactions may involve certain transaction costs, *e.g.*,

may be argued that the production of new technology implies substantial research and development costs, which reduce the innovator's net income. However, these costs are incurred whether the technology is used or transferred or remains as mere theory; no additional costs are incurred by the new transfer, and this results in the aforementioned net increase in total earnings.[60]

Another argument against treating foreign licensors' income as net taxable earnings is that research and development costs are necessary for the technology that creates income to exist.[61] A causal relation between this income and the creation of the technology is supposed that does not in fact exist, particularly from the developing countries' point of view. It is unusual that technology will be developed with consideration of such countries' markets. If the revenue from these markets were determinant, any additional taxation reducing revenue would diminish the marginal income expected from the marginal cost of research and development, thereby reducing the latter. However, this type of analysis appears unrealistic in view of the markets to which most new technologies are geared. Furthermore, in view of the net income analysis made above, the answer to the motivation of research issue lies in the rate of taxation and not in the way research costs are set off against different countries' income.[62]

Finally, the position in favor of setting off research and development costs against the technology transferor's income is not really one against international double taxation but in favor of "double non-taxation." Given the fact that the costs generally may be treated as deductible expenses in the country where the technology is developed,[63] any additional deduction abroad would result in an artificial reduction of taxable income. Summarizing the discussion regarding the issue of deductibility of research and

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legal fees, these costs reduce the net income derived from such transactions. Frequently, however, they deserve separate treatment in the transfer of technology agreements, thus precluding any need for special tax provisions.

[60] The income derived from foreign sources may in fact help reduce the overall losses resulting from a particular technology development project. This does not alter the fact that such income is net, unless the aforementioned losses could not be set off against other taxable revenues of the same taxpayer.

[61] *See Tax Treatment, supra* note 5, at 12.

[62] Another underlying factor in this respect is that any additional motivation technology producers may derive from a lower tax rate in a given technology importing country would not directly benefit such country but all the areas where the technology may be used. Thus, there is a gap between "international social benefit" and "individual country cost," which can only be overcome by the international harmonization of tax policies.

[63] *See, e.g.*, I.R.C. §§162, 174.

development costs for purposes of technology importing countries' income tax, the position in favor of such a deduction may be sustained only on the basis of an implicit ethical or value judgment as to which taxing authority should bear the cost resulting from the deduction of expenses.

Another line of thought regarding the economic effects of host country taxation of transfer of technology income is centered upon the distortion of the transferees' cost structure by the artificial increase, through taxation, of the price they must pay for foreign inventions and know-how. Pursuant to this increase, certain technologies that otherwise would have been employed will remain unused and the consumption of products involving foreign technology will be diminished as a consequence of the increase of their price. Even though these distortions tend to hamper the maximization of the host country's productivity and welfare, their evaluation should be qualified by the fact that other tax measures affect the price of other elements of a country's economy, thereby making it unlikely that the non-taxation of foreign technology will lead to the second-best welfare maximizing structure of the host country's economy. Thus, *e.g.*, if the price of imported goods is raised artificially through import tariffs, there will be a state-created motivation to buy additional foreign technology for the production of the goods locally. An increase in the price of such technology would only set off any incentive. In addition to these economic considerations, any lower tax rate for transfer of technology payments *vis-a-vis* the rate applied to profits derived from foreign investments creates a tendency toward couching the latter in the form of transfer of technology transactions. Although several countries have enacted legislation to prevent this type of tax avoidance,[64] a certain number of window-dressing transactions always take place.[65]

The most debatable and complex aspect of the argument against host country taxation at rates similar to those applicable to foreign investment profits[66] is the hypothesis that a higher rate of local taxation will automatically bear on the purchaser of technology. The analysis of this assumption requires a close study of the total effects of local taxation, taking into account the incidence

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[64] *See, e.g.*, Argentine Law 21.617, art. 9 (Argen. 1977); Andean Foreign Investment Code, art. 21.

[65] *E.g.*, cross licensing between two multinational enterprises.

[66] *See* notes 54 & 55 and accompanying text *supra*.

of the technology exporting countries' tax systems[67] and of the price determination mechanism in transfer of technology transactions.[68] Each combination of an exporting country's tax system and a price determination process gives ground for a separate evaluation of the effects of the importing country's tax policy. Therefore, the following cases should be distinguished.

(a) *Tax credit countries*

An increase of the host countries' tax rate on transfer of technology income of residents of countries with a tax credit system will result in a flow of tax revenues from the exporting to the importing country. As long as the tax rate in the latter is below or equal to the rate in the former, the only result of the increase would be a transfer of revenue to the host country's tax authority, not creating any incentive to change the price of the transactions under consideration.[69] If, however, the free of local taxes strategy were followed, the transaction's price would be increased, and the transferor would profit from the additional tax credit.

(b) *Countries that do not tax income derived from exported technology*[70]

If the transferor acts as a direct profit maximizer[71] or if he follows the fixed percentage royalty charge strategy,[72] the higher host country taxes will not be passed on to the transferee and will bear on the transferor's net income.[73] If the other pricing strategies[74] are followed, the additional taxation will result in a corresponding higher price for the imported technology.

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[67] See part II *supra*.

[68] See part III *supra*.

[69] Certain qualifications may have to be introduced to this statement on the basis of the particular provisions of the tax-credit country. *See, e.g.*, I.R.C. §904 introducing an overall limitation of the foreign tax credit determined by multiplying the taxpayer's total U.S. tax liability by a fraction including the taxpayer's total foreign source income as the numerator and his total taxable income as the denominator.

[70] *See* note 18 and accompanying text *supra*.

[71] *See* notes 36-38 and accompanying text *supra*.

[72] *See* note 39 and accompanying text *supra*.

[73] This result is self-evident when the fixed percentage royalty charge strategy is considered. In the case of direct profit maximization, the price of the technology is a function of the transferee's demand, and since this remains unaltered by the withholding tax imposed on the transferor's income, the price remains unchanged. It may be added that this result follows from the fact that a proportional withholding tax does not impose any marginal costs on the transferor and that such tax implies that part of the latter's economic rent is appropriated by the taxing authority.

[74] *See* part II §§ (c) and (d)*supra*.

(c) *Countries that treat taxes paid abroad as a deductible expense*[75]

If the transferor acts as a direct profit maximizer,[76] the price charged to the transferee remains unchanged since neither the demand schedule nor the marginal cost is altered.[77] Therefore, the transferor's net income is diminished because the deduction of the host country's additional taxes in his country of residence will only entitle him to a tax reduction equivalent to a fraction of such additional taxes. The technology importing country's tax revenue increases, and the exporting country's tax receipts are reduced. If the transferor follows the fixed percentage royalty strategy,[78] the agreed price should remain unchanged, and the effects would be similar to those under the direct profit maximization mechanism. If the seller of technology applies a pricing approach based on a fixed royalty rate, free of host country taxes,[79] an increase in the latter will result in a higher price payable by the purchaser together with a higher income for the importing country's taxing authority, a lower income for the exporting country's government,[80] and a higher net profit for the transferor.[81] Finally, if the supplier of technology follows a pricing policy based on the obtainment of a uniform royalty rate, free of all taxes,[82] an increase in the host country's tax rate would have effects similar to those mentioned in the previous case, with the difference that the income for the exporting country's government and for the supplier would remain unchanged.[83]

(d) *Countries that tax the income derived from technology exports at a lower rate than that applicable to other taxable income*[84]

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[75] *See* notes 19 & 20 and accompanying text *supra*.

[76] *See* notes 36 & 38 and accompanying text *supra*.

[77] *See* note 73 *supra*.

[78] *See* note 39 and accompanying text *supra*.

[79] *See* part III § (c) *supra*.

[80] This is because the transferor would have higher deductible expenses.

[81] The transferor would receive the same amount free of host country taxes as before, but would have a lower tax liability in his home country.

[82] *See* part III § (d) *supra*.

[83] The result as to the exporting country's tax receipts follows from the hypothesis that under a deduction of foreign taxes system, taxes are applied to the exporter's final net income grossed up by the exporting country's tax. Since, by definition of the case, the final net income must remain unchanged and the tax rate is also unchanged, the grossing up must also be constant.

[84] *See* note 21 *supra*.

If the transferor acts as a direct profit maximizer[85] or if he follows the fixed percentage royalty charge strategy,[86] the higher host country taxes will not be passed on to the transferee and will bear on the transferor's net income and, consequently, on the exporting country's tax income. If the seller of technology follows a pricing policy based on a fixed royalty rate, free of host country taxes,[87] an increase in the host country will result in a higher price payable by the purchaser, a higher income for the importing country's taxing authority, and an unchanged income for the exporting country's government[88] and for the transferor. The same result would ensue if the seller followed the free of all taxes pricing mechanism.[89]

(e) *Countries that apply the tax sparing treatment*[90]

The analysis of this case requires a distinction as to the importing country's domestic taxation policy. The overall results will vary depending on the degree to which the importing country grants taxing incentives. For purposes of simplification, suppose that the incentive or promotional margin remains constant, *i.e.*, that the normal tax rate and that applied to the taxpayers granted special benefits, among which the technology transferor under consideration will be included, increase to the same extent.[91] This hypothesis leads to results similar to those that follow from an increase in the host country's taxes when the tax credit system is applied in the technology exporting country.[92] This is so since the amount withheld in the host country and the sum credited in the importing country increase in a parallel fashion. If the increase in the normal tax rate is coupled with an augmented spared tax margin, *e.g.*, by maintaining the effective withholding rate unchanged, the pricing policy distinction has to be introduced. If the transferor acts as a direct profit maximizer,[93]

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[85] *See* notes 36-38 and accompanying text *supra*.

[86] *See* note 39 and accompanying text *supra*.

[87] *See* part III § (c) *supra*.

[88] This is because the net income derived from the host country remains, by definition of pricing strategy, unchanged.

[89] *See* part III § (d) and note 83 *supra*.

[90] *See* notes 23-26 and accompanying text *supra*.

[91] Where a fixed rate of tax credit is available, regardless of the tax rate in effect in the technology importing country, this result would only be possible through an increase in the fixed rate of tax credit. *See* note 25 and accompanying text *supra*.

[92] *See* part IV § (a) *supra*.

[93] *See* notes 36-38 and accompanying text *supra*.

or if he follows the fixed percentage royalty charge strategy,[94] the agreed price will tend to remain the same, while the transferor will have an increased tax credit to offset against his domestic tax liability. Under such circumstances, tax receipts will remain unchanged in the host country and will decrease in the technology exporting country. If the supplier of technology follows a pricing policy based on a fixed royalty rate, free of host country taxes,[95] he will profit from the additional tax credit, and consequently the exporting country's tax revenue will decrease. If the seller followed the free of all taxes pricing system,[96] the additional tax credit, generated by the increased spared tax, would result in a lower price payable by the transferee and, consequently, in a lower tax base upon which the host country's withholding tax would apply.

V. SOME EFFECTS OF TAX TREATIES

Even though the institutional framework of double taxation treaties and other similar international agreements is too broad to be dealt with through the usual tools of economic analysis,[97] some of the effects of certain provisions generally included in such treaties are evaluated below.

Regarding tax sparing provisions, it follows from the analysis of the change in such provisions[98] that the spared margin will generally accrue in favor of the supplier of technology and work to the detriment of the exporting country's tax revenue, except when the net of all taxes pricing system is followed.[99] This result explains to some extent the technology supplying countries' reluctance to grant tax sparing treatment.

When, as part of a double taxation arrangement, the exporting country agrees to grant tax credit treatment to the withholding effected in the country to which technology is transferred,[100] it is clear that tax receipts will be transferred to the host country's tax authority from the licensor's. However, in terms of defining the price relationship between the transferor and the transferee, the former's pricing strategy again enters into play. If the transferor

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[94] *See* note 39 and accompanying text *supra*.

[95] *See* part III § (c) *supra*.

[96] *See* part III § (d) *supra*.

[97] *E.g.*, it is incorrect to reach policy conclusions about a particular treaty provisions if consideration of the concessions granted in return for such provision are not addressed.

[98] *See* text accompanying notes 93-96 *supra*.

[99] *See* text accompanying note 96 *supra*.

[100] *See Tax Treatment*, *supra* note 5, at 16.

acts as a direct profit maximizer[101] or if he follows the fixed percentage royalty charge strategy,[102] the limitation to double taxation through the tax credit mechanism will not influence the price, and its net effect will be a reduction in the transferor's domestic tax liability. If a royalty rate, free of host country taxes,[103] is used, the fact that the latter remain unchanged will also maintain the transactions' price at a constant, and the advantages of the tax credit system will accrue in the supplier's favor. Finally, if the seller follows the free of all taxes pricing systems,[104] the tax credit results in a lower price payable by the transferee,[105] while the transferor's net receipts remain unchanged. Thus, the effects of tax credit provisions would be, prima facie, similar to those of tax sparing provisions,[106] creating the possibility, however, that the host country, through the increase of its withholding tax level to a rate similar to that applicable in the transferor's country, could obtain the favorable results considered above.[107]

The analysis becomes more complex when treaty provisions limiting the rate applicable in the technology importing country are considered.[108] If the maximum tax rate is equal to the one already in effect, the immediate consequences of the double taxation provision would be those ensuing from the tax credit mechanism.[109] If the maximum tax rate allows for increases in the host country's withholding level, the situation would fall within that described previously for such cases of rate increases.[110] If the ceiling of the host country's tax rate forces such a rate down, whether immediately or in the long run,[111] the effects are as follows. a) If the transferor acts as a direct profit maximizer[112] or if he follows the

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[101] *See* notes 36-38 and accompanying text *supra*.

[102] *See* note 39 and accompanying text *supra*.

[103] *See* part III § (c) *supra*.

[104] *See* part III § (d) *supra*.

[105] If the host country withholding tax remains unchanged, this would reduce its tax income from this type of transaction.

[106] *See* text accompanying notes 98 & 99 *supra*.

[107] *See* part IV § (a) *supra*.

[108] This is a concession frequently required from the host country when the technology exporting country agrees to recognize tax credit treatment, since otherwise such treatment could result in the importing country being the only one to tax the revenues issuing from transfer of technology transactions.

[109] *See* text accompanying notes 100-105 *supra*.

[110] *See* note 107 and accompanying text *supra*.

[111] While not forcing an immediate reduction in the withholding rate, a treaty ceiling may thwart future increases, which a change in economic conditions may make desirable from the host country's point of view.

[112] *See* notes 36-38 and accompanying text *supra*.

fixed percentage royalty charge strategy,[113] the transaction price remains unchanged, and the importing country's tax receipts fall as do those of the licensor's government; consequently, the licensor is the party to profit from the new tax rules. b) If the free of host country taxes royalty rate[114] is applied, the price payable by the transferee falls while the transferor profits to the extent his domestic tax liability decreases as a function of the new tax credit provisions. Both taxing authorities' receipts fall. c) If the price is fixed as a certain amount free of all taxes,[115] the transferor's receipts remain unchanged, tax revenue falls in both jurisdictions, and the price payable by the transferee is diminished as a direct function of such revenue reduction. Finally, if as advocated by some sources,[116] tax treaty provisions were included denying the licensee's country the power to tax transfer of technology income, the following results would ensue if such a tax were imposed before the treaty provision came into effect. If the transferor acts as a direct profit maximizer[117] or if he follows the fixed percentage royalty charge policy,[118] the agreed price remains constant and the transferor profits to the extent host country taxes are eliminated. If the supplier follows the free of host country taxes pricing method,[119] the transferee gets the full benefits of said country's loss of tax revenues; and, assuming that the technology exporting country's tax is not altered, the same result would ensue if the free of all taxes policy were followed by the licensor.[120]

VI. CONCLUSION

It is evident from the analysis made throughout this article, and particularly in parts IV and V, that the evaluation of host country taxation of transfer of technology income involves numerous and complex aspects, both legal and economic. Therefore, an unqualified rule regarding the convenience of a given tax policy generally will be subject to substantial shortcomings. Previous consideration of the structure of technology markets,[121] of the legal framework ap-

[113] *See* note 39 and accompanying text *supra*.

[114] *See* part III § (c) *supra*.

[115] *See* part III § (d) *supra*.

[116] *See, e.g.*, OECD COMMITTEE ON FISCAL AFFAIRS, MODEL DOUBLE TAXATION CONVENTION ON INCOME AND ON CAPITAL, art. 12.

[117] *See* notes 36-38 and accompanying text *supra*.

[118] *See* note 39 and accompanying text *supra*.

[119] *See* part III § (c) *supra*.

[120] *See* part III § (d) *supra*.

[121] *See* part III *supra*.

plicable in technology exporting countries to income derived by resident licensors,[122] and of the host country regulations controlling transfer of technology agreements,[123] is essential for a rational structuring of the technology importing countries' tax policy.

Notwithstanding the preceding caveat against generalizations, they may become necessary from a practical standpoint because of legal and institutional restrictions against a separate tax treatment based on factors such as the tax rules effective in the country where technology originates. Thus, a technology importing country could enact different tax provisions depending on whether transfer of technology income is paid to a country with a tax credit system or which treats foreign taxes as a deductible expense.[124] This approach, however, could result in retaliations from the technology exporting countries[125] and could be subject to constitutional objections, as unduly discriminating, under local law.[126] Hence, if a general rule regarding taxation of transfer of technology income has to be introduced by an importing country, its effects would vary depending on the framework in which its technology trade operates.

Nevertheless, the fact that a large percentage of internationally traded technology originates in countries applying the tax credit system[127] gives special relevance to the effects of the host nation's tax rules applicable to income remitted to such countries. In most cases,[128] the increase of the importing country tax rates to a level similar to that prevailing in technology exporting jurisdictions would result in a net transfer of tax revenues to the country where the technology is used.[129] Also, even when the technology exporting country does not apply the tax credit system,[130] an in-

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[122] *See* part II *supra*.

[123] *See* note 39 and accompanying text *supra*.

[124] *See* part II §§ (b) and (d) *supra*. *E.g.*, it could be provided that the host country tax shall be equivalent to the rate applicable in tax credit countries.

[125] *E.g.*, non-recognition of the tax credit if the host country rates exceed a certain limit.

[126] To the authors' knowledge, this matter has not been subject to judicial evaluation in the principal developing nations. Therefore, it is only possible to state that under several constitutions of these nations, and their judicial construction, arguments could be found against the discrimination mentioned in the text, notwithstanding the economic foundations which sustain it. *See, e.g.*, Argentine Constitution, art. 20.

[127] *See Tax Treatment*, *supra* note 5, at 4-6.

[128] *See* part IV § (a) *supra*.

[129] It should be noted that the only case in which such a result is qualified depends on the existence of a "free of local taxes" pricing policy by the licensor, which in its turn depends upon the local regulations affecting transfer of technology agreements. *See* note 69 and accompanying text *supra*. *See also* note 3 *supra*.

[130] *See* part II *supra*.

crease of the host country's tax rate to a level compatible with that applicable to other types of foreign income will result either in a transfer of income to the local taxing authority from the exporting country's government and the licensor or in an increase in the host country's revenues combined with a higher cost payable by the transferee.[131] Although in the first case it is clear that the higher rate of taxation improves the host country's terms of trade, in the second such terms remain at least unaltered.[132] It could be argued that such additional cost would introduce an artificial obstacle to the use of foreign technology, thus diminishing the overall efficiency of the recipient country's economy and the effectiveness of its resource allocation mechanisms. However, not only would this shortcoming likely be more than set off by the increase in the host country's tax revenue, but also the unification of the recipient country's tax structure probably would lead to an improvement rather than to a deterioration of resource allocation.[133]

The fact that a *ceteris paribus* analysis of the effects of higher tax rates in technology importing countries leads to conclusions generally favorable to such an increase, within the limits mentioned above,[134] should not lead one to believe that the framework within which such analysis was made will actually remain unmodified as a result of a change in the tax treatment applied in technology importing countries. If the tax credit provisions lead to an absorption of the tax revenue resulting from transfer of technology income by the host countries, this will stimulate the amendment of such provisions. If successive reactions of this type lead to an overall tax rate on international transfer of technology income higher than that applicable to other transactions, an artificial tendency to replace the former with the latter will ensue, damaging all the parties involved.[135] Although part of this danger

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[131] *See* part IV §§ (b)-(d) *supra*.

[132] In some cases, there is a direct transfer of income from the transferee to the host country's tax authority. *See, e.g.*, note 74 and accompanying text *supra*. In others, the higher tax income obtained by the importing country's government is reflected by a drop in the transferor's income or the exporting country's tax receipts. *See, e.g.*, part IV § c *supra*.

[133] *See* text accompanying notes 64 & 65 *supra*.

[134] *See* text accompanying note 129 *supra*.

[135] *E.g.*, transfer of technology will be replaced by direct foreign investments, and if that were not possible, by the import of foreign goods. If these alternatives are not possible, transfer of technology may not take place at all, particularly if it involves some kind of cost for the transferor, *e.g.*, risk of foreign competition in international markets. *See* text accompanying notes 46-52 *supra*.

may be avoided by purely self-interested motives on the part of the more developed nations,[136] the potential frustrations, albeit limited, to transfer of technology flows becomes particularly damaging from the developing countries' position. This is not surprising in view of the fact that a large percentage of these countries' technological bases originates abroad.

Thus, the analysis of host country taxation of transfer of technology transactions not only shows the direct effects of such taxation, but also the need for international harmonization of taxing policies. The study of the possible effects of double taxation treaties in this area indicates,[137] however, that developing countries should follow a cautious approach in the negotiation of such treaties.

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[136] Wang, *supra* note 1, at 809, states that "in the terms of a nationalistic calculus, the outflow of foreign investment is socially unproductive unless the foreign rate of return after foreign taxes exceeds the domestic rate of return on investment before taxes." *Id.* at 813. Lack of opportunity costs in transfer of technology transactions invalidates this type of analysis in that area. Any additional transfer generating income to residents of the exporting country would improve that country's economic welfare. This clearly strengthens the importing country's bargaining position but leaves a position closely resembling a bilateral monopoly and therefore not subject to precise determination under traditional economic analysis. An example of the potential "tax war" consequences that may arise in the context of transfer of technology income taxation is found in the treatment as deductible expense of the research and development expenditures connected with technology used in several countries. A deduction of such expenditures in one country will tend to benefit all its users, even in foreign jurisdictions, at the cost of the taxing authority admitting such deduction. *See Tax Treatment*, *supra* note 5, at 12; Wang, *supra* note 1, at 813; *see also* text accompanying notes 56-63 *supra*.

[137] *See* part V *supra*.

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