

Institutions in a developing economy influence not only the process of globalization but also domestic economic development. However, the development of institutional frameworks is not cost-free. These frameworks develop only when the benefits outweigh the costs of such development. As a theoretical, and exploratory, study, we examine the implications of this cost-benefit tradeoff in the evolution of patent laws in developing economies. There is some evidence to support the notion of an implicit cost-benefit calculus, and also the idea that alternative or transitory institutions develop on the path to more enduring structures.

Dunning and Narula (1996) suggest that “[t]he ability of a country to upgrade its technological and human capabilities is a function of its own location-bound endowments and, in particular, of its natural assets, the characteristics of its markets, and the macro-organizational strategies of its government.” We may interpret “macro-organizational strategies” to include the development of institutions to guide and influence the behavior of economic actors. A sampling of such institutions could include an educational framework to provide skilled labor, capital institutions to provide financial support and services, and a system of property rights to provide incentives for the development of private property. In this paper, we focus on the last of these, namely the development of a system of property rights.

Property rights do not refer to “*relations between men and things but, rather, to the sanctioned behavioral relations among men that arise from the existence of things and pertain to their use*” (Furubotn and Pejovich, 1972, p.1139, emphasis in original). Evidently, for property rights to have economic significance, i.e., to lead to sustainable rents, the resources to which property rights pertain must lend themselves to the exercise of these rights. What, then, is the structural framework within which property rights can be obtained and enforced, and how does this structure come into being?

There is no economic purpose to the development of institutions to protect a resource, if that resource that is not valuable; hence, the emergence of property rights is closely linked with the value of a resource. Mahoney (1992, p.126) suggests that there is a duality between the value of a resource and private property rights as “delineated property rights make resources valuable and as resources become more valuable, property rights become more precise”. Similarly, North (1990) suggests a duality between political rules and economic rules, that is “property rights and hence individual contracts are specified and enforced by political decision-making, but the structure of economic interests will also influence the political structure.”

However, the development and enforcement of property rights is not free of costs. Evidently, the development of a system of property rights depends on the costs of such development outweighing the potential benefits. For instance, De Alessi (1983) suggests that transaction costs influence the structures of rights. Similarly, North and Thomas (1973) proposes a cost-benefit analysis of the costs of devising and enforcing such rights as contrasted to the benefits that potentially stem from these rights. In short, property rights are created when it becomes worthwhile to incur the cost of devising such rights.

Why we need a system of patents?

Intellectual property rights are a subset of property rights. A number of theories have been put forward to explain why patents are needed. The natural rights theory suggests that the creator is entitled to the intellectual fruits of his or her labor. That is, because a person is the first to discover an idea, he or she is entitled not only to the use of the specific instance of that idea, but also was entitled to prohibit others from similarly using it. Ownership extended from one's own instance of an idea to all instances of the idea.

The prospect theory of patents (Kitch, 1977) posits that the rationale for granting patents is not so much a reward for past innovative activity, but an incentive for (future) developmental activity. This perspective is consistent with considerations such as commercial success.

Some Arguments Against Patents

Arguments against patents include the fact that higher prices may be charged for patented products. There are also allocative costs due to inefficiencies caused by patents on inventions that would have been made without patent protection. Further, we need to consider the costs incurred by both patent administration and by patent applicant.

The costs incurred by the patent administration system include the cost of processing applications, the cost of granting applications, and the cost of adjudicating disputes. Costs incurred by patent applicants include the cost of maintaining corporate patent departments, cost of patent counsel, lobbying activities toward influencing patent policy.

Patents in the pharmaceutical industry

Patents play a particularly important role in the pharmaceutical industry. Pharmaceutical innovation is quite costly. A Standard and Poor Industry Survey (Standard and Poor Industry Survey, 1998) estimated that "development of a new drug can take some 10 to 15 years and cost more than 500 million". Moreover, the success rates for the complete process of drug development from synthesis of a drug to market approval have been estimated at less than 0.1 percent. While development of drugs is a lengthy and expensive process, their imitation is often simple and inexpensive leading to significant revenue loss for innovating firms. 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 (Mossinghoff, 1987). Therefore, effective patent protection is a necessary incentive to pharmaceutical and chemical research given the enormous costs and risks involved. In the absence of some form of exclusivity, this knowledge would be highly subject to involuntary transfer.

Arguments Against Patents in Pharmaceuticals

There are some cogent arguments against patents for pharmaceutical products.

First, While patents are needed for pharmaceutical innovation, prices are higher for patented pharmaceutical drugs. This price differential becomes evident when drugs lose their patent protection. For instance, Griliches and Cockburn (1994, p.1214) suggests that “[w]hen the patent on the incumbent firm’s product expires, several generic versions appear relatively quickly, selling at much lower prices, typically from 30 percent to 50 percent cheaper than the original versions.” Similarly, Eli Lilly reports that in 1994 the U.S. sales of Dobutrex declined approximately 91% compared with 1993 because of the product’s patent expiration in October 1993.

Second, availability of patents for certain pharmaceutical products, and the higher prices associated with patent-protected products, implies that pharmaceutical firms may not have a strong incentive to develop non-patentable products that, while necessary from a public policy perspective, are not profitable to the would-be innovator.

Third, patents may polarize the market in favor of larger firms which have the resources to invest in research and development, and drive out smaller firms which have essentially been producing copies of drugs. In a developing economy, this might mean that foreign multinationals supplant indigenous manufacturers. The absence of product patents may provide an environment conducive to indigenous participation in the pharmaceutical industry. Redwood (Redwood, 1994) points out that, in the 23 years since the introduction of the Indian Patents Act in 1970, Indian ownership of drug firms increased from 20% in 1970 to 61% in 1993.

Fourth, it is not clear that granting product patents will encourage further investment in pharmaceutical research and development. Deardorff (Deardorff, 1992) argues that the availability of product patents for drugs is not likely to substantially encourage new pharmaceutical R&D given diminishing returns in new drug development. This view is supported by Hamied (cited in Cherukuri, 1999).

Finally, on humanitarian grounds, it can be argued that essential drugs should be available to fight life-threatening diseases irrespective of the patients’ ability to pay. As Indira Gandhi, the Indian Prime Minister in 1975 put it, “medical discoveries will be free of patents and there will be no profiteering from life and death” (Nachane, 1995).

A System of Property Rights for a Developing Economy

Governments of developing economies frequently have to make a trade-off between the potential benefits of a system of property rights and the possible costs that such a system may entail. For instance, the basic law governing patents in India is the Indian Patents Act (1970). This act recognized process patents (which protected a method of making a given drug) but not product patents (which would protect the end product itself, irrespective of the method of manufacture). The patent regime in India while encouraging and protecting inventions, seeks to tackle the problem of poverty by ensuring availability of critical products like foods and medicine at affordable prices. Non-patentable inventions include methods for treatment of the human or animal body by surgery or therapy or diagnostic methods practiced on the human or animal body.¹ Along the same lines, Kaufer (Kaufer, 1989) based on the historical pattern of industrialization in Holland, Germany and Switzerland, points out that it may be advantageous not

¹ Note the similarity with Japan’s 1888 revision of its patent laws which declared inventions of inter alia, food and medicine as unpatentable goods. (Kawaura and La Croix, 1995).

to have a patent law if domestic inventive capabilities can imitate technologies developed by foreign enterprises. Only after industrialization has progressed and technical skills have developed to a higher level does the nation introduce a patent system to guide domestic inventive activity away from imitation and toward more original work. Similarly, Hamied (cited in Cherukuri, 1999) suggests that India “is not at a stage of development to provide for patent monopolies.”

Under these circumstances, it might perhaps be more appropriate for developing economies to look to alternative structures for protecting property rights in pharmaceuticals. For instance, as a signatory to the Trade Related Intellectual Property Rights provisions of the World Trade Organization, the Indian government has until 2005 to put a product patent regime in place. Until such time, qualifying firms will be given exclusive marketing rights (EMRs). An EMR shall be granted to a firm provided:

it has filed a product patent application in another WTO member country on or after January 1, 1995.

the firm has a patent in the WTO member country, and it has obtained approval for marketing a given product;

the firm has obtained approval for marketing the product in India, and

the term of market exclusivity does not exceed five years from the date of marketing approval or till the date of grant of patent, or the date of rejection of the application for patent, whichever is earlier.

In effect, the EMRs provide an alternative property rights structure that facilitates a transition to a full-fledged product patent regime.

Another possibility is the protection of these property rights through ownership of complementary assets. For instance, investment in establishing and developing brand equity may facilitate marketing of pharmaceutical products. While it may not be possible to keep out imitators in a market where there is no product patent protection, it may be possible to encourage customers to choose branded products.

Cherukuri (Cherukuri, 1999) distinguishes between ‘common drugs’ (vitamins, rubs and balms, anti-inflammatory and analgesic drugs etc.), and ‘essential drugs’ (cardio-vascular drugs, antibiotics, antibacterials etc.). This distinction bears a close resemblance to the more common classification of over-the-counter and prescription drugs. To a large extent, over-the-counter drugs are self-prescribed by the patient and hence may be more responsive to the ‘persuasive effects’ of branding and firm reputation. In contrast, prescription drugs are vouched for by authoritative figures such as physicians and pharmacists and do not require the support of branding to the same extent.

This is a plausible explanation for the fact that, for the top (in terms of sales) 120 drugs in India multinational firms have a 90% share of the market for 'common drugs' but only a 29% share of the market for 'essential drugs' (Cherukuri, 1999)².

In effect, what we observe is the development of property rights structures that appear to represent a trade-off of the costs and benefits of these structures. Indeed, in an analysis of the introduction of product patent laws in Japan, Kawaura and La Croix (1995) empirically demonstrate that the Japanese government revised its patent laws only when domestic products would profit from the change.

² Cherukuri does not specify the period for these statistics.

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