

# **Innovation, Technical Change, and IPRs in the Development Process: A Long Term View**

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Place the discussion of IPR effects in the broader context of the determinants of technological innovation, imitation, diffusion and catching-up

Some fundamental premises:

a) The rate of innovation fundamentally depends on:

- the opportunities associated with different technological paradigms
- the capabilities of economic agents tapping them

- Our point is that any satisfactory attempt to analyze the role of IPR in influencing the rate of generation, adoption and diffusion of innovative knowledge should start by recognizing “what is technology”.
- Technology cannot be reduced to the standard view of a set of well-defined blueprints. Rather, any definition should encompass the means, the methods, the know-how, and the problem-solving activities through which agents “do things”. This helps to explain why firms do not always adopt frontier technologies, i.e. it is far more complicated than replicating blueprints.
- It is precisely because knowledge is partly tacit and embodied in complex organizational practices, that technological lags and leads within and between firms, industries and even countries may well be persistent beyond the boundaries established by legal appropriation mechanisms, like intellectual property rights.
- Asymmetries in technological capabilities (between firms and countries) are likely to persist over rather long spans of time, beyond the legal mechanisms defying the appropriability and transferability conditions of technologies.

b) The existence of some appropriability of economic benefit is a necessary condition for private profit seeking actors to undertake expensive research;

however,

c) There is no evidence that intensity of search is monotonic in degree of appropriability

moreover,

d) IPR is only one of the mechanisms of appropriability –and not the most important one (possible with the exception of biotech and pharma). Other (more important) factors include:

-lead time

-secrecy

-product complexity

-complementary assets (e.g. complementary manufacturing capabilities)

What Impacts Patents Have Had Historically?

Non-Pharmaceutical

Why we don't see much impact there?

Pharma: Selected Cases

Italy

Switzerland

US

India

Brazil

## **What about development and catching-up?**

### **Again a fundamental importance of imitation, learning and accumulation of local capabilities**

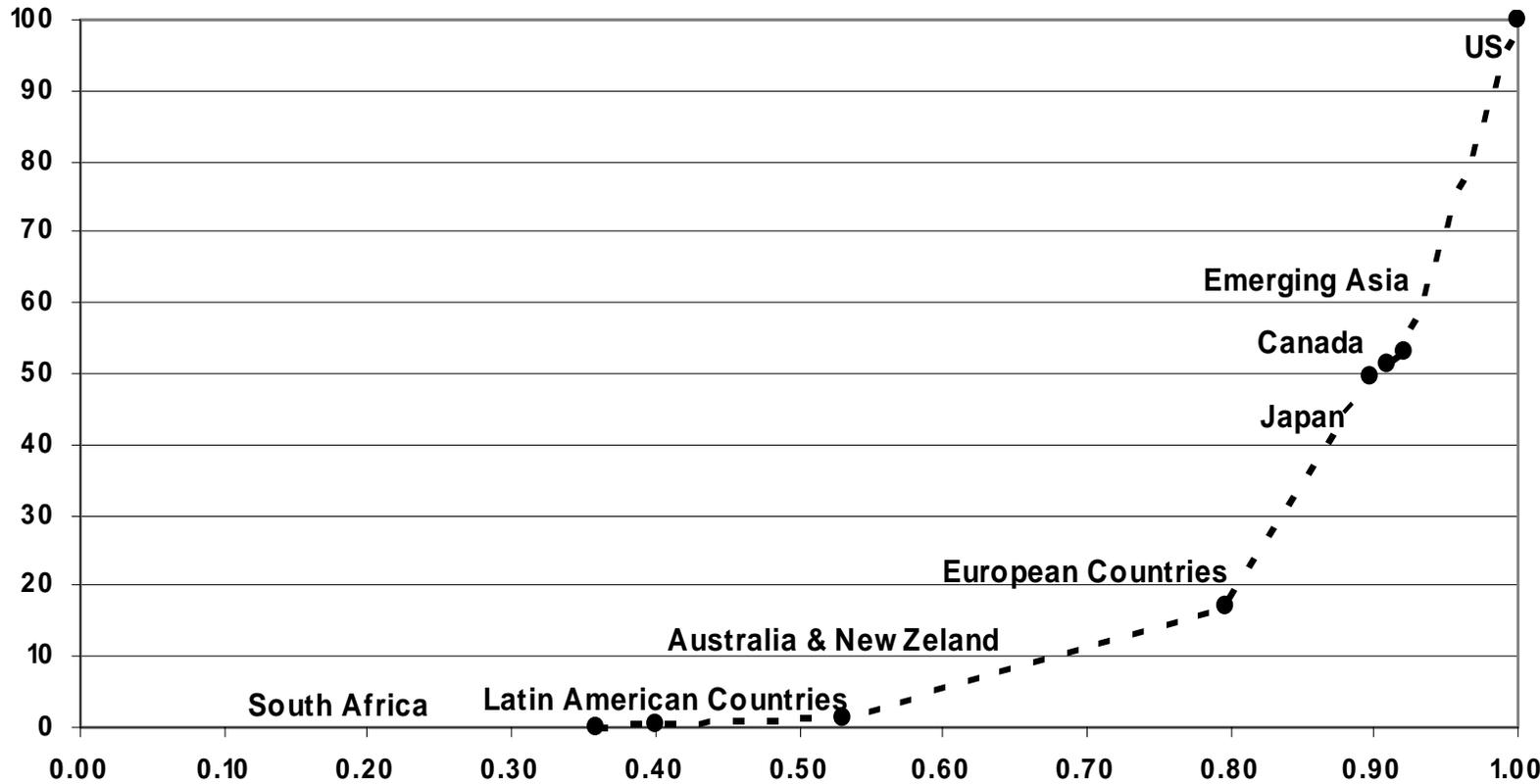
Technological asymmetries and gaps between firms and countries appear more as sticky features than as transitory stages of (automatic) adjustment processes.

it can be argued that innovations in a developing economy consist predominantly of products and processes that are new to local firms, or to the national economic context, rather than to the world.

Whenever present, the elements of novelty are likely to consist of minor or incremental modifications of technologies whose basic characteristics have been defined by innovators located in other countries.

**Historically, there is the evidence that a loose regime of IPR is conducive for the process of catching-up (also in countries that are now developed like Germany, USA, Japan...)**

**THE KNOWLEDGE CURVE:  
PRODUCTION STRUCTURE SPECIALIZATION AND PATENTING**



**Technological Specialization Index 2001-2003**  
 (share of technology intensive sectors in each geographical area versus the share of technology intensive sectors in the US)

# Transmission of technological information

## Disclosure function

FDI, licensing

Patent Laws in Developing Countries

Characterizing Patent Systems

Patentable Subject Matter

Patent Standards

Patent Scope/Length

Enforcement (including compulsory licensing)

Provision	Article of reference	(Effective) Policy Spaces
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**Special and Differential Treatment (SDT)**

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<p><b>Transitional Periods</b></p>	<p><b>TRIPS, art. 65, par. 2-5</b>          Developing countries are entitle to delay for a given period the date of application of (given) provisions of the agreement</p> <p><b>TRIPS, art. 66.1</b>          Least Developing countries (LDCs) are entitled to delay for a period of 10 years the application of TRIPS provisions, other than Articles 3,4 and 5. Upon motivated request by a LDC the Council for TRIPS may accord extensions of this period</p>	<p>The Dhoa Declaration on TRIPS Agreement and Public Health extended the window for LDC's even beyond what the original TRIPS allowance.</p>
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<p><b>Technical and Financial Cooperation</b></p>	<p><b>TRIPS, art. 67</b>          On request and on mutually agreed terms and conditions, developed countries shall provide technical and financial cooperation to developing and LDCs</p>	<p>Non-legally binding provision</p>
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<p><b>Technology Transfer</b></p>	<p><b>TRIPS, art. 66.2</b>          Developed countries should provide incentives to enterprises and institutions in their territory to promote and encourage technology transfer to LDCs</p> <p><b>Doha Declaration, art.7</b>          Reaffirms the commitment of developed countries to provide incentives to promote and encourage technology transfer</p>	<p>Non-legally binding provision</p>
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## Flexibilities

### Compulsory Licensing (CL)

TRIPS, art. 31  
Governments are allowed to authorize a party other than the holder of a patent on an invention to use that invention without the consent of the patent holder, on the condition that efforts have been made to obtain the authorization from the right holder on reasonable commercial terms within a reasonable period of time. In case of national emergency, other circumstances of extreme urgency and public non-commercial use the requirement of prior efforts does not apply.

Only countries with a certain production and technological capacity may make use of this provision. If the country is credible (in terms of industrial capacities, market structure and public policy) this instrument can be used as a negotiation threat. Strong political will and commitment is necessary. TRIPS does not stipulate the grounds upon which a compulsory license should be granted. Thus member countries can make provisions for CL on any ground. TRIPS only mandates certain procedural pre-requisites such as voluntary negotiation prior to the grant of a license etc. In the case of national emergencies, or if the CL is being granted to remedy an anticompetitive practice, then these pre-requisites need not be met. If the country in question lacks the necessary manufacturing and technological capacities, the Doha declaration and its 2003 implementation provide for a CL that would enable export from countries that have such manufacturing capabilities.

### Exhaustion (national, regional and international exhaustion) (Parallel Imports)

**TRIPS, art .6**  
For the purposes of dispute settlement under this Agreement, subject to the provisions of art.3 and 4, nothing in this Agreement shall be used to address the issue of the exhaustion of IPRs. This article addresses the exhaustion of IPRs that is crucial in international trade because it addresses the point at which the IPR ceases. This provision implicitly addresses the issue of parallel imports (i.e. products placed on the [market](#) in one country and subsequently imported into a second country without the permission of the owner of the [intellectual property](#) right in the second country)

The only obligations under the TRIPS Agreement that can be used by one country to challenge another country's position on parallel imports are those relating to national treatment (Article 3) and most-favored-nation treatment (Article 4).

The exhaustion regime of IPRs depends on national laws.

### Exceptions to rights conferred Bolar Exception

**TRIPS, Art.30**  
Members may provide limited exceptions to exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.  
The Bolar exception was first introduced in the US Drug Price Competition and Patent Term Restoration Act in 1984 following the court ruling Roche vs Bolar Pharmaceuticals. The US law enables testing to establish bio-equivalency of generic drugs before patent, expiration. This mechanism allows generic producers to place their products on the market when the original patent expires

National law can introduce exceptions according to art. 30.

According to a WTO dispute settlement in April 2000 Canadian law conforms to TRIPS in allowing manufacturers to exploit this exception. (WTO case “Canada: Patent Protection for Pharmaceutical Products”).

This exception has been explicitly adopted by Canada, Australia, Israel, Argentina and Thailand. In the EU it has been used in case by case to solve disputes. In the Canadian case, the WTO upheld the “Bolar” provision but struck down the “stockpiling” provision, stating that this contravened Article 30

Conclusions:

The Potential Impacts of IPR on Innovation and Development

Upper Bound Scenario

Lower Bound Scenario

What Factors Will Determine Actual Impact