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### Protection of U.S. Patent Rights in Developing Countries: U.S. Efforts to Enforce Pharmaceutical Patents in Thailand

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# Protection of U.S. Patent Rights in Developing Countries: U.S. Efforts To Enforce Pharmaceutical Patents in Thailand

## I. INTRODUCTION

On April 26, 1991, Carla Hills, the United States Trade Representative ("USTR"), cited India, the People's Republic of China, and Thailand for their failure to respect U.S. intellectual property<sup>1</sup> as required under "Special 301."<sup>2</sup> These countries were, therefore, potentially subject to trade sanctions.<sup>3</sup> This was the first designation of "priority foreign countries"<sup>4</sup> under Special 301, and may have resulted from pressure both from Congress and trade associations. The potential for increased profits to U.S. businesses has motivated attempts to protect U.S. intellectual property rights. When foreign countries use U.S. intellectual property without compensating U.S. owners, the United States may either lose sales or be deprived of royalties at a time when increased foreign trade is vital to the U.S. economy.<sup>5</sup> In addition, there is a widespread belief that uniform enforcement of intellectual property rights would benefit the United States because such enforcement can stimulate economic development in under-developed countries.<sup>6</sup>

This Comment explores concepts of intellectual property held by the Western industrial nations as typified by the United States. These concepts have led to the recent efforts by the United States to enforce international recognition of and respect for U.S. intellectual property rights to improve its position in the area of world trade. This Comment notes the general opposition of the Third World countries to the Western positions on intellectual property.

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1. For a discussion of intellectual property as it applies to this Comment, see *infra* notes 7-11 and accompanying text.

2. See Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, §§ 1301, 1303, 102 Stat. 1107 (codified as amended in scattered sections of 19 U.S.C.) [hereinafter 1988 Trade Bill]. See also *infra* notes 122-25 and accompanying text.

3. See *infra* note 142 and accompanying text.

4. See *infra* note 126 and accompanying text.

5. See *infra* notes 31-37 and accompanying text.

6. See *infra* notes 12-18 and accompanying text.

The recent attempt to force Thailand to adopt patent protection for pharmaceuticals demonstrates many of the problems encountered by the United States in its efforts to enhance intellectual property protection. This Comment will consider the possible costs and benefits of patent protection for a developing country like Thailand. The Comment will argue that the policies justifying the protection of patents in developed countries are not necessarily applicable to developing countries. The level of economic development of a country may determine the type (if any) of intellectual property protection that is profitable for a country to grant. In this light, several alternatives will be suggested that would allow the United States to attain its goals of increased foreign trade and enhanced worldwide intellectual property protection without impeding the economic development of countries like Thailand.

## II. INTELLECTUAL PROPERTY LAW

### A. *What Is Intellectual Property?*

Intellectual property is intangible property that is a product of human creativity, such as books, films, or inventions. At one time, legal protection was afforded only to tangible products of manual labor. More recently, legal protection for intangible products of mental labor has developed. Intellectual property has real economic value and may be sold directly as a product, as in the case of an invention, or may be used to enhance the quality or reduce the price of a product that is currently on the open market. In the context of international trade, intellectual property normally is thought to encompass trade secrets, trademarks, copyrights, and patents.<sup>7</sup>

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7. For a general discussion of intellectual property in the international setting, see Frank Emmert, *Intellectual Property in the Uruguay Round—Negotiating Strategies of the Western Industrialized Countries*, 11 MICH. J. INT'L L. 1317, 1323-28 (1990). See also STEPHEN P. LADAS, PATENTS, TRADEMARKS, AND RELATED RIGHTS, NATIONAL AND INTERNATIONAL PROTECTION §§ 247-48, 320-22 (1975) [hereinafter PATENTS, TRADEMARKS, AND RELATED RIGHTS]; Thomas J. Field, Jr., *Pharmaceuticals and Intellectual Property: Meeting Needs Throughout the World*, 31 IDEA J.L. & TECH. 3 (1990).

A patent<sup>8</sup> represents a government grant of a "monopoly"<sup>9</sup> of limited duration<sup>10</sup> on the use of an invention or discovery. Although patent laws vary from country to country, if an invention is novel, useful, and not obvious, and if the invention fits within the statutory categories of protectable inventions, it is generally patentable.<sup>11</sup> Much of the controversy in international patent law surrounds variations, from country to country, in patentable categories. Because the owner of a patent can charge a royalty for the use of the patented invention, if a country refuses to recognize a patentable category, such a refusal will necessarily affect the cost of using a given technology in that country.

### B. *Western Position on Patent Protection Versus the Position of Developing Nations*

Western countries generally believe that a patent system provides the best overall incentive to encourage invention.<sup>12</sup> Although this assertion is difficult to prove,<sup>13</sup> it forms the basis for the exten-

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8. For a general explanation of patent law, see ARTHUR R. MILLER & MICHAEL H. DAVIS, *INTELLECTUAL PROPERTY, PATENTS, TRADEMARKS AND COPYRIGHT* (2d ed. 1990).

9. Strictly speaking, a patent is not always a monopoly. Many countries grant a right to exclude others from using an invention. "Every patent shall contain . . . a grant . . . of the right to exclude others from making, using, or selling the invention throughout the United States." 35 U.S.C. § 154 (1988). A true monopoly would grant the exclusive right to use an invention. In many cases, however, the right to exclude is tantamount to a monopoly.

10. The term of a patent is usually 15 to 20 years. The period in the United States is 17 years. See 35 U.S.C. § 154 (1988).

11. "Whoever invents or discovers any new and useful process, machine, or composition of matter, or any new and useful improvement thereof, may obtain a patent thereof." 35 U.S.C. § 101 (1988).

12. See A. Samuel Oddi, *The International Patent System and Third World Development: Reality or Myth?*, 1987 DUKE L.J. 831, 837-38. Inventors benefit from grants of a temporary monopoly on an invention. Society benefits immediately through the economic stimulation caused by the use of the invention and through the public disclosure of the working of the invention. After the patent lapses, the invention is in the public domain. Even before the lapse of the patent, the knowledge provided by the disclosure stimulates additional invention by members of the public. There are two ways of viewing the relationship between the public and the inventor. Some commentators consider a patent as a contract where the monopoly is given to the inventor and, in return, the inventor gives the invention to the public. Another view is that a patent is simply a direct reward for an invention. See generally MILLER & DAVIS, *supra* note 8.

13. See generally MILLER & DAVIS, *supra* note 8. Many experts agree, however, that where the cost of invention is extremely high as with most pharmaceutical inventions, continued innovation requires a patent system. See Field, *supra* note 7, at 3-4. This Comment assumes that a patent system is the best incentive for invention. The real issue, then, becomes whether the benefits of such a system are outweighed by the costs.

sive patent systems in Western industrialized countries ("WICs"),<sup>14</sup> including the United States. This implicitly assumes that all economies necessarily benefit from an increased number of inventions.<sup>15</sup> When an invention is granted patent protection, investors are more willing to invest because profits are higher if competition is reduced.<sup>16</sup> WICs also believe that patents encourage the development or transfer of the technology necessary to utilize the patent.<sup>17</sup> Thus, according to the Western view, a system of patent laws can lead to economic development despite the cost of the royalties.

While the U.S. Government and businesses subscribe to the views of the majority of other WICs and contend that all countries would benefit from granting and enforcing patents on pharmaceuticals,<sup>18</sup> many countries, including most Third World nations, do not grant patents for inventions in agriculture and medicine.<sup>19</sup> As discussed below,<sup>20</sup> these countries may fear drastic price increases that would result from paying royalties on patented pharmaceutical and agricultural technology as well as a loss of control over technology that is vital to national development. The Thai Patent Act, before its recent revisions, served as a typical example of the limitations developing countries place on their patent laws.

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14. See Oddi, *supra* note 12, at 837-38.

15. The developed economies of WICs are "invention-bound." They require invention to stimulate continued economic growth. Consider the economic impact of such technological advances as VCRs, faxes, and cellular telephones. A developing economy may still be trying to implement "old" technology and would be ill-advised to pay the premium prices of "new" or patented technology. *Id.*

16. *Id.* at 848.

17. *Id.*

18. See generally Gerald J. Mossinghoff, *Research-Based Pharmaceutical Companies: The Need for Improved Patent Protection Worldwide*, 2 J.L. & TECH. 307 (1987); see also Field, *supra* note 7.

19. For example, Norway prohibits the patenting of pharmaceuticals and foodstuffs; India refuses patents for agricultural and horticultural inventions as well as for food and medicine; China will not grant patents for medical diagnostics, pharmaceuticals, foods, beverages, plants, or animals. See PATENTS THROUGHOUT THE WORLD N-40, I-6, C-20 (Alan J. Jacob ed., 4th ed. 1991). The recent agreement between the United States and China should lead to changes in the Chinese patent laws. See Jim Mann, *U.S. and China Avert Trade War over Copyrights*, L.A. TIMES, Jan. 17, 1992, at D1.

20. See *infra* notes 75-80 and accompanying text.

### C. Thailand's Patent Act

The Thai Patent Act ("Act"),<sup>21</sup> originally passed in 1979, is the primary source of patent protection in Thailand. On February 27, 1992, the Thai Legislative Assembly passed a revision of the Act.<sup>22</sup> The revision was intended to satisfy U.S. objections to the 1979 Act.<sup>23</sup>

The United States objected to several provisions of the Act as originally ratified. The strongest complaint of U.S. patent owners was that the 1979 Act excluded pharmaceutical, agricultural, and biological products from patent protection, thereby causing a significant loss of revenue.<sup>24</sup> U.S. owners also complained that fifteen years was an insufficient term for patent protection.<sup>25</sup> Finally, the 1979 Act provided that a patent must be worked<sup>26</sup> in Thailand; otherwise, the patent would be subject to either a compulsory license<sup>27</sup> or revocation.<sup>28</sup> Such licensing requirements are an ac-

21. Thailand, the Patent Act B.E. 2522 A.D. 1979, reprinted in 82 PAT. & TRADE-MARK REV. 278-86, 328-38, 371-79 (1984) [hereinafter Thai Patent Act].

22. Peter Ungphakorn, *Thais Pass Bill After American Patent Demands*, FIN. TIMES, Feb. 28, 1992, World Trade News, at 3.

23. For a discussion of the revision to the Thai Patent Act, see *infra* notes 170-92.

24. See Thai Patent Act, *supra* note 21, § 9. "Inventions of the following kinds are not patentable:

(1) foods, beverages, medicines, or medical ingredients;

(2) machinery used directly for agriculture;

(3) animals, plants or biological processes for the production of animals or plants . . . ." *Id.* The Pharmaceutical Manufacturers Association petitioned for a Special 301 action against Thailand due to Thailand's failure to grant patents on pharmaceuticals. See *infra* note 144 and accompanying text.

25. See Thai Patent Act, *supra* note 21, § 35. "An invention patent shall be effective for a period of fifteen years from the date of the patent application." *Id.*

26. The act of "working" a patent is a term of art in patent law that means to utilize or exploit a patent. In the context of pharmaceutical patents, it means using the patented technology to manufacture the drug within the country that grants the patent. See PATENTS, TRADEMARKS, AND RELATED RIGHTS, *supra* note 7, at 425-27.

27. See Thai Patent Act, *supra* note 21, § 46.

After the expiration of a period of three years from the issue of a patent, other persons may apply to use the rights under that patent . . . if it is apparent that . . . :

(1) there is no manufacturing or production of the product . . . or no use of the product . . . under the patent, within the Kingdom, for no appropriate reason; or

(2) there is no sale of the product . . . or the product is being sold at unreasonably high prices or . . . not being adequately supplied to meet public demand . . . for no justifiable reason.

*Id.*

28. See Thai Patent Act, *supra* note 21, § 55.

After the expiration of a period of six years from the date of issuance of a patent, the Director-General may request . . . an order revoking the patent if . . . :

cepted part of international intellectual property law, and similar licensing and revocation provisions are common in patent laws of many countries.<sup>29</sup> Furthermore, the U.S. complaints seem to contradict assertions that granting a patent will bring an influx of foreign investments to work the patent.<sup>30</sup> If patent protection automatically leads to foreign investment and development, patent owners should not fear compulsory license laws because these would seldom, if ever, be invoked.

### III. ECONOMIC CONSEQUENCES OF INTERNATIONAL PROTECTION OF INTELLECTUAL PROPERTY

#### A. *Consequences for Industrialized Nations*

Any patent system will have costs as well as benefits. The industrialized countries all have comprehensive patent systems. Whatever the economic costs of operating these systems, the industrialized economies successfully absorb these costs. A source of concern to the industrialized nations, and in particular to the United States, is the loss of revenues caused by misappropriation of intellectual property. Within its borders, a country is able to enforce its intellectual property laws, but international enforcement of these essentially domestic laws has proven to be problematic at best. The relation between intellectual property and foreign trade has been especially significant.

Foreign trade accounts for almost twenty percent of U.S. economic activity.<sup>31</sup> Between 1980 and 1987, the U.S. trade deficit increased from \$31 billion to \$170 billion.<sup>32</sup> Massive borrowings from foreign creditors financed much of this deficit. As a result, the United States has become the world's largest debtor nation.<sup>33</sup>

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- (1) there is . . . no use . . . within the Kingdom, without justifiable reason; or  
 (2) there is no sale of the products . . . or such products are being sold at an exorbitant price, or are not sold in sufficient supply to meet the public demand within the Kingdom, without justifiable reason.

*Id.*

29. Over 100 countries require the working of a patent, and 50 countries have compulsory licensing provisions. See PATENTS THROUGHOUT THE WORLD, *supra* note 19, app. A-21 to A-26.

30. See *infra* note 60 and accompanying text.

31. Max Baucus, *A New Trade Strategy: The Case for Bilateral Agreements*, 22 CORNELL INT'L L.J. 1, 2 (1989).

32. *Id.*

33. Office of Technology Assessment, *Paying the Bill: Manufacturers and the U.S. Trade Deficit*, OTA-ITE-390, at 1-8 (June 1988).

The annual interest payment on the U.S. debt during the 1990s has been estimated at approximately \$100 billion.<sup>34</sup> Enforcing intellectual property rights in foreign countries can reduce the trade deficit by increasing competitiveness of domestic products overseas in two ways: (1) by increasing the price of foreign goods to cover royalties foreign manufacturers must pay; and (2) by decreasing the quality of foreign goods by denying foreign manufacturers access to protected U.S. technology. Royalties paid for use of U.S. intellectual property directly decrease the trade deficit.

Government and business groups have estimated that the failure of foreign countries to respect U.S. intellectual property rights has resulted in large losses to U.S. business. The United States International Trade Commission ("ITC") estimated that "piracy"<sup>35</sup> of intellectual property resulted in losses of between \$43 and \$61 billion in 1986 alone.<sup>36</sup> A study by the Pharmaceutical Manufacturers Association reported that, in 1984, unauthorized sales of patented U.S. pharmaceuticals by local firms in just five foreign countries amounted to \$192 million, while the concomitant sales by U.S. firms were only \$162 million.<sup>37</sup>

The reported losses are particularly significant when viewed in light of the burgeoning U.S. trade deficit. Some commentators have noted, however, that the actual losses may not be as large as preliminary numbers suggest.<sup>38</sup> In many instances, the estimates are based on data voluntarily submitted by industries that would benefit from a protectionist trade policy. These businesses may exaggerate their losses to persuade Congress to increase trade barriers.

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34. This estimate assumes that the U.S. debt is not brought into balance until the year 2000. Lester C. Thurow & Laura D'Andrea Tyson, *The Economic Black Hole*, 67 FOREIGN POL'Y 5 (1987). Each \$40 billion in annual interest payments could result in about a one percent drop in the U.S. standard of living. *Id.* The authors observe that the worst case scenario could result in a seven percent fall in living standard, which would be three times greater than the largest post-war U.S. recession, that of 1981-82. *Id.* at 7.

35. Misappropriation of intellectual property is often referred to as piracy, with the misappropriators being called pirates. The origin of this pejorative term is not clear, as motion pictures or drugs without license do not seem to have much in common with buccaneers. Nevertheless, the terms are widely used in discussions of intellectual property. For a discussion of intellectual property piracy, see Emmert, *supra* note 7, at 1319-22.

36. See Judith H. Bello & Alan F. Holmer, "Special 301": *Its Requirements, Implementation, and Significance*, 13 FORDHAM INT'L L.J. 259, 260 (1989-90).

37. See Mossinghoff, *supra* note 18, at 309 n.6. The author argues that U.S. corporations would have had an additional \$192 million in sales but for the piracy. See also Emmert, *supra* note 7, at 1320.

38. Emmert, *supra* note 7, at 1323-28.



ers.<sup>39</sup> A detailed study of seven countries<sup>40</sup> responsible for the most serious piracies of U.S. intellectual property rights found that the 1986 losses to U.S. intellectual property owners total approximately \$3.4 billion.<sup>41</sup> These studies indicate that the actual U.S. losses from intellectual property piracy do not exceed \$10 billion per year.<sup>42</sup> Thus, the benefits from enforcing U.S. intellectual property rights are probably smaller than originally perceived. This, however, does not reduce the costs of such enforcement to foreign countries.<sup>43</sup>

### B. Consequences for Developing Countries

The costs and benefits of a patent system can be different for a developing country than they are for an industrialized country. A primary economic goal for many developing nations is to increase the standard of living of their people by encouraging Western-style economic development, often through the use of Western technology.<sup>44</sup> Thus, the mechanics and costs of technology transfer have caused much friction between WICs and developing countries.<sup>45</sup> If a developing country grants legal recognition to foreign patents, it would have no legal way to use patented technology without paying royalties to the patent owner.<sup>46</sup> If the economy of the country is weak, there may be insufficient foreign currency reserves to pay the royalties and provide essential services. Thus, there can be

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39. *Id.*

40. The seven countries were Argentina, Brazil, India, Mexico, Republic of Korea, Singapore, and Taiwan. *Id.* at 1328.

41. *Id.* This figure was obtained by totaling the estimates provided in INTELLECTUAL PROPERTY RIGHTS: GLOBAL CONSENSUS, GLOBAL CONFLICT? 386-407 (R. Michael Gadbaw & Timothy J. Richards eds., 1988).

42. See Emmert, *supra* note 7, at 1323-28.

43. For a discussion of costs to foreign countries, see *infra* notes 75-85 and accompanying text.

44. Thus, many developing countries view protection and use of intellectual property as a question of economic policy. These countries wish to obtain new technology at the lowest short-term price. On the other hand, WICs are more likely to view intellectual property ownership as a fundamental right, which makes piracy seem unfair or morally repugnant. See INTELLECTUAL PROPERTY RIGHTS: GLOBAL CONSENSUS, GLOBAL CONFLICT?, *supra* note 41, at 1-3.

45. A number of methods to resolve difficulties and disputes in technology transfer have been described. One example is the World Intellectual Property Organization ("WIPO") Model Law on Inventions for Developing Countries. For a discussion of the WIPO Model Law, see Oddi, *supra* note 12, at 870-73. For related material, see Emmert, *supra* note 7, at 1382-83.

46. See, e.g., Field, *supra* note 7, at 5-7.

great pressure for the country to appropriate the patent or to condone the pirating of the patent by its citizens.

Because nations consider control over food supply and healthcare to be an aspect of national sovereignty,<sup>47</sup> there is a particularly heavy pressure to appropriate inventions in agriculture and medicine.<sup>48</sup> Piracy<sup>49</sup> can circumvent the payment of royalties and thus promote development by making valuable technologies available at a minimum cost. This inexpensive use of technology stimulates the local economy and provides additional profits from exporting products of these technologies to other nations that do not recognize the foreign patent.<sup>50</sup>

Various reasons exist for developing countries to grant patent protection to foreign inventions such as pharmaceuticals. If developing countries recognize foreign patent rights for pharmaceuticals, they could, according to the predictions of the supporters of intellectual property protection,<sup>51</sup> obtain a number of potential benefits: (1) foreign companies would increase their investment in production and research and development ("R&D") of high technology pharmaceuticals within the developing countries;<sup>52</sup> (2) foreign companies would increase the transfer of pharmaceutical technology to the developing countries;<sup>53</sup> (3) foreign companies would make a variety of important new drugs available to the people of the developing countries;<sup>54</sup> and (4) domestic R&D of pharmaceuticals would be stimulated.<sup>55</sup>

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47. For a discussion of intellectual property protection and national sovereignty, see Emmert, *supra* note 7, at 1355-58, 1383-84.

48. The economies of many developing countries are largely agricultural. The government may consider it a threat to the nation's sovereignty as well as its economic existence to allow patents to restrict agriculture or healthcare. *See id.*

49. If a country has not granted patent protection to the invention in question, this should not be regarded as piracy. Patent laws are local in character. Thus, if a country has chosen not to grant patent protection, the invention is in that country's public domain and may be used freely by all. For a discussion of international variations in pharmaceutical patent protection, see generally Mossinghoff, *supra* note 18.

50. *See Oddi, supra* note 12, at 874-75.

51. *See supra* notes 18-21 and accompanying text. *See also* INTELLECTUAL PROPERTY RIGHTS: GLOBAL CONSENSUS, GLOBAL CONFLICT?, *supra* note 41, at 87-108.

52. *See Emmert, supra* note 7, at 1370-71.

53. *Id.* *See also* Mossinghoff, *supra* note 18, at 310, 314.

54. One reason for the recent strengthening of pharmaceutical patent laws by the Government of South Korea is its desire to make more new drugs available to its population. *See Mossinghoff, supra* note 18, at 317.

55. Another reason for South Korea's decision to recognize pharmaceutical patents is the desire to stimulate domestic R&D. *See id.* at 316-18.

The promise by the U.S. pharmaceutical industry to increase investment in local R&D and production facilities is one of the most persuasive arguments for Thailand to grant pharmaceutical patents. This promise, however, may be illusory. The Pharmaceutical Manufacturers Association has complained that countries such as Thailand that condone the piracy of pharmaceutical patents are siphoning off profits from the U.S. drug industry.<sup>56</sup> If Thailand were to prevent the manufacture and sale of pirated drugs, the quickest way for U.S. companies to realize profits would be to ship U.S.-made products to Thailand. There would be no need to construct new facilities in Thailand.<sup>57</sup> Even if the manufacturing capacity of the United States were saturated, there is no guarantee that new plants would be built in Thailand. It is also unlikely that Thailand would receive much R&D funding from the United States, because Thailand lacks trained technicians and other infrastructure necessary for commercial pharmaceutical research.<sup>58</sup> Pharmaceutical patents would probably be worked in Thailand only because the Thailand Patent Act contains compulsory licensing provisions.<sup>59</sup> U.S. patent owners, however, have deemed such licensing provisions to be unacceptable.<sup>60</sup> Because the United States has secured many of the changes it requested to the Act,<sup>61</sup> U.S. drug companies may have little incentive to manufacture in Thailand.

The promise to transfer new technology may also be illusory. If U.S. companies manufacture only few drugs in Thailand, little pharmaceutical technology will have to be transferred to Thailand. The Pharmaceutical Manufacturers Association has complained

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56. See *infra* note 144 and accompanying text.

57. Pharmaceuticals are small, high-value items that do not usually contain a significant component of unskilled labor. Thus, manufacturing in a developing country would present no particular advantages. Furthermore, there is little advantage to local manufacturing to avoid freight costs because drugs are light in weight and can be shipped inexpensively. See generally Mossinghoff, *supra* note 18.

58. See *How Companies Can Ease Thai Infrastructure Woes*, BUS. ASIA, Nov. 28, 1988, at 382; *Thailand's Staffing Scene: The Worst Lies Ahead*, BUS. ASIA, Apr. 16, 1990, at 130.

59. For the text of Thai Patent Act § 46, see *supra* note 27. The 1992 revisions of the Act changed this provision, but compulsory licensing of pharmaceuticals is still likely. See *infra* notes 183-92 and accompanying text.

60. See Mossinghoff, *supra* note 18, at 312. It is probably unreasonable for the United States to object to this type of provision, as they are common even among the WICs. See *supra* note 29 and accompanying text.

61. See *infra* notes 183-92 and accompanying text.

that Thai companies manufacture and import drugs in violation of U.S. patents.<sup>62</sup> As long as Thai companies already manufacture these drugs, technology transfer from the United States is unnecessary because Thailand must already have the necessary technology. As for drugs that Thailand imports from other pirating countries, these violating countries can probably provide the technology more cheaply than can the United States.<sup>63</sup> In addition, special efforts at technology transfer would be unnecessary because the patent should already disclose all the necessary technology.<sup>64</sup>

Moreover, granting pharmaceutical patents will not necessarily guarantee the availability of important new drugs. Those new drugs that can be manufactured conventionally are already available from pirate manufacturers either in Thailand or in other countries that do not respect U.S. pharmaceutical patents.<sup>65</sup> Pharmaceuticals that require complex manufacturing techniques are usually not available from pirate sources because the special manufacturing technology is not available outside of WICs. These drugs are unusually expensive because of high R&D and manufacturing costs.<sup>66</sup> The low average wages<sup>67</sup> in Thailand would seem to limit the market for such drugs because their price is beyond the

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62. See *infra* note 144 and accompanying text.

63. The complex technology necessary to produce certain high technology pharmaceuticals may be an exception.

64. When a patent is issued in the United States, it contains a disclosure that should enable one skilled in the art to practice the patent. The issued patent is designed to make publicly available all the information needed to manufacture the pharmaceutical in question. This public disclosure of the invention is one of the justifications for patent monopoly. One author has discussed the problem, however, that patent documents are often inadequate to allow industrially unsophisticated countries to practice the invention. The idea that granting patents will induce the owner of the technology to transfer the technology necessary to work the patent is flawed because, if the patent document does not disclose the necessary technology, the patent would be invalid for lack of an enabling disclosure. See Oddi, *supra* note 12, at 850-51. Thus, Thailand would gain little in the way of disclosure by issuing pharmaceutical patents. If the U.S. patent does not contain adequate disclosure, it should be invalid under U.S. patent law. See 35 U.S.C. § 112 (1988).

65. See generally Mossinghoff, *supra* note 18, at 308-11 (discussing the widespread availability of copied pharmaceuticals).

66. For example, one of these drugs, TPA (Tissue Plasminogen Activator), is manufactured by genetic engineering and costs \$2,200 per patient, while a similar drug, streptokinase, which is extracted from a fungus, costs \$200 per patient. The cost differential is due to differences in development and manufacturing costs. Elizabeth Neus, *Clot-Busting Drug Falls to Studies, Economic Pressures*, GANNETT NEWS SERVICE, Dec. 3, 1991.

67. The average daily wage in Thailand is under \$3.00. See Into Bo Champon, *The Next "Little Tiger": Manufacturing and Intellectual Property Rights in Thailand*, 3 TRANS-NAT'L LAW. 275, 278 (1990).

means of the average consumer. It is technology, not patent law, that keeps these drugs from being copied. Therefore, U.S. pharmaceutical companies will probably not refuse to sell these drugs to the small number of Thais who can afford them.<sup>68</sup> Thus, granting pharmaceutical patents may not actually result in increased availability of new drugs. It is possible, however, that granting pharmaceutical patents would increase the quality of the available drugs. The extensive regulations that ensure the high quality of U.S. pharmaceuticals do not control manufacturers of counterfeit drugs. Unfortunately, little direct data is available on the quality of pirated pharmaceuticals.<sup>69</sup>

Because private corporations are not likely to undertake expensive and risky pharmaceutical research without patent protection for the pharmaceuticals,<sup>70</sup> there is little private pharmaceutical research in Thailand.<sup>71</sup> If there are private resources available in Thailand to undertake pharmaceutical research, a new patent policy would encourage such research by granting monopoly protection to new drugs that might result from the research.

Nonetheless, the relative poverty of most Thai consumers<sup>72</sup> limits the market for expensive new drugs. The small Thai market may inhibit private pharmaceutical research as much as the lack of patent protection. Furthermore, the Thai Government's unwilling-

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68. There is no indication that pharmaceutical companies have interdicted all drug shipments to Thailand as retaliation for the ineffective Thai patent law. "The invention is likely to be supplied by the foreign patent owner itself, who is unlikely to refuse to import the invention merely because of the absence of patent protection in the developing country of import, provided a profit can be made by selling the invention there." Oddi, *supra* note 12, at 848-49.

69. Argentina refuses to respect U.S. pharmaceutical patents. SmithKline, the manufacturer of the well-known anti-ulcer drug Tagamet, estimates that they lost \$50 million to the pirate version of the drug. It seems likely that the copied drug was almost as efficacious as the original; otherwise, patients and their physicians probably would have switched to the original. See *id.* at 845-46.

70. *Id.* at 839 n.37. See also Field, *supra* note 7, at 3-4.

71. There is, however, medical research under the auspices of various government programs. Like many developing countries, Thailand focuses its limited research funds on specific disease targets. Malaria, pediatric respiratory viral infections, and AIDS are among the targeted diseases. The non-profit research programs are generally operated through the country's university system. Funds come from local as well as international sources such as the United States Aid for International Development ("U.S.A.I.D."). For a brief discussion of some of these projects, see *Thailand Launches Technology Commercialization Program with the U.S.*, GENETIC ENGINEERING NEWS, Jan. 1992, at 13. For a discussion of health problems in Thailand and the growing menace of AIDS, see also THAILAND, A COUNTRY STUDY 113-15 (Barbara L. LePoer ed., 6th ed. 1989).

72. See *supra* note 67.

ness to grant pharmaceutical patent protection may represent a policy decision to supplant private pharmaceutical research to avoid diverting limited private research funds from more important projects.<sup>73</sup> In general, Thailand is not hostile to patent protection. This is evidenced by its grant of patent protection to most other types of inventions.<sup>74</sup>

In addition to their potential benefits, patent systems also have attendant costs, such as the expenses of the patent system bureaucracy,<sup>75</sup> price increases in patented products that would have been invented without the patent system,<sup>76</sup> and inefficient allocation of research funds by patent-seeking corporations.<sup>77</sup> The decision to grant patent protection for any or all classes of invention should be based on the balancing of the cost and benefit factors. In the case of pharmaceutical drugs in Thailand, the most significant cost of granting patents would be the increased prices of drugs that are already available in a pirated form. Because price increases are usually justified as a cost that is balanced by the benefit of having the new invention,<sup>78</sup> pirated drugs already in existence cannot be counted as a benefit generated by the patent system. Additional costs in Thailand would include loss of jobs and other economic benefits from local manufacture of pirated drugs.<sup>79</sup> A closely re-

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73. For a complete discussion of poverty and development strategies in Thailand, see ROBERT J. MUSCAT, THAILAND AND THE UNITED STATES DEVELOPMENT, SECURITY AND FOREIGN AID 185-234 (1990).

74. See Thai Patent Act, *supra* note 21.

75. See Oddi, *supra* note 12, at 840.

76. Because royalties are paid to the patent owners, any patented product is necessarily more expensive than an unpatented product. If the patented product is one that would not have been invented without the incentive of the patent system, the overall benefit to the economy should outweigh the increased costs. Many inventions, however, would be made without a patent incentive. When a patent system is available, these inventions often receive patents. In that case, the economy pays a premium price even though the patent incentive was not responsible for the invention. See *id.*

77. Research expenditures by patent-seeking corporations can exhibit two inefficiencies that can be of special concern to developing countries. First, if one corporation has a key patent in a particular area of technology, other companies are often loath to spend research money in that area because they can no longer obtain the key patent. If the technological area in question is vital to the developing country, the patent system can actually discourage essential research. Second, companies often expend considerable research efforts in foreclosing an area to their competitors and extending the life of existing patents by making minor improvements to existing inventions. These actions may run counter to the needs of a developing economy. *Id.* at 840-41.

78. *Id.* at 845-46.

79. This assumes that U.S. firms will not establish Thai manufacturing facilities. Export of pirated inventions provides an additional source of profits. *Id.* at 875.

lated cost is the loss of profits from selling copied pharmaceuticals to other countries that do not respect U.S. patent rights.<sup>80</sup>

There are also political costs associated with imposing pharmaceutical patents. As discussed below, current U.S. policy favors the use of trade retaliation to encourage foreign countries to respect U.S. intellectual property.<sup>81</sup> The Thai Government may resist attempts by the United States to force it to alter its internal policies because acquiescence would demonstrate lack of power and national status. Thailand is unique among Southeast-Asian countries in that it has never fallen under the colonial domination of any European country.<sup>82</sup> The Kingdom of Siam (predecessor to the present state of Thailand) avoided becoming a European colony by playing off French colonial aspirations in Vietnam against British aspirations in Burma and Malaysia.<sup>83</sup> The Thais find it especially distasteful to have a Western nation coerce them into making internal policy changes.<sup>84</sup> Acquiescing in foreign demands, particularly those concerning matters of healthcare, may be politically untenable for the Thai Government.<sup>85</sup>

#### IV. THE PRESENT CONFLICT

##### A. *International Intellectual Property*

Although the United States and other WICs strongly favor worldwide enforcement of intellectual property rights, much of the Third World opposes such enforcement.<sup>86</sup> The U.S. position of strengthening international intellectual property enforcement is backed by at least two motives: (1) the economic benefits to the United States which enhanced enforcement of intellectual property

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80. *Id.* at 874-75.

81. See *infra* notes 121-60 and accompanying text.

82. See Z. MICHAEL SZAZ, *SOUTHEAST ASIA* 61 (1983).

83. See THAILAND, A COUNTRY STUDY, *supra* note 71, at 22-25.

84. See Thomas N. O'Neill III, *Intellectual Property Protection in Thailand: Asia's Young Tiger and America's "Growing" Concern*, 11 U. PA. J. INT'L BUS. L. 603, 621 (1990).

85. Thai Prime Minister Chatichai was strongly criticized by his constituents because he seemed more interested in dealing with the U.S. intellectual property problem than with the extensive damage caused by Typhoon Gay. "Any serious attempt by officials to negotiate a way to deal with intellectual property piracy is politically untenable. Just introducing the legislation for minor concessions . . . is impossible for the moment." *Typhoon Gay Fallout Threatens IPP Progress*, *BUS. ASIA*, Jan. 8, 1990, at 18. For a discussion of opposition to the 1992 revision to the Thai Patent Act, see also *infra* notes 161-69.

86. See Emmert, *supra* note 7, at 1354-79.

could yield;<sup>87</sup> and (2) a belief that improved protection of intellectual property is essential for the economic development of all countries.<sup>88</sup> Many developing countries adopt Western-style intellectual property systems despite lack of proof that such systems will benefit them.<sup>89</sup> Some Third World countries, however, view WICs' attempts to enforce intellectual property as a continuation of colonialist policies in which WICs control the economic future of the lesser-developed nations by allocating technology and extracting exorbitant royalties in return.<sup>90</sup> In addition, many developing countries believe that WICs have an obligation to aid the development of poorer countries rather than retarding their growth through restrictive intellectual property policies.<sup>91</sup>

There is a dual nature to the United States' handling of international intellectual property. On one hand, the United States views intellectual property as a legal issue. The United States is a member of several international treaty organizations and conventions that have been seeking, for over a century,<sup>92</sup> to create a uniform international intellectual property law. On the other hand, the United States also treats intellectual property as a trade issue.<sup>93</sup> During the last forty years, the United States has generally re-

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87. See *supra* notes 31-43 and accompanying text.

88. See Oddi, *supra* note 12, at 848-55; Mossinghoff, *supra* note 18, at 310-11.

89. Oddi, *supra* note 12, at 835-36.

90. *Id.* at 877-78.

91. Emmert, *supra* note 7, at 1354.

92. The first international patent congress was held in Vienna in 1873. See Emmert, *supra* note 7, at 1337-39. The original intention was to create uniform, worldwide intellectual property laws. Significant differences in the intellectual property laws of the attending countries made this goal unattainable, however. The goal of the participants became somewhat simpler: all foreigners should receive the same treatment under a host country's intellectual property laws as would nationals of that host country. *Id.* at 1337-38. According to the principle of national treatment, each member state agrees to grant citizens of other member states the same treatment concerning intellectual property laws and procedures as it does to its own citizens. Thus, if a country allows its citizens to obtain patents for a certain category of inventions, that country must also allow foreigners to obtain the same type of patent. See Oddi, *supra* note 12, at 856-57. This principle controlled the 1883 Paris Convention for the Protection of Industrial Property, revised July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 305, and the 1886 Berne Convention for the Protection of Literary and Artistic Work, revised July 10, 1974, reprinted in 7 COPYRIGHT 135 (1971). See Emmert, *supra* note 7, at 1338 n.75.

93. See generally Kenneth J. Ashman, Comment, *The Omnibus Trade and Competitiveness Act of 1988—The Section 301 Amendments: Insignificant Changes from Prior Law?*, 7 B.U. INT'L L.J. 115, 129-31 (1989).



solved trade issues in a multilateral context that seeks to attain consensus between trading partners.<sup>94</sup>

Since the end of World War II, the continued development of international intellectual property law has proceeded under the auspices of the World Intellectual Property Organization ("WIPO"), now a United Nations agency.<sup>95</sup> WIPO's lack of progress in protecting intellectual property has frustrated the United States.<sup>96</sup> Not only do the WIPO principles grant considerable discretion<sup>97</sup> to the member countries, there are few remedies prescribed for what limited protection is available.<sup>98</sup> In addition, the United States and other WICs have complained that opposing voting blocs prevent attempts to strengthen WIPO conventions.<sup>99</sup> Because the United States' position on intellectual property

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94. Baucus, *supra* note 31, at 3-5.

95. Convention Establishing the World Intellectual Property Organization, *opened for signature* July 14, 1967, 21 U.S.T. 1749, 828 U.N.T.S. 3.

96. Emmert, *supra* note 7, at 1339-44. The United States is dissatisfied with WIPO because the central principle of national treatment leaves too much discretion in the hands of offending countries and because the limited membership makes enforcement difficult. *Id.* Because national treatment mandates only that a country give foreigners the same rights as its own citizens, this principle allows a country the discretion to provide no protection for a given category of intellectual property. At least 46 countries refuse to provide patent protection for pharmaceuticals. Oddi, *supra* note 12, at 867. For a complete description of these countries' patent procedures, see generally PATENTS THROUGHOUT THE WORLD, *supra* note 19. Under international conventions, countries are free to deny protection to pharmaceuticals as long as the countries do not grant their own citizens rights superior to those granted to foreigners. The United States would like a system that forces all countries to provide reciprocal intellectual property protection. Under a reciprocal treatment system, a country would have to give the owner of foreign intellectual property at least the same rights she would enjoy in her own country. In that situation, the country's intellectual property laws would essentially be under external control because the country would have to strengthen its own laws to avoid favoring the foreign intellectual property owner over its own nationals. See Oddi, *supra* note 12, at 834-35.

97. See discussion *supra* notes 92, 96.

98. See Emmert, *supra* note 7, at 1342. Article 28 of the Paris Convention, added in 1987, does provide for dispute resolution in the International Court of Justice at the Hague. *Id.* at 1342-43. No patent cases, however, have been initiated under this provision. Possible reasons for the absence of such suits include: the lack of intellectual property expertise on the part of the Court; the refusal of many WIPO members to accept the jurisdiction of the Court, combined with procedures that prevent member countries from being sued against their will; and the perception that such a proceeding might be considered an unfriendly act against the defendant state. *Id.*

99. WICs, including the United States, vote as a bloc. Their vote is usually opposed by the developing nations and the socialist countries. Because of the large number of developing nations, the Western position can never achieve a majority. *Id.* at 1343.

protection is a minority position worldwide,<sup>100</sup> the United States has found it difficult to prevail in the democratic forum of WIPO and has, therefore, sought solutions through trade agreements.

For the last forty years, the General Agreement on Trade and Tariffs ("GATT")<sup>101</sup> has formed the basis of most U.S. trade policies.<sup>102</sup> GATT is an agreement between many nations that sets rules for international trade. The goal of GATT is to reduce tariffs and to promote free trade.<sup>103</sup> The GATT forum also negotiates details of future trade policies.<sup>104</sup> The United States believes that GATT will be a more conducive forum for enhancing intellectual property protection because the GATT system is more flexible and has not developed the voting blocs that have impeded progress through WIPO.<sup>105</sup>

The United States proposed that the latest GATT talks, the Uruguay Round, should contain a framework for enhanced international protection of intellectual property.<sup>106</sup> The U.S. initiative resulted in the Punta del Este Declaration,<sup>107</sup> which listed intellectual property protection as a major goal of GATT negotiations.<sup>108</sup> The new standards were proposed to include four basic elements: (1) a substantive standard for intellectual property protection; (2) creation of effective enforcement measures; (3) a mechanism of multilateral consultation and dispute settlement; and (4) the appli-

100. Only a very small minority of the world's population live in technologically-advanced industrialized countries like the United States.

101. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A3, 55 U.N.T.S. 187. See generally JOHN H. JACKSON & WILLIAM J. DAVEY, *LEGAL PROBLEMS OF INTERNATIONAL ECONOMIC RELATIONS* 396-432 (2d ed. 1986).

102. Baucus, *supra* note 31, at 3-4.

103. *Id.*

104. Emmert, *supra* note 7, at 1344.

105. *Id.* at 1345-46.

106. See Robert W. Kastenmeier & David Beier, *International Trade and Intellectual Property: Promise, Risks, and Reality*, 22 VAND. J. TRANSNAT'L L. 285, 290-91 (1989).

107. Punta del Este Ministerial Declaration on the Uruguay Round of Multilateral Trade Negotiations, Sept. 1986, at 7, reprinted in A. Jane Bradley, *Intellectual Property Rights, Investment, and Trade in Services in the Uruguay Round: Laying the Foundations*, 23 STAN. J. INT'L L. 57, 95 (1987) [hereinafter Punta del Este Declaration].

108. See Kastenmeier & Beier, *supra* note 106, at 290.

In order to reduce the distortions [sic] and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade, the negotiations shall aim to clarify GATT provisions and elaborate as appropriate new rules and disciplines.

Punta del Este Declaration, *supra* note 107, at 7.

cation of usual GATT provisions, such as transparency and national treatment, to intellectual property protection.<sup>109</sup>

The Uruguay Round has thus far failed to produce such an agreement. Initial meetings did not produce a consensus, even among WICs. By 1988, four distinct positions had emerged.<sup>110</sup> One author suggests that this impasse could be broken by a compromise position that would offer special assistance in the form of debt exchange and technology transfer for developing nations.<sup>111</sup> The creation of a "package deal" that would encompass other GATT concerns, such as agricultural subsidies, was also proposed.<sup>112</sup> On December 20, 1991, Arthur Dunkel, GATT Chief Negotiator, submitted to the 108 GATT Members a compromise proposal designed to cover "everything from services and intellectual property rights to agriculture."<sup>113</sup> Conclusion of the current GATT negotiations was set for mid-April 1992;<sup>114</sup> however, no successful conclusion to the talks was reached. European and Japanese leaders expressed unhappiness with the farm reform proposals contained in the GATT package at the same time that then-President Bush stressed that the United States would reject any plan that did not lead to big cuts in farm subsidies.<sup>115</sup> Meanwhile, members of the U.S. Congress complained that the Dunkel proposal is not strong enough in key areas such as intellectual property, services, and agriculture. Senator Bentsen commented: "Let me be clear: This text simply is not yet good enough to pass the Senate."<sup>116</sup> As of early 1993, the prospects for a conclusion to the GATT talks is distant at best.

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109. See Kastenmeier & Beier, *supra* note 106, at 291.

110. *Id.* at 292. WICs (United States, the European Community, and Japan) favored establishing substantive standards. *Id.* Countries of the Association of Southeast Asian Nations, which includes Thailand, were also willing to negotiate substantive standards, as long as those standards reflected the developmental differences between WICs and the Third World. *Id.* Canada and Switzerland favored the adoption of widely-accepted standards, even if this meant acceptance of lower overall intellectual property standards. *Id.* India, Brazil, and several other developing countries, however, questioned the use of GATT to set intellectual property standards, and demanded that WIPO be allowed to set all international intellectual property standards. *Id.*

111. See Emmert, *supra* note 7, at 1379-83.

112. *Id.* at 1385-91.

113. *GATT Pushes Its Trade-Talk Deadline Back*, L.A. TIMES, Jan. 11, 1992, at D5.

114. *Id.*

115. *Many Nations Upset over Proposed GATT Package*, L.A. TIMES, Jan. 14, 1992, at D3.

116. *Sen. Bentsen Says Draft GATT Accord 'Simply Not Good Enough' To Pass Senate*, 9 INT'L TRADE REP. 262 (1992).

A failure to reach an agreement on the GATT Accord will probably lead to increased calls for tariff barriers and other forms of trade retaliation. U.S. intellectual property owners consider the "big stick,"<sup>117</sup> country-by-country negotiations for obtaining intellectual property protection, complementary to the GATT efforts.<sup>118</sup> Already, the U.S. business community's concern over international intellectual property protection has led to the adoption of tougher trade and tariff laws.<sup>119</sup> These attempts to enforce intellectual property protection through unilateral tariffs and threats of trade retaliation, however, are ineffective with countries that are not dependent on U.S. trade, and may be of limited application because of political and military considerations.<sup>120</sup> Nevertheless, these tactics are used to secure the enforcement of U.S. intellectual property rights in Thailand.

*B. Recent U.S. Policy Towards Countries That Fail To Protect Intellectual Property*

The Omnibus Trade and Competitiveness Act of 1988 ("1988 Trade Bill")<sup>121</sup> contains a key provision, "Special 301,"<sup>122</sup> that is designed to provide a credible threat of U.S. retaliation against any trading partners that fail to reform their intellectual property laws.<sup>123</sup> Special 301 requires the USTR, within thirty days of issuing the National Trade Estimate Report, to list those countries that deny "adequate and effective protection of intellectual property rights"<sup>124</sup> or deny "fair and equitable market access to United States persons who rely upon intellectual property protection."<sup>125</sup>

Under the Special 301 provision, the USTR must name "priority countries" that (1) have the most egregious policies, (2) have the greatest economic impact on the United States, and (3) do not enter into good faith negotiations or make significant progress in

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117. This is the unilateral method of threatening trade sanctions or a decrease in foreign aid for any countries not granting full protection to U.S. intellectual property rights.

118. John Pearson, *The Patent Pirates Are Finally Walking the Plank*, Bus. Wk., Feb. 17, 1992, at 125.

119. See *infra* notes 121-28 and accompanying text.

120. Kastenmeier & Beier, *supra* note 106, at 302-03.

121. 1988 Trade Bill, *supra* note 2.

122. *Id.* §§ 1301, 1303.

123. Bello & Holmer, *supra* note 36, at 259.

124. 19 U.S.C. § 2242(a)(1)(A) (1988).

125. 19 U.S.C. § 2242(a)(1)(B) (1988).

negotiations to improve intellectual property protection.<sup>126</sup> Within thirty days after identifying priority countries, the USTR must initiate investigations of those countries' policies. This investigation must be complete within six months.<sup>127</sup> The investigation is intended to lead to bilateral negotiations, but the USTR may retaliate by increasing duties or imposing other restrictions on imports if the offending countries do not improve their intellectual property policies.<sup>128</sup>

The initial report under Special 301, issued on May 25, 1989,<sup>129</sup> pointed out that virtually no U.S. trading partner satisfied the standards being proposed by the United States at the Uruguay Round.<sup>130</sup> Nevertheless, the USTR believed that progress was being made, and declined to identify any country as a priority foreign country under Special 301.<sup>131</sup> Instead, the USTR published a priority watch list of countries, including Thailand, that were particularly deficient in intellectual property protection.<sup>132</sup> In addition, the USTR published a watch list of seventeen countries guilty of less severe offenses against U.S. intellectual property rights.<sup>133</sup> The USTR announced action plans for each country on the priority watch list, and the United States began intensified discussions with those countries.<sup>134</sup> The USTR threatened remedial action if no further progress was made by November 1, 1989.<sup>135</sup> The USTR compiled lists of specific improvements in intellectual property protection sought from each of the listed countries.<sup>136</sup> From Thai-

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126. 19 U.S.C. § 2242(b)(1) (1988). See *Bello & Holmer*, *supra* note 36, at 261.

127. See 1988 Trade Bill, *supra* note 2, §§ 1301, 1303. The time period can be extended to nine months if the issues are complex or if substantial progress is being made. *Id.*

128. *Bello & Holmer*, *supra* note 36, at 262.

129. Office of the United States Trade Representative, *Fact Sheet "Special 301" on Intellectual Property*, May 25, 1989, reprinted in 6 *Int'l Trade Rep.* (BNA) 718 (May 31, 1989) [hereinafter *Fact Sheet*].

130. *Id.* at 719.

131. *Id.*

132. In addition to Thailand, the list included Brazil, India, the Republic of Korea, Mexico, the People's Republic of China, Saudi Arabia, and Taiwan. *Id.*

133. This list contained developed as well as developing countries: Argentina, Canada, Chile, Colombia, Egypt, Greece, Indonesia, Italy, Japan, Malaysia, Pakistan, Philippine, Portugal, Spain, Turkey, Venezuela, and Yugoslavia. *Id.*

134. *Id.*

135. *Id.* at 720.

136. *Bello & Holmer*, *supra* note 36, at 267-69.

land, the USTR demanded improved patent protection for all types of inventions.<sup>137</sup>

On November 1, 1989, the USTR announced the progress on the Special 301 actions. Again, the USTR designated no countries as Special 301 priority countries. The USTR removed three countries<sup>138</sup> from the priority watch list and placed them on the watch list.<sup>139</sup> Although steady improvement in overall intellectual property protection was reported,<sup>140</sup> five countries remained on the priority watch list, while the original seventeen countries, as well as the three additions, remained on the watch list.<sup>141</sup>

The USTR listed the first priority countries, India, the People's Republic of China, and Thailand, in April 1991.<sup>142</sup> At the same time, the USTR placed the European Community, Brazil, and Australia on the priority watch list.<sup>143</sup> Because Thailand was already under two Section 301 investigations,<sup>144</sup> the USTR decided not to initiate a new investigation of Thailand.<sup>145</sup>

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137. *Id.* at 269. The demand also included protection for U.S. literary works and software. *Id.*

138. The countries were: Republic of Korea, Taiwan, and Saudi Arabia. *Id.* at 270.

139. *Id.*

140. Despite the USTR's statements, it seems that Thailand's progress on copyright protection was not considered adequate. In early 1989, Thailand was denied a portion of its benefits under the Generalized System of Preferences ("GSP"). See Charles Farnsworth, *U.S. Curbs Thai Goods*, N.Y. TIMES, Jan. 20, 1989, at B1; *Thailand Denied Certain GSP Benefits for Weak Intellectual Property Laws*, 37 Pat. Trademark & Copyright J. (BNA) 279 (1989). The GSP grants duty-free access of goods from developing nations to the more developed. This provision, initiated in 1971 between the Kennedy and Tokyo GATT Rounds, is considered a waiver of GATT Article I, and more developed countries are not obligated to grant nor maintain the GSP. See Emmert, *supra* note 7, at 1392-93.

141. Bello & Holmer, *supra* note 36, at 271.

142. *USTR Designates China, India and Thailand Most Egregious Violators Under Special 301*, 8 Int'l Trade Rep. (BNA) 643 (1991).

143. *Id.*

144. See *USTR Initiates Section 301 Investigation of Thailand's Pharmaceutical Patent Law*, 8 Int'l Trade Rep. (BNA) 443 (1991). The investigation was initiated in response to a petition filed on Jan. 20, 1991 by the Pharmaceutical Manufacturer's Association. The Association alleged that Thailand's failure to protect pharmaceutical patents had cost Pharmaceutical Manufacturers Association members at least \$24 million a year. *Id.* Under Special 301, the USTR had until March 1992 to complete the investigation. *Id.* In December 1990, the USTR had initiated Section 301 investigation of Thailand's copyright practices in response to a petition filed by the International Intellectual Property Alliance. The petition alleged that U.S. businesses lost between \$70 million and \$100 million due to Thai piracy of American movies, music, computer software, books, and other copyrighted materials. *Id.*

145. *Id.*

All three cited countries made serious responses to the threat of U.S. retaliation. India, faced with a balance of payment crisis, sought a new loan from the International Monetary Fund and, as a result, was more vulnerable to U.S. pressure.<sup>146</sup> In October 1991, the USTR arrived in New Delhi for secret talks on intellectual property protection, and leftists threatened street protests because the "negotiations would seek to perpetuate Washington's 'bullying' of third-world nations."<sup>147</sup> In November 1991, Indian Commerce Minister, P. Chidambaram, indicated that India was prepared to make concessions on the pharmaceutical patent issue.<sup>148</sup> The concessions may not be adequate, however, because the Commerce Minister said that U.S. pharmaceutical companies would have to produce the drugs in India "at affordable prices to the vast majority of people."<sup>149</sup>

China resisted the demands of the United States at first. Although negotiations between the United States and China were completed in a "frank and friendly" atmosphere, China refused to yield.<sup>150</sup> When China failed to meet the deadline of November 26, 1991, the U.S. Government initiated the process for imposing trade sanctions.<sup>151</sup> China responded by warning that the sanctions might lead to tariffs on U.S. goods and that it was prepared to engage in a trade war with the United States.<sup>152</sup> Nevertheless, the threats of a trade war were not realized, and China soon capitulated to the United States' demands by agreeing to revise its intellectual property laws.<sup>153</sup>

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146. Raju Gopalakrishnan, *U.S. Trade Official in India for Patent Talks*, REUTERS, Oct. 4, 1991.

147. *Id.*

148. *India Makes Key Concession on Patents*, REUTERS, Nov. 20, 1991.

149. *Id.*

150. George White & David Holley, *Limits by Chinese Strain Sino-American Trade*, L.A. TIMES, Oct. 28, 1991, at D3.

151. Jim Mann, *U.S. To Impose Major Trade Sanctions on China*, L.A. TIMES, Nov. 27, 1991, at D2. See also *U.S. Takes First Steps on Sanctions Against Chinese Goods Under Special 301*, 8 Int'l Trade Rep. (BNA) 1754 (1991).

152. David Holley, *China Warns of Trade War With U.S. over Patents, Copyrights*, L.A. TIMES, Jan. 8, 1992, at A6.

153. Jim Mann, *U.S. and China Avert Trade War over Copyrights*, L.A. TIMES, Jan. 17, 1992, at D1.

### C. Thailand's Response to U.S. Actions

Thailand's initial response was also to resist the United States' demands.<sup>154</sup> The United States reportedly demanded that Thailand pass a revised copyright law by July 1991 and give patent protection to pharmaceuticals, including drugs awaiting patent registration in the United States, by October 1, 1991.<sup>155</sup> The Thai Commerce Ministry repeatedly refused to comply with the United States' requests.<sup>156</sup> Thai Prime Minister, Anand Panyarachun, told the press that "the government still has seven months in which to negotiate to avert possible [U.S.] retaliation which could result in . . . raising import tariffs by up to 100 percent on some items."<sup>157</sup> The United States is Thailand's largest export market.<sup>158</sup> In July 1991, the Thai Foreign Minister, Arsa Sarasin, tried to persuade then-U.S. Secretary of State, James Baker, to have Thailand dropped from the priority foreign country list due to its satisfactory progress towards intellectual property protection.<sup>159</sup> Secretary Baker acknowledged Thai efforts to improve intellectual property protection, but urged Thailand to continue these efforts.<sup>160</sup>

Thailand hoped that a successful conclusion to the Uruguay Round of GATT would provide new international rules that would ward off the Special 301 sanctions.<sup>161</sup> The Thais complained particularly of the United States' double standards. Although the United States was trying to force an immediate change in Thailand's intellectual property practices, the United States refused to revise its own rice subsidy program until after the conclusion of the

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154. The Prime Minister of Thailand was reported as having insisted that the Thai national interest must come first and be maintained during negotiations with the United States. *Thai P.M. on U.S. Threats of Trade Sanctions*, XINHUA GEN. OVERSEAS NEWS SERVICE, Apr. 28, 1991, No. 0428052. The Prime Minister's statement may have been intended to avoid the political damage caused by any appearance of giving in to U.S. pressure. See *supra* note 85 and accompanying text. For a description of the Thai public's resistance to changes in intellectual property laws, see O'Neill, *supra* note 84, at 619-23.

155. *Thai P.M. on U.S. Threats of Trade Sanctions*, *supra* note 154.

156. *Id.*

157. *Id.*

158. The United States purchases about one-fourth of Thailand's exports. *Id.*

159. XINHUA GEN. OVERSEAS NEWS SERVICE, July 23, 1991, No. 0723170. "[A]rsa briefed [B]aker on [T]hailand's attempt to strengthen its trade mark [sic] law, an amendment [sic] version of which is now awaiting passage from the national legislative assembly, to enforce stricter copyright protection and to strengthen the patent law." *Id.*

160. *Id.*

161. Peter Ungphakorn, *Thailand 4; Pressure from US*, FIN. TIMES, Dec. 3, 1991, Survey, at 34.



Uruguay Round.<sup>162</sup> Finally, on October 22, 1991, the Thai Cabinet approved a draft bill to provide patent protection for pharmaceuticals;<sup>163</sup> however, the details of a possible grace period to exempt new drugs from protection temporarily was not finalized.<sup>164</sup>

The Thai Government asked the United States to show "good faith" by removing Thailand from the Special 301 list because it was making progress on pharmaceutical patent reform.<sup>165</sup> Thai officials stated that the United States must understand that it was not possible to meet all U.S. demands because the Thai Government must also act in the best interests of Thailand.<sup>166</sup> There was considerable opposition to pharmaceutical patents from local industry and academic circles.<sup>167</sup> The Thai Government emphasized that pharmaceutical patents were not the same as other disputed intellectual property matters, such as illicitly copied videos: "Copied drugs are not sold on street-side stalls in tourist haunts. . . . They are legally approved by the Thai Food and Drug Administration."<sup>168</sup> The remaining disagreements between Thailand and the United States concerned (1) a possible grace period before the law went into effect, (2) criteria for compulsory licenses, and (3) transitional protection for drugs already patented but not yet sold in other countries.<sup>169</sup>

On February 27, 1992, the Thai Assembly passed the draft bill, thus extending patent coverage to pharmaceuticals, food, drinks, biotechnology, and agricultural machinery.<sup>170</sup> The law did not contain the four-year grace period that Thai critics had desired.<sup>171</sup> The law, however, did grant the Thai Government some power over

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162. *Id.*

163. *Thai Pharmaceutical Patent Draft Approved*, AGENCE FRANCE PRESSE, Oct. 23, 1991.

164. *Id.*

165. *Thailand Asks U.S. To "Show Good Faith" in Trade Ties*, XINHUA GEN. OVERSEAS NEWS SERVICE, Nov. 18, 1991, No. 1118045. "[T]he patent act amendment passed its first reading last week in the [N]ational [A]ssembly, which decided to set up a 19-member committee to further consider it." *Id.*

166. *Id.*

167. *See Thai Pharmaceutical Patent Draft Approved*, *supra* note 163. The critics of patent protection demanded a four-year grace period so that domestic pharmaceutical companies could adjust to royalties. *Id.*

168. Ungphakorn, *supra* note 161, at 34.

169. *Id.*

170. Ungphakorn, *supra* note 22, at 3.

171. *Id.*

abuse of patent rights.<sup>172</sup> Although the USTR was due to make a final decision on Thai patent practice in mid-March,<sup>173</sup> Thai officials insisted that the revision to the Act was not a response to trade threats but was designed to comply with proposed intellectual property rules for the GATT Uruguay Round.<sup>174</sup>

The new law<sup>175</sup> is not yet available in an official English translation. The USTR, however, has provided an unofficial, preliminary translation produced by the United States Embassy in Bangkok.<sup>176</sup> Section 9 of the 1979 Act,<sup>177</sup> which prohibited the patenting of foods, medicines, and agricultural machinery, has been repealed and replaced.<sup>178</sup> The prohibition on patenting pharmaceuticals has been deleted, but it is not clear whether biotechnology patents will be allowed.<sup>179</sup> Furthermore, a broad, new exception for inventions that affect the public health or welfare could be used to deny patents to pharmaceuticals.<sup>180</sup> In keeping with suggestions from the United States, the patent term has been extended from fifteen to twenty years.<sup>181</sup> Process patents now receive full protection: "the right to produce, use, sell, keep for sale, offer for sale, or import to the Kingdom the produce produced by patented process."<sup>182</sup> Nevertheless, an exception for "preparations for a specific drug under prescription by practitioner of medical

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172. *Id.*

173. *Id.*

174. *Id.*

175. Patent Act B.E. 2535, Feb. 27, 1992.

176. Informal Translation of New Patent Act, BANGKOK 09964 (telegram from the USTR, copy on file at *Loyola of Los Angeles International and Comparative Law Journal*) [hereinafter New Patent Act].

177. For the text of Thai Patent Act § 9, see *supra* note 24.

178. New Patent Act, *supra* note 176, § 4.

The protection under this act shall not cover the following: (1) Microorganism and any other part of microorganism which can be found naturally, or in animals, plants or the extract from animals or plants; (2) A scientific or mathematical rule of theory; (3) A computer program; (4) Methods to analyze, treat or cure the diseases in human beings or animals; (5) An invention which would be contrary to public order or morality, or public health or welfare.

*Id.*

179. *Id.*

180. *Id.*

181. *Id.* § 10.

182. *Id.* § 12.

treatment"<sup>183</sup> may provide a limited loophole for some pharmaceuticals.<sup>184</sup>

The compulsory license provisions<sup>185</sup> have also been revised. Applicants for a compulsory license must now prove that they have attempted to obtain a license from the patentee by "proposing appropriate condition and compensation but not being able to agree in an appropriate period of time."<sup>186</sup> This places a larger burden on the party seeking a compulsory license. In addition, the Director-General can now initiate the compulsory licensing process after giving the patentee notice and an opportunity to be heard.<sup>187</sup> Section 51 of the 1979 Act has been modified to allow the Thai Government to appropriate patents to prevent or alleviate "serious shortages of food or medical supplies or for other public services," but the government must pay a reasonable royalty to the patentee for the appropriation.<sup>188</sup> Section 55,<sup>189</sup> on revocation of patents, has been ameliorated. Patents can now be revoked only when compulsory licensing has been inadequate or when the patents have been used in a prohibited, anti-competitive manner.<sup>190</sup> Finally, a Board of Pharmaceutical Patents has been created.<sup>191</sup> The Board's function is to monitor pricing and availability of patented pharmaceuticals and, if necessary, to initiate the compulsory licensing process.<sup>192</sup>

#### *D. Possible Long-Term Consequences of U.S. Actions*

The United States' effort to force unilaterally a change in Thailand's pharmaceutical patent policy appears to have suc-

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183. *Id.*

184. Some profitable pharmaceuticals are protected only by process patents; the drugs themselves have been known for a long time and are no longer protected by product patents. Nonetheless, the current process, which allows the pharmaceutical corporation to manufacture the drug profitably, may be protected by a process patent. Although process patents are notoriously difficult to enforce because one must prove which process was used to manufacture the purportedly infringing product, companies may attempt to defend a particularly lucrative process. The Thai law seems to remove any process protection by exempting at least some processes from patent protection where the processes are used to manufacture a prescription drug.

185. *See supra* note 27 and accompanying text.

186. New Patent Act, *supra* note 176, § 17.

187. *Id.* § 18.

188. *Id.* § 24.

189. *See supra* note 28 and accompanying text.

190. New Patent Act, *supra* note 176, § 26.

191. *Id.* § 27.

192. *Id.*

ceeded. Pharmaceuticals have been granted patent protection, although the protection may not be complete. U.S. intellectual property owners requested changes to the Thai compulsory license provisions. There have been changes, but those changes may not be adequate. Finally, the U.S. pharmaceutical industry demanded transitional protection for drugs that have been patented in the United States but are not yet commercially available.<sup>193</sup> The revised law does not address this matter, but this protection may be available under the Ministerial Regulations allowed under the Act.<sup>194</sup>

Despite the apparent U.S. victory, the United States as well as Thai interests may be damaged in the long-term. First, there may be few, if any, economic gains for U.S. corporations. If the Thai economy is unable to afford increased drug prices, or if the increased prices are simply passed back to the United States as higher prices on Thai goods, there will be no net gain for the United States. If the pharmaceuticals affected are so essential that price increases in the drugs divert needed funds from vital development projects,<sup>195</sup> the entire rate of growth of the rapidly developing Thai economy could be hindered.<sup>196</sup> In that situation, overall trade with the United States would decrease. Second, such action will almost certainly lead to a cooling relationship between the two countries. The United States has expended considerable efforts and funds, through U.S.A.I.D.<sup>197</sup> and other programs, to foster a relationship with Thailand. Long-term U.S. trade policy has been constructed around multilateral negotiation.<sup>198</sup> Attaining U.S. trade goals by threat of trade retaliation undermines these policies.

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193. See *supra* note 169 and accompanying text.

194. Telephone interview with Peter Collins, United States Trade Representative (Mar. 5, 1992).

195. The economic future of Thailand is currently clouded by serious deficiencies in the infrastructure of the country. Plans have been formulated to deal with many of these problems, but recent lack of political stability has already jeopardized many of these plans. See *Reshuffle of Thai Cabinet Shifts Political Support of Infrastructural Plans*, *BUS. ASIA*, Feb. 4, 1991, at 40. Additional pressures on the economy caused by increased healthcare costs might further impede these important projects.

196. See Champon, *supra* note 67, at 278-80; O'Neill, *supra* note 84, at 603-05.

197. See *supra* note 71.

198. See *supra* note 101 and accompanying text.

V. A NEW THEORY: LEVEL OF DEVELOPMENT RELATED TO  
BENEFITS OF PATENT PROTECTION

A. *General Relationship Between Patent Benefits and Level of  
Economic Development*

Although a number of studies have questioned whether it is beneficial for developing countries to adopt Western-type systems for intellectual property protection, many developing countries have adopted such systems.<sup>199</sup> This choice probably has been motivated by a belief in the predicted benefits of an intellectual property system, as well as a belief that having an intellectual property system reflects a certain level of status.<sup>200</sup> Now, the threats of trade retaliation employed by the United States are providing additional reasons for Third World countries to adopt an intellectual property system.<sup>201</sup> Yet, adopting an intellectual property system, either by free choice or under compulsion, does not mean necessarily that the the adoption of the system is in the country's best interest. The level of a country's development alters the cost-benefit ratio of granting patents. As a country develops, it will pass through a number of stages, each of which presents a different cost-benefit picture for the granting of patents. Several authors have suggested different versions of a model of economic evolution.<sup>202</sup> The following scenario is a summary of their views.

The first stage is that of a country at a very low level of economic development. A completely under-developed country has little technological capacity and infrastructure, and will make few, if any, internationally patentable inventions. Such a country would not benefit from a patent system because, as an under-developed country, it would not be limited by a shortage of inventions but by the ability to utilize readily available technology. Whereas the economy of a developed country depends on new inventions, an under-developed country needs to expand its economy by implementing older inventions that are already available in the public domain.<sup>203</sup>

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199. See Oddi, *supra* note 12, at 865-66.

200. *Id.*

201. See *supra* notes 121-28 and accompanying text.

202. See Emmert, *supra* note 7, at 1380; Oddi, *supra* note 12, at 857; O'Neill, *supra* note 84, at 624-26.

203. For example, an undeveloped country probably needs to build regular railroads and expand its economic infrastructure before it can benefit from patented technology, such as a high-speed, automatic train. See Oddi, *supra* note 12, at 843.

As the country's economy develops, markets and the infrastructure necessary for innovation will also develop, and the country will reach the second stage. The country becomes capable of using more advanced technology and may become an intellectual property pirate. Such a country is often rapidly developing and fuels the growth of its economy through intellectual property theft.

Eventually, a country will reach the third stage of development, where its businesses can create world-class inventions. At that point, it becomes profitable for the country to grant patent protection so as to protect its own innovators. Profits from piracy of international intellectual property are outweighed by losses to the country and its inventors caused by failure to protect their own inventions. Because international intellectual property protection is on a *quid pro quo* basis, the country must provide strong patent protection so that other advanced countries will reciprocate and respect its patents. WICs, including the United States, reached this third stage over a century ago. Many of the difficulties with international intellectual property protection may be caused by a failure of WICs to recognize the evolutionary stages of patent protection.

At least one study presents empirical evidence that can be used to support the model of an evolutionary pathway in the development of intellectual property protection.<sup>204</sup> J. Davidson Frame gathered data on twelve variables related to economic, technological, and scientific capabilities of 128 countries.<sup>205</sup> The goal of the study was to determine which economic factors, if any, correlated with countries that are intellectual property pirates. The study used three published reports to identify the worst intellectual property pirate countries, "first-tier LOWCOMM countries" identified by all three reports.<sup>206</sup> An additional group of eight "second-tier LOWCOMM" countries were identified by only two of the three reports.<sup>207</sup> Frame found that the listed countries, particularly those in the first-tier, had larger populations, economies, and scientific and technological capacities than other Third World countries.<sup>208</sup>

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204. J. Davidson Frame, *National Commitment to Intellectual Property Protection: An Empirical Investigation*, 2 J.L. & TECH. 209 (1987).

205. *Id.* at 209-10.

206. *Id.* at 212. The eight countries were Argentina, Brazil, Indonesia, Mexico, the Philippines, South Korea, Taiwan, and Turkey. *Id.*

207. *Id.* These countries were Colombia, Costa Rica, Egypt, India, Pakistan, Peru, Singapore, and Thailand. *Id.*

208. *Id.* at 215-16.

In addition, he found that the pirate countries patented more heavily in the United States than do other Third World countries. This was taken as evidence of a developing economy and "the emergence of nascent world-class technological capabilities" in the pirating countries.<sup>209</sup> Frame concluded that the pirating countries stood "at the threshold of the ranks of the industrialized countries."<sup>210</sup> Finally, Frame developed a mathematical model that demonstrated that the three variables (scientific articles published, gross national product, and number of U.S. patents acquired) were the best predictors of the technological capacity and developmental stage of a country.<sup>211</sup> He concluded that the technological strength of the pirate countries indicated that all these countries should adopt intellectual property protection to ensure continued development.<sup>212</sup>

These same observations, however, can be interpreted in a different way. First, pirating intellectual property has produced strong, growing economies. This supports the idea that countries at a certain level of development (the second stage) benefit greatly from pirating. Second, there is a wide range in the economic status of the pirate countries.<sup>213</sup> Third, only the richest, most developed of the pirate countries (Korea and Taiwan) have been successfully "persuaded" to strengthen their intellectual property laws.<sup>214</sup>

In other words, intellectual property pirating fuels development until the country reaches the point where intellectual property protection becomes economically advantageous. At that point in the development, represented by the transition from stage two to stage three in the model, an intellectual property system either develops or can be imposed successfully from the outside. This supports the interpretation that a country naturally adopts a comprehensive system of intellectual property protection only when it reaches an adequate level of development. Attempts to force a country to adopt an intellectual property scheme will be successful only if the country is sufficiently developed to benefit from the scheme. If the country has not reached this point, the costs of in-

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209. *Id.* at 217.

210. *Id.*

211. *Id.* at 218-23.

212. *Id.* at 224.

213. *Id.* at 225-27 (app.).

214. *Id.* at 216.

tellectual property protection will outweigh its benefits, and the protection scheme, if adopted, will be enforced only sporadically.

This interpretation could explain the results of the Pharmaceutical Manufacturers Association's efforts to promote worldwide patent protection for pharmaceuticals.<sup>215</sup> Korea, Taiwan, and Canada have recently amended their patent laws to give improved protection to pharmaceuticals.<sup>216</sup> The gross national product per capita, the number of scientific publications, the number of domestic patents, and the number of U.S. patents for these countries are quite high.<sup>217</sup> These factors are consistent with the notion that these countries have already reached stage three of development. The success of the Pharmaceutical Manufacturers Association's efforts could indicate that these countries were simply ready to adopt pharmaceutical patent protection. An analysis of these same factors also suggests that Thailand ranks below the average of the pirate countries on most indicators of development.<sup>218</sup> This would mean that, while the Thai economy is expanding rapidly, it has not yet reached stage three. It may be useless, or even counter-productive, to try to force a complete intellectual property system on a country before the country is adequately developed. It is too early to determine whether the system of pharmaceutical patent protection that the United States has forced on Thailand will be successful.

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215. See Mossinghoff, *supra* note 18, at 316.

216. *Id.*

217. See Frame, *supra* note 204, at 225-27. The following data are taken from that source:

Country	GNP \$ per capita	Scientific Publications	Domestic Patent Application	U.S. Patents
Canada	\$17,723	17,218	25,707	3,548
South Korea	\$1,919	389	6,394	94
Taiwan	\$3,061	622	n/a	338

*Id.*

218. *Id.* at 213, tbl. 1, 226. The following data are derived from that source:

Region or Country	Population (Millions)	GNP \$ (Billions)	GNP \$ per capita	Scientific Publications	Domestic Patent Applications	U.S. Patents
1st-Tier LOWCOMM (average)	74.4	109.63	1,682	634	3,449	86
Thailand	52.80	52.40	992	218	563	4

*Id.*



B. *Proposed Alternatives to Current U.S. Practices*<sup>219</sup>

If strengthening intellectual property protection harms rather than benefits developing countries, the wisdom of the U.S. policy is questionable. A mechanism should be created that will protect a developing country from economic damage and promote development until that country reaches the stage at which it is profitable for the country to strengthen its intellectual property laws. One possible solution is to use economic incentives to alleviate potential damage.

There are three reasons why WICs should grant incentives to the least developed nations. First, unrestricted aid is necessary to develop the infrastructure of these countries so that the economy can improve to the point where protection of intellectual property is beneficial. Much of the current U.S. foreign aid to under-developed countries is granted with this goal in mind.<sup>220</sup> Second, incentive aid should be aimed specifically at reducing the costs of the imposed intellectual property systems. Because, initially at least, WICs would be the major benefactors<sup>221</sup> of the intellectual property system, they should help to defray the costs. Fortunately, the costs of operating a patent system in the poorest countries would be low; these countries represent such poor markets that the United States and other WICs do not bother to protect most of their intellectual property there. Thus, the volume of patents (and, therefore, the administrative costs of the system) will be low. Third, aid is needed to overcome the damage to developing economies caused by the increased costs of protected technologies—particularly those involving food production or healthcare.

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219. Many authors have recognized that direct imposition of a Western-style intellectual property system can work great hardship on a developing nation. The alternatives presented are a synthesis and reworking of many of these plans. Therefore, it is difficult to attribute any one part of the proposal to a particular author. An interested reader should consult the following sources and the references therein: Emmert, *supra* note 7, at 1379-99; Oddi, *supra* note 12, at 865-77; O'Neill, *supra* note 84, at 623-26; Wolfgang Fikentscher, *Third World Trade Partnership: Supranational Authority Vs. National Extraterritorial Antitrust—A Plea for "Harmonized" Regionalism*, 82 MICH. L. REV. 1489, 1505-09 (1984). See Kastenmeier & Beier, *supra* note 106, at 301-07; Gregory J. Koebel, Comment, *Protection of Intellectual Property Rights in Singapore and Thailand: A Comparative Analysis*, 13 BROOK. J. INT'L L. 309, 329-39 (1987).

220. For an excellent treatment of U.S. foreign aid goals in Thailand, see generally MUSCAT, *supra* note 73.

221. Even after a developing country has reached the third stage of development, the number of inventions patented by its citizens will be much smaller than the number of inventions patented by citizens from WICs.

One question is whether the incentives for introducing a Western-style intellectual property system should be given to all countries or only to countries above a developmental threshold. In other words, should the countries be ignored until they reach the stage-two to stage-three transition or should the incentives to implement an intellectual property system be introduced even in stage-one countries? A uniform policy of encouraging all countries to adopt intellectual property protection is probably preferable. It should be easier to encourage a developing country to adopt an intellectual property system before it reaches the "pirating" stage of economic development. Once a country has developed a significant number of businesses that profit from pirating, these businesses will become a political force that will oppose the adoption of intellectual property regulations.<sup>222</sup> In addition, the United States might find it extremely difficult to determine when a country had reached the proper developmental stage for the imposition of an intellectual property system.<sup>223</sup> It would be simpler to encourage an intellectual property system in all countries regardless of developmental stage. In any case, the incentives should continue until the country has reached a level of development where benefits of intellectual property protection clearly outweigh its costs.<sup>224</sup>

Deciding when to end the incentives would also be difficult. Employing economic indicators should provide a rational basis for such a choice, however.<sup>225</sup> The incentive aid will ensure that intellectual property protection does not increase the overall cost of vital technologies to developing economies and, thus, impede de-

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222. An example is the vocal opposition to the granting of pharmaceutical patents in Thailand. See *supra* note 167 and accompanying text.

223. The present system under Special 301 achieves the same results as a system designed to impose intellectual property protection when a country has reached the "pirating" stage of economic development. This is the stage where, arguably, their activity begins to harm U.S. concerns. It is likely, however, that an intellectual property system will not be advantageous for many countries at this stage. By ignoring countries before they reach the "pirating" stage, the present system selects the "level of development" approach by default.

224. Some authors have suggested the use of an incentive system, but have emphasized that the incentives must be strictly limited in time so that the developing countries will be encouraged to progress quickly to true intellectual property protection. See Kastenmeier & Beier, *supra* note 106, at 304. The problem with setting time limits to the incentives is that real hardships will ensue if incentives are terminated before real benefits outweigh the costs of the imposed intellectual property system.

225. For an explanation of economic models that could be used to determine when the technological capacity of a country has increased sufficiently to benefit from intellectual property protection, see *supra* notes 199-217 and accompanying text.

velopment. Eventually, the economic benefits of intellectual property should overwhelm its costs, and further incentive aid will be unnecessary.

The form that the incentive aid should take must still be decided. Certainly, foreign aid payments to fund-development projects should continue. Direct aid payments should also be made to defer the operational expenses of fledgling patent systems until they can be supported by user fees. The problems surrounding the payment of royalties on pharmaceuticals and similar health/food items are more troubling. There are two competing goals. On one hand, it is in the interest of the United States to stimulate the economies of developing nations and to ensure their welfare. Not only would vigorous economies in the Third World provide a market for U.S. products, but peace and prosperity in the Third World would allow the United States to reduce its own internal military expenditures. On the other hand, the U.S. Government is also under considerable political pressure to guarantee the profitability of U.S. pharmaceutical companies by allowing them to collect royalties on the international use of their patents. Perhaps, this second goal is now less cogent than it was during the Reagan and Bush Administrations, considering the Clinton Administration's efforts to lower the domestic costs of pharmaceuticals.<sup>226</sup>

Nevertheless, both goals could be met by making pharmaceuticals available to developing nations without royalty costs and having the U.S. Government rebate to the manufacturers a royalty payment based on the number of units shipped. Alternatively, the United States could allow its pharmaceutical companies to collect its foreign royalties, but then rebate the royalties as foreign aid to the lesser-developed countries. The drawback of this latter approach is that drug prices might increase unconscionably, and there is no guarantee that the foreign governments would share the rebates with their poorest citizens. It should be remembered that if the power of the United States is used to further retaliatory trade policies that force protection of pharmaceutical patents, the U.S. Government will effectively be subsidizing the pharmaceutical industry anyway. One unfortunate aspect of such policies is that the rest of the United States' foreign trade must

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226. It seems inconsistent to insist that foreign consumers should pay U.S. pharmaceutical companies more and, at the same time, insist that domestic consumers should pay them less.

bear the costs of the subsidy when the retaliatory tariff costs are passed on as higher prices on exports from developing countries. Nevertheless, this is the approach sanctioned by the current statutes.<sup>227</sup> Once the royalty costs are covered by a subsidy, it might become economically viable for U.S. companies to undertake pharmaceutical production in the foreign country. In this way, the promised benefits of an intellectual property system would be obtained more rapidly.

The key to the subsidy system would be to end (perhaps gradually) the subsidy once the country reaches an adequate level of economic development.<sup>228</sup> It is also possible for the exact criteria for ending the subsidy to be negotiated on a country-by-country basis. It is highly unlikely that a country could (or would want to) retard economic development artificially, simply to keep receiving a subsidy on pharmaceuticals. Thus, the goal of worldwide intellectual property protection could be achieved while ensuring the developing countries that such a system would necessarily be to their benefit.

### C. *The Situation in Thailand*

The United States seems to have succeeded in forcing Thailand to change its patent laws to permit protection of pharmaceuticals.<sup>229</sup> It remains to be seen, however, whether Thailand will rigorously enforce the new law. The proposed economic model predicts that, if the Thai economy is sufficiently developed, pharmaceutical patents will prove beneficial. Otherwise, the new patent policy will damage Thailand's economic development and will probably not be enforced rigorously. United States policy should be based on a rational assessment of both a country's level of development and the long-term costs of an imposed intellectual property system, and not on bullying threats designed to maximize the short-term profits of U.S. corporations.

Most countries are unwilling to give up control over vital internal functions, such as healthcare or food production.<sup>230</sup> Thus, Thailand, a country that already lacks sufficient funds for necessary

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227. See *supra* notes 121-28 and accompanying text.

228. The phase-out of subsidy could be based on key economic factors, such as individual yearly income, gross national product, and filings for U.S. patents by that country's nationals. See *supra* notes 199-217 and accompanying text.

229. See *supra* part IV.C.

230. See *supra* note 48 and accompanying text.

development, will naturally resist policies that cause drug costs to escalate. It is unrealistic to claim that the piracy of patented drugs by Thailand or other developing countries will discourage the development of new drugs in the United States. The risk-benefit analyses that lead companies to fund the development of currently patented pharmaceuticals were made with full knowledge of the fact that many countries do not recognize patents on pharmaceuticals. Thus, consumers in WICs covered the cost without expecting any contributions from the Third World. If Thailand and other countries pay royalties, the pharmaceutical companies will receive a windfall.<sup>231</sup> It is also unrealistic to expect Thailand to make a prospective contribution<sup>232</sup> by promising to honor the patents of future pharmaceuticals, unless those drugs are designed to meet the needs of Thailand.

The current confrontation with Thailand provides an ideal opportunity for the United States to test and perfect the incentive system described above. Thailand is not yet as developed as countries that have recently been successful in switching over to a U.S.-style intellectual property system.<sup>233</sup> Rather, it is in an intermediate position of development.<sup>234</sup> Even before the recent U.S. pressure, Thailand's patent laws provided protection for most forms of technology.<sup>235</sup> Thus, Thailand was already moving towards the type of intellectual property system favored by the United States. Thailand was probably willing to grant protection to most inventions because the Thai Government had already determined that it was to Thailand's advantage to compete directly in those areas of technology. Only in pharmaceuticals and agriculture did the Thai Government restrict patent protection.<sup>236</sup> Rather than alienating an ally through threats of trade retaliation, the U.S. Government should apply the suggested incentive system to help Thailand move all the way to a Western-style intellectual property system.

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231. See Oddi, *supra* note 12, at 845-45.

232. That is, a system that enforces the intellectual property rights to future pharmaceuticals on the grounds that such a system would equitably share the development costs of those drugs.

233. See Mosinghoff, *supra* note 18, at 310.

234. For a comparison of some facets of Thailand's economy with other intellectual property pirating countries, see Frame, *supra* note 204. The cited reference contains considerably more data in an appendix. *Id.* at 225-27.

235. See *supra* notes 21-30 and accompanying text.

236. *Id.*

The United States' response to Thailand's failure to respect pharmaceutical patents should be consistent with its overall policy to further the United States' international trade goals. The likelihood that countries must reach a critical developmental level to make protecting intellectual property rights profitable, coupled with the direct economic costs of an intellectual property system, suggest that an incentive program may be the best way to encourage respect for U.S. intellectual property rights.<sup>237</sup> Incentives could help pay for the needed infrastructure and reduce the time necessary for a given country to develop to the point of voluntarily protecting intellectual property. On the other hand, trade retaliation and premature adoption of intellectual property protection can damage developing economies and will only delay further development of these countries to a level where intellectual property protection becomes beneficial.

The Thais should be given a guarantee that they will receive U.S. pharmaceutical and agricultural inventions without royalty costs if Thailand provides the enhanced patent protection that the United States desires. The United States and Thailand should enter into an agreement to continue this intellectual property royalty subsidy until Thailand reaches a predetermined level of economic development. Thus, both countries will be working toward the improvement of the Thai economy, and U.S. companies will benefit from the increased market provided by an improved Thai economy. This will provide a powerful example as other developing nations see the significant advantage to protecting U.S. intellectual property rights.

#### *D. Summary of Evolutionary Model of Intellectual Property Development*

A nation should base its decision to protect intellectual property on a cost-benefit analysis. A balance that favors intellectual property laws in WICs does not necessarily apply to developing nations.<sup>238</sup> There is empirical evidence that the internal level of creation of patentable inventions and the level of development in a country correlate with the degree to which a country respects or

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237. See *supra* part V.B.

238. See *supra* part III.B.

violates intellectual property rights.<sup>239</sup> These data suggest a natural progression towards intellectual property protection.<sup>240</sup>

In stage one, the economic development of an extremely under-developed country is indifferent to intellectual property protection. The protection of intellectual property will result neither in the use of advanced technology nor in a flow of technology-related capital into the country. Under-developed countries often adopt intellectual property protection systems even though the systems may provide no obvious benefits.<sup>241</sup> More advanced countries, those in stage two, have sufficiently developed economies and the necessary infrastructure to profit from modern technology. These countries become the greatest pirates of intellectual property because they can profit from the intellectual property, but are not yet in a position to benefit from the protection of intellectual property.<sup>242</sup> Eventually, a country reaches stage three, where its economy develops to a point that it begins to create valuable intellectual property. At this time, there will be more long-term value to their economy from protection of the indigenous intellectual property than from continued piracy of foreign intellectual property.

To protect its indigenous intellectual property and to have other countries respect those rights, a sufficiently developed country, one in stage three, will establish intellectual property laws that harmonize with international standards. A natural progression of economic development makes it useless to force premature adoption of intellectual property laws. Yet, subtle pressure may be effective in getting adequately-developed countries to change over to a Western-style intellectual property system. Supporters of U.S. intellectual property rights have cited several recent instances where pressure has forced pirating countries to adopt laws giving enhanced intellectual property protection.<sup>243</sup> These countries probably adopted strict intellectual property laws not only because of threats of trade retaliation, but also because their economies had

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239. See *supra* note 204 and accompanying text.

240. See *supra* part V.A.

241. See Oddi, *supra* note 12, at 852.

242. In other words, their economies are not sufficiently developed to create intellectual property worthy of protection. Unless the intellectual property owners are able to impose truly draconian penalties for the piracy, the cost-benefit balance will continue to favor the theft of intellectual property.

243. See Mossinghoff, *supra* note 18, at 310.

attained the level of development at which intellectual property protection becomes beneficial. On the other hand, retaliatory trade policies might damage the rate of development of a stage-two country and actually delay the adoption of an effective intellectual property system.

## VI. CONCLUSION

This Comment has argued that the factors that favor intellectual property systems in WICs, such as the United States, are related to the economic status of the countries. Rich, well-developed economies benefit from intellectual property protection, while poor, under-developed economies do not. Given proper circumstances, countries progress from an undeveloped state where they are indifferent to intellectual property, through an intermediate state where they benefit economically from the piracy of intellectual property, to a more economically-developed state where they benefit from intellectual property protection.

The goal of the United States in international trade should be to increase the benefits to its own economy. This can be attained by maximizing the volume of foreign trade and by maximizing the royalties U.S. citizens receive from the international use of their intellectual property. This means that developing countries must be aided in their progression towards a stage-three economy that respects intellectual property.

Retaliatory trade policies and other efforts to coerce the premature adoption of intellectual property protection can damage developing economies and run counter to overall U.S. goals. This is especially true where the intellectual property in question is pharmaceutical patents. Forcing a developing country to honor pharmaceutical patents prematurely could directly damage the health of the country's citizens as well as its economy.

Thailand appears to be on the border between a stage-two and a stage-three economy. If its economy is sufficiently developed, it may be able to adapt successfully to the pharmaceutical patent policy that the United States has forced upon it. If its economy is not sufficiently developed, the imposed patent policy will merely slow its economic development to the detriment of both Thailand and the United States. A balanced policy of incentives as suggested in



this Comment is a more certain and equitable method of ensuring Thailand's recognition of U.S. pharmaceutical patents.

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