

**To what extent should less  
developed countries enforce  
Intellectual Property?**

Gilles Saint-Paul

# The case for Intellectual Property

- Inventing a new product is costly
- If an invention can be freely copied, competitors will use it at no cost
- The price falls to its marginal production cost
- The inventor will not recoup the costs of his invention
- Too little innovation

# IP as a second best policy

- Intellectual property rewards innovators by granting them a monopoly right over their invention
- But the price is too high, and output too low, relative to the optimum

# The free lunch argument

- Consider an economy which is
  - Small
  - Has no R & D sector
- Not enforcing IP has a negligible impact on global innovation
- But it benefits its consumers through lower prices
- Even with an R & D sector, it can free-ride on global IP.

# Global consequences

- If many countries act that way, world market size for patented goods falls.
- World growth and innovation smaller
- Effect can be large: a 1 % increase in market size for pharmaceuticals increases innovation by 4 %
- Flow of new software would double if piracy in Developing Countries converged to OECD

# Gainers and losers

- Even if world growth smaller, Developing Countries may still gain because of cheaper products
- More likely if innovators are in developed countries, then IP creates a transfer from South to North
- Poorer consumers care less about diversity: less gain from innovation, but less losses from expensive patented goods (can consume generics)

# Estimating the gains

- Traditional estimates of TRIPS impact find South→North transfers
- But they ignore gains from innovation
- Consumers in a non innovating country gain provided

$$d \ln p < (d \ln n)/(\sigma-1)$$

# The role of coordination

- Coordination of IP policy may improve welfare, as in other areas.
- Would lead to higher IP levels than otherwise
- Can be obtained via supranational agreements
- Coordination  $\neq$  Harmonization



# Lower IP in LDCs?

- One may increase IP in the North and reduce them in the South with no change in global innovation
- However, efficient for patents to expire simultaneously worldwide:
  - Arbitrage
  - Compatibility with free trade
- Inefficient to redistribute via different IPR.

# An alternative:

- Trading reduced tariffs in the North against higher IPR in the South
- Global price distortion unaffected
- But price distortions now efficiency-enhancing
- Developing countries get higher import prices and higher export prices.

# Local effects of IPRs: specific needs

- LDCs have specific needs
- Free-riding reduces innovation in the goods they need most (ex: malaria cure)
- Diwan-Rodrik (1991) show that if needs are specific, IPR enforcement must be high in LDCs
- In practice, low income compensated by large number of consumers.

# Local effects of free-riding: comparative advantage

- If IP not enforced, innovators will focus on goods that developing countries have trouble producing.
- These are the goods at which developing countries are relatively unproductive (comparative disadvantage)
- Productivity gap will widen between North and South

# IPR have direct effects on trade and FDI

- Low IP enforcement makes foreign firms reluctant to export IP-sensitive goods
- Low IP enforcement reduces FDI.
- Low IP changes the composition of FDI:
  - More distribution and assembly
  - Less manufacturing and R & D
  - Less licensing

# Consequences of low IP enforcement

- Easier to copy foreign goods
- Fewer foreign goods available for being copied
- Technology transfer may be slowed
- Growth may fall
- Empirically:
  - Less enforcement → Less growth
  - Effect stronger in more open economies
  - But IP may just proxy for rule of law.

# Enforcement

- Enforcement more costly, the less advanced the country: argument for lower level.
- However, large economies of scale in transnational IP law: coordination, conflict resolution, compatibility with world trade, etc.
- Joining a transnational system allows to upgrade to more advanced IP laws at low cost.

# A moratorium?

- Allows a one-off adoption of a set of crucial technologies.
- However:
  - Credibility problem
  - Retaliation



# The role of world growth

- Faster growth makes patented goods more valuable relative to public domain goods.
- Incentive to free ride is larger.
- That in turn reduces world growth.

# IPR as an industrial policy?

- Government could strategically use IP to foster national industries
- Example: OSS has been suggested as a cheap way to start a national software industry.

# Is a high-tech sector desirable?

- High-tech not a good in itself
- Typically, one should specialize according to comparative advantage.
- However, two arguments:
  - Dynamic learning externalities
  - Good jobs/ bad jobs

# Dynamic learning externalities

- Productivity depends on past cumulative output as industry moves down the learning curve
- Artificially boosting the sector's output increases future productivity, buttressing comparative advantage
- Country may grow faster if sector has greater learning potential than others

# Good jobs/ bad jobs

- Wages higher in some sectors than others
- Private cost of labor  $>$  Social cost of labor
- One may want to subsidize employment in high-wage sectors
- Need not be the high-tech ones, but employee rents depend on capital intensity

# Critique

- Government not good at identifying sectors worth subsidizing
- Externalities are hard to measure
- Other countries will want to do the same
- Terms of trade effects
- Political influence on subsidies
- High-tech industries may create inequality

# High-tech industry may take-off in an developing country

- Dynamic software industry in India (Poland potentially in an even better situation)
- Low relative supply of human capital, but high in absolute terms
- Technical catch-up easier in « light » industries
- But industry in danger if other industries catch up: wage increases, comparative advantage logic?

# Which IP regime is best?

- OSS: firms have trouble making money
- If there are learning externalities, rest of world benefits from our learning.
- Consequently, relative productivity growth is lower.
- Industry competitiveness threatened in the future





