

Intellectual Property in the International Arena: Incentives and Rent-Seeking

IPRIA, University of Melbourne
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Patent Incentives and Patent Politics

- **Incentive** purpose of IP: Promote R&D
In international arena: Promote domestic interests
Tradeoffs:
 - Innovation versus deadweight loss
 - Deadweight loss versus inefficiencies of public sector
- **Political** purpose of IP:
 - collect profit from abroad
 - avoid profit flows to foreign jurisdictions
- **The political purpose interferes with choice of incentive systems.**

Who patents, and where? And why?

How much international crossover?

- Almost all patents are issued to Japanese, European, US inventors
- The “trilateral block” are about 13% of world population
- Populations 2002 Japan (16%) EU(47%) US (37%)
- Relative GDP 2002: Japan (18%) EU (36%) US(46%)
- What would we expect? Patents in these proportions
- Domestic bias:
 - About half of patents in the U.S. are non-American.
 - About half of patent applicants to the European Patent Office are non-European
- Japanese bias.

About 80% of Japanese patents are to Japanese inventors, and Japanese inventors patent disproportionately in EU/US.

An IP scholar's view of history: four periods

0. Prehistory (no IP protection) before the 1600s
1. Autarky (local protection for local inventors)
Before the Berne and Paris Conventions of the 1860s
2. National Treatment; no guidelines.
The 100+ years between Paris Convention and TRIPS.
3. Post-TRIPS: Harmonized protections. All inventors get the same minimum protections in all jurisdictions

Observations on Incentives

- Autarkic period: *reciprocal externalities* among nations, but inadequate incentives in small countries.

- Intermediate period: *national treatment*

A single high-protection country might provide funding for all the innovations in a single subject matter.

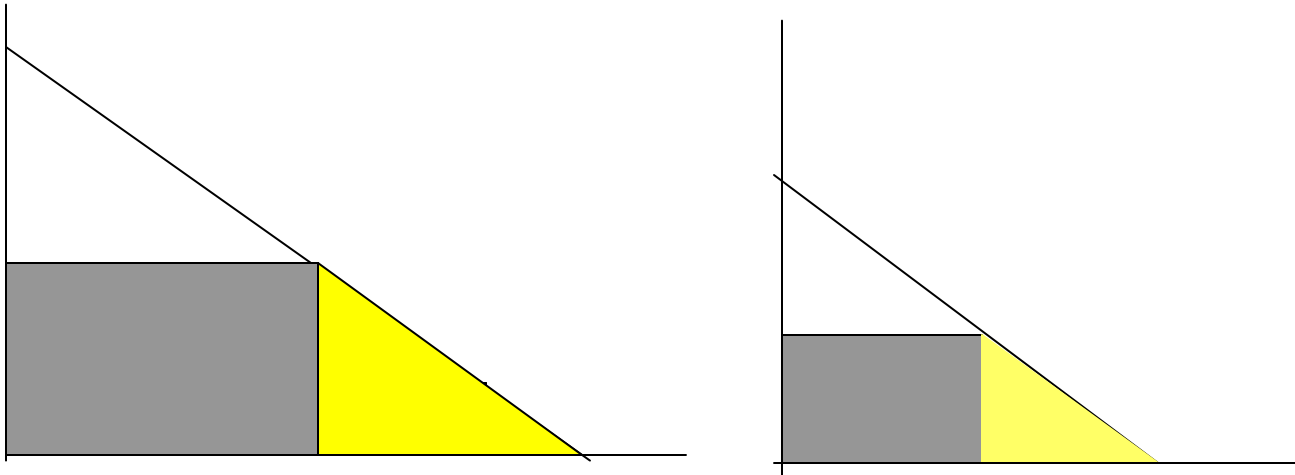
What would a country like best?: To free ride.

Strong protections abroad, and weak protections at home.

- Current period: *harmonization*

An opportunity to meddle in policies abroad.

- Efficiency Goal:
Maximize the ratio of profit to deadweight loss.
- **The regimes may be equally efficient from the point of view of global deadweight loss.**
- Ratio Test: Tax the market with largest ratio.
- Conclusion: Efficiency is the same regardless of size, since the ratio is the same.



Message: It's all about equity, not efficiency.

Conflicts are largely about dividing the pie (who pays), not about efficiency

- Domestic cost/benefit analysis
 - 1 join treaties for national treatment?
 2. choose weak or strong protections?
 3. advocate expansions of harmonized protection?
- Within the national-treatment regime, will independently chosen protections be too weak? free riders?
- Will harmonization lead to protection that is too strong?
- What does all this do to the balance between public and private research?
- Which types of countries prefer harmonized stronger protections?

In the beginning was Autarky

- Free Riding
- Why should a small country provide protection?
Whether or not its own innovators are protected in the large markets, its own market cannot support innovation.
- Large countries may provide protection, create most of the innovations, and provide externalities for small countries.
- No innovation from small countries
- Clearly not a good system if countries are small.

1860s to 1990s: National Treatment, Independent National Choices

- **“Free-riding” and inequity:**

Country “a” may refuse to protect a subject matter because it is protected in country “w”, if protection in “w” is mostly sufficient to cover invention costs.

- **“Free-riding” and a race to the bottom:**

... but then “w” has an incentive to drop its protection, especially if it thinks that public sponsors will step in.

- **Bilateral failures to protect.**

Neither country protects because unilateral protection does not suffice, regardless of which country. Countries fail to coordinate on protection.

Period after 1994 TRIPS: Harmonization

- **Too much protection?**

With harmonization, IP choices are too binary.

“Effectively” every subject matter is protected everywhere or nowhere. Some subject matters do not need so much protection.

- **Crowding out of public-domain science?**

With public sponsorship, there is no way to repatriate the benefits conferred abroad.

Harmonization: How do disagreements depend on asymmetries?

- Two asymmetries: size and innovativeness
- Size & innovativeness: correlated?
- Conflicting Effects:
 - Size: larger countries want more public sponsorship abroad, and less IP
 - Innovativeness: More innovative countries want more global IP

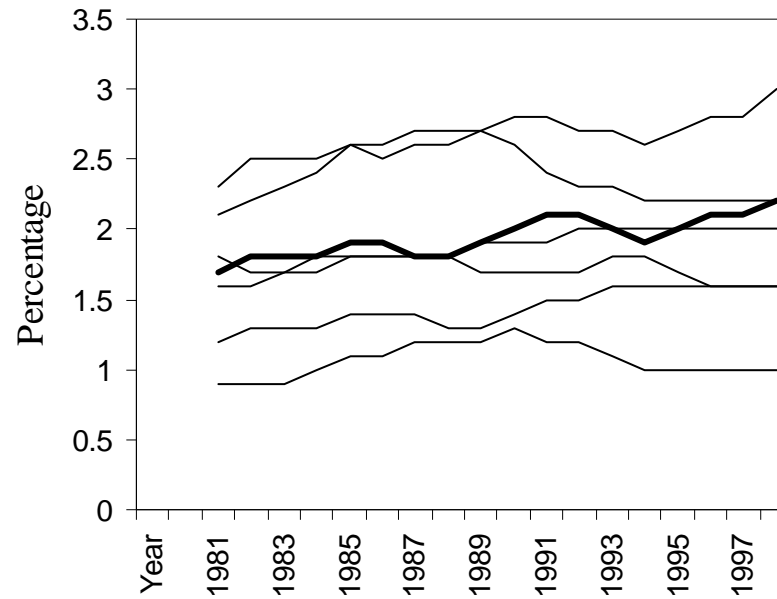
What can harmonization accomplish?

- Can only strengthen protections; will typically do so.
- Cannot achieve what might be the first-best solution: Autarky and reciprocal externalities.
- Can solve the multilateral coordination problem (at least when there is no disagreement)
- Cannot (efficiently) remedy free riding.
Remedies the inequity with overprotection
- Harmonization may occur where public sponsorship would be better (next slide)
- Cannot remedy the failure to provide public sponsorship when domestic benefits are less than cost (next slide)

Is the public sector an orphan?

- Crowding out public-domain knowledge
Public-domain knowledge creates externalities abroad.
Protecting the knowledge with IP allows the benefits to be partially repatriated as profit.
Further: If a country is small, the national benefits of public-access research may not justify investment, whereas the prospect of profit from abroad may tip the balance.
- Counterexamples:
Human genome project
California Institute for Regenerative Medicine
Space station
CERN nuclear physics facility
Various research efforts of the World Health Organization
(very limited)

R&D: How much, by whom?



In decreasing order of terminal (1998) values:
Japan, Germany, U.S. (in bold), France, U.K., Canada, Italy

Public sponsorship:

E.U. 44% public sponsorship

U.S. 26% (ratio of public/private was 2:1 in 1950; now 1:3)

Australia, Brazil, Chile, Costa Rica and Mexico:

substantially over half of R&D is publicly sponsored