

WIPO/REG/IP/AMM/04/7

ORIGINAL: English

DATE: May 2004



THE HASHEMITE KINGDOM OF JORDAN



WORLD INTELLECTUAL
PROPERTY ORGANIZATION

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**WIPO ARAB REGIONAL MEETING ON INTELLECTUAL PROPERTY
AS A POWER TOOL FOR ECONOMIC GROWTH**

organized by
the World Intellectual Property Organization (WIPO)
in cooperation with
the Ministry of Industry and Trade / the Department of the National Library
and
the King Abdullah II Center for Intellectual Property

Amman, June 1 to 3, 2004

INTELLECTUAL PROPERTY, TRADE AND FOREIGN DIRECT INVESTMENT

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Knowledge Dependency or Knowledge Development?

Proponents of the “trade dependency” thesis of the 1950s and 1960s argued that the world economy was structured to ensure that the poor developing countries of the South were burdened with trade and foreign direct investment dependence on the rich countries of the North: Multinational business enterprises from the North invested in and sold manufactured goods to the South, exploiting and exporting commodities, aided and abetted by their colonial and neo-colonial governments and their international trade and investment rules (Prebisch, 1959). According to the new “knowledge dependency” thesis, as I call it, MNEs, exploit their North-South knowledge advantages through intellectual property policy-derived monopolies, again aided and abetted by their governments and international trade agreements such as TRIPS (Abbott, 1998; Barton, 2001; Reichman, 1996/97). “The monopoly rights granted by IPRs were regarded as an instrument to avoid further catching-up based on imitative paths of industrialization, that is, as a tool to freeze the comparative advantages that had so far ensured U.S. technological supremacy” (Correa, 2000).

However, are IPRs and MNEs the instruments of *knowledge dependency* or *knowledge development*?

Effective market economies encourage the creation of private business enterprises and force them to innovate or perish by establishing competitive marketplaces in which “the prime weapon of competition is not price but innovation” (Baumol, 2002:ix). Firms exist to organize for the purpose of innovation and they find their marketplace advantages in doing it better than their competitors (Conner and Prahalad, 1996; Grant, 1996). Measured by technological indicators such as R&D expenditures and patents, MNEs based in the North dominate innovation and own much of the world stock of technology (Patel and Pavitt, 1991). What these firms have is technology and organizational know-how with respect to product R&D, process R&D, operations and supply-chain logistics, and distribution and marketing (Kogut and Zander, 1992). What these firms do, their activities of foreign direct investment, licensing and collaborative relationships, and trade, is critical to technology transfer and economic growth in the world economy (Kogut and Zander, 1996).

International trade in goods and services is a fundamental mechanism in cross-border technology transfer; indeed, it may be thought of as international trade in information. Economic growth rates have long been historically higher in the North than in the South because of the North’s more rapid rates of technology and knowledge acquisition and diffusion and much higher rates of international trade among the countries of the North means that the economic growth gaps grow. International trade, international collaborative relationships, and foreign direct investment are closely interrelated and complementary. A study that matches patent citation data with trade data supports the proposition that trade flows encourage knowledge flows (Sjoholm, 1996). Perhaps one-half of US and even more of European productivity growth derives from foreign technology (Eaton and Kortum, 1997) acquired through trade, license, and direct investment (including joint-equity venture and wholly-owned subsidiary). It turns out that the gains from free trade and open investment are much more than efficient resource use and improved consumer welfare, they are technology transfers and knowledge spillovers and enhanced economic growth.

Several studies suggest that these patterns of technology and knowledge acquisition and diffusion likely hold for developing countries as well. In general, trade between North and South contributes to innovative capacities in the South (Krugman, 1979). A World Bank study finds that, comparing the East Asian countries with the countries of Latin America, the Asian countries show larger flows of trade, foreign direct investment, and licensing behavior and suggests that this provides possible reasons for their relatively stronger technological growth (Dahlman, 1994). Another World Bank study, of 77 developing countries over a period of 20 years, finds that a developing country's productivity is larger the greater is its foreign R&D investment, the more open it is to trade with the industrial countries, and the more educated its labor force (Coe, Helpman, and Hoffmeister, 1997). Another study similarly finds that trade, license, and direct investment activities of MNEs decisively contribute technology and managerial know-how to developing countries (Pack and Saggi, 1997).

Weak IPRs discourage precisely the kind of technology-intensive, organizational know-how-diffusing activities of business enterprises based in the North which are most desired by the up-and-coming business enterprises in the developing and transitioning countries in the South and the East. In the late 1980s and early 1990s, while TRIPS negotiations were being conducted in the Uruguay Round, research sponsored by international governmental organizations started to demonstrate with systematically gathered evidence what anecdotal evidence had been saying for years: weak intellectual property protection discourages foreign direct investment in certain industry sectors, especially pharmaceuticals, fine (including agricultural) chemicals, and information technologies. An UNCTAD study (1986) found that direct investment in new technology areas such as computer software, semiconductors, and biotechnology was influenced by IPRs. An OECD study (1987) found weak IPRs to be significant barriers to international technology licensing. A study by UNCTNC (1989) found that weak IPRs reduced computer software direct investment; a study by UNCTNC (1990) found that weak IPRs reduced pharmaceutical investment. The World Bank has through the years conducted some important research regarding IP, trade, and direct investment. Survey research by the Bank's IFC found that, with variations by sector, country, and technology, at least 25% of American, German, and Japanese high-tech firms refused to direct invest or joint venture in developing countries with weak IPR (Mansfield, 1995) and their later study confirmed with actual FDI data the survey findings (Lee and Mansfield, 1996). An Institute for International Economics study of World Bank data concluded that weak IPRs reduce flows of all these commercial activities, regardless of levels of national economic development (Maskus, 2000).

Weak IP regimes create appropriability problems for holders of technology and managerial know-how (Teece, 1986). A patent provides incentives to innovate technologies under circumstances when the costs of new product and process innovation are high while the costs of product imitation (or out-right theft) are low, a circumstance in law and economics known as the appropriability problem (Kitch, 1977; Dam, 1994). Invention is expensive and costs must be recouped if the R&D investment is to take place. If others can appropriate the innovation, calling it their own without having made the investment of time, energy, and resources, then a potential innovator may determine that the regular incentives of market opportunity are insufficient to tolerate a free-riding competitor. Government intervenes by providing rights of patent to the inventor.

The international treaty regarding industrial property, the Paris Convention, since its origins in the 19th century obligated national treatment but not minimum patent protection standards. The Paris Convention as well as most other intellectual property agreements are administered by the World Intellectual Property Organization, an agency of the United Nations. The 1994 GATT Agreement regarding Trade-Related Aspects of Intellectual Property Rights, the so-called TRIPS Agreement, establishes minimum standards of intellectual property protection under the law and authority of the WTO.

TRIPS obligates WTO members to provide for product and process patents, that is, exclusive rights to make, use, sell, import, assign or transfer by license, for a minimum 20-year patent term “in all fields of technology.” TRIPS also establishes public international law obligations regarding trade secrets, plant variety protections, semiconductor mask technologies, industrial designs, and trademarks. Many developing country policymakers maintain that they agreed to TRIPS reluctantly and only because it was “linkage bargain” deal associated with the creation of the WTO and reformed international trade dispute settlement procedures. Opposition notwithstanding, since the agreement establishing the WTO requires member states to accept all WTO agreements, most developing countries are or will be over time party to the TRIPS agreement. However, TRIPS includes the important caveat that middle-level developing countries were to be given 5-year implementation periods and least-developed countries were to be given 10-year implementation periods in addition to the 1-year period provided to WTO members in general. These implementation periods have subsequently been extended by the Doha Declaration of ministers at the WTO (Charnovitz, 2002).

Nevertheless, despite the wide-spread opposition to TRIPS and to IPRs among developing country policymakers and despite the appeal of the knowledge dependency thesis, IPRs promote technology transfer and managerial know-how flows by encouraging MNE trade and foreign direct investment. The knowledge dependency thesis, like the trade dependency thesis before it, misunderstands how commercial organizational capacities and economies are built through knowledge acquisition and diffusion. Effective IPRs are vital tools of knowledge development.

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