

Rent Seeking and Innovation

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Overview

What benefit does intellectual property give the holder?

- ◆ The right to downstream profits
- ◆ The right to control output

It is not widely recognized that the former is true even without intellectual property – only need the right of sale

- production takes time, so there will be competitive rents
- industrial organization literature has not provided much empirical evidence that monopoly is either necessary or useful
- government grants of monopoly power are invidious because they reward those most adept at political/legal activity rather than innovative/productive activity

Private Versus Public Rent-Seeking

- ◆ Adam Smith: *A monopoly granted either to an individual or to a trading company has the same effect as a secret in trade or manufacturers.*
- ◆ Skills and resources are invested in turning the innovation into monopoly, we call this “rent-seeking”.
- ◆ We distinguish between private and public rent-seeking and study their interaction.
- ◆ We cast doubt on the presumption that allowing for public rent-seeking may reduce wasteful private rent-seeking.

Examples of public rent-seeking

- ◆ Sony Bono copyright extension law
- ◆ 1984 pharmaceutical industry was given extended patent protection
- ◆ 1994 term for all utility patents was extended from 17 to 20 years
- ◆ 1998 courts extend range of patent protection to include “business practices”
- ◆ Reagan administration patent examination system reformed to allow vague claims
- ◆ “submarine patents”
- ◆ patenting of the well-known and obvious widely used to “greenmail” firms into paying licensing fees
- ◆ U.S. has fought long and hard in the WTO to force other countries to conform - retroactively - to our patent and copyright law

Private rent-seeking

- ◆ traditional argument in favor of patent laws
- ◆ grant a legal monopoly in exchange for revealing the “secret” of the innovation
- ◆ apparently a clean way to make innovations widely available in the long run
- ◆ claim not been subject to much scrutiny by economists
- ◆ simplest case it fails: secrets longer and shorter than 20 years
- ◆ survey of R&D lab managers: for processes only 23% indicate patents effective as a means of appropriating returns; for products only 35%; 51% argue that trade-secrecy is effective in both cases

Our case

- ◆ real resources can be expended to make the secret less accessible
- ◆ innovator faces real trade-off between private and public rent-seeking

Conclusions

- ◆ trade-off generally ambiguous, but patents may increase secrecy
- ◆ good idea to require immediate enforcement of patents that are infringed
- ◆ severe problem when public sector is not benevolent or is captured

The Model

- ◆ impact of substitutability between private and public rent-seeking on the rate of adoption of innovations
- ◆ case of a single innovator, innovation already produced, who pays a private cost to reduce chances others imitate his product

Three observations about innovation

- ◆ time to ramp up productive capacity
- ◆ monopoly through secrecy without IP
- ◆ ideas useful only insofar as they are embodied in either people or things

Example

- ◆ chemical compound produced through series of elaborate steps
- ◆ stock of productive capital are trained employees
- ◆ “missing piece of the puzzle”
- ◆ employees do not know it and innovator adds secret ingredient at last minute
- ◆ at some point, an employee discovers the secret ingredient
- ◆ word quickly spreads over the shop floor
- ◆ all the employees leave the employment of the innovator, and start production on their own
- ◆ all is not lost to the innovator at this point

- ◆ in addition to the profit earned prior to revelation of the secret he gets the entire expected average present value of profits his workers will make on their own once the secret is revealed
- ◆ because he can charge them for the knowledge that will eventually become useful to them
- ◆ competition among potential employees reduces their profits to zero
- ◆ Becker [1971] “Firms introducing innovations are alleged to be forced to share their knowledge with competitors through the bidding away of employees who are privy to their secrets. This may well be a common practice, but if employees benefit from access to salable information about secrets, they would be willing to work more cheaply than otherwise.”

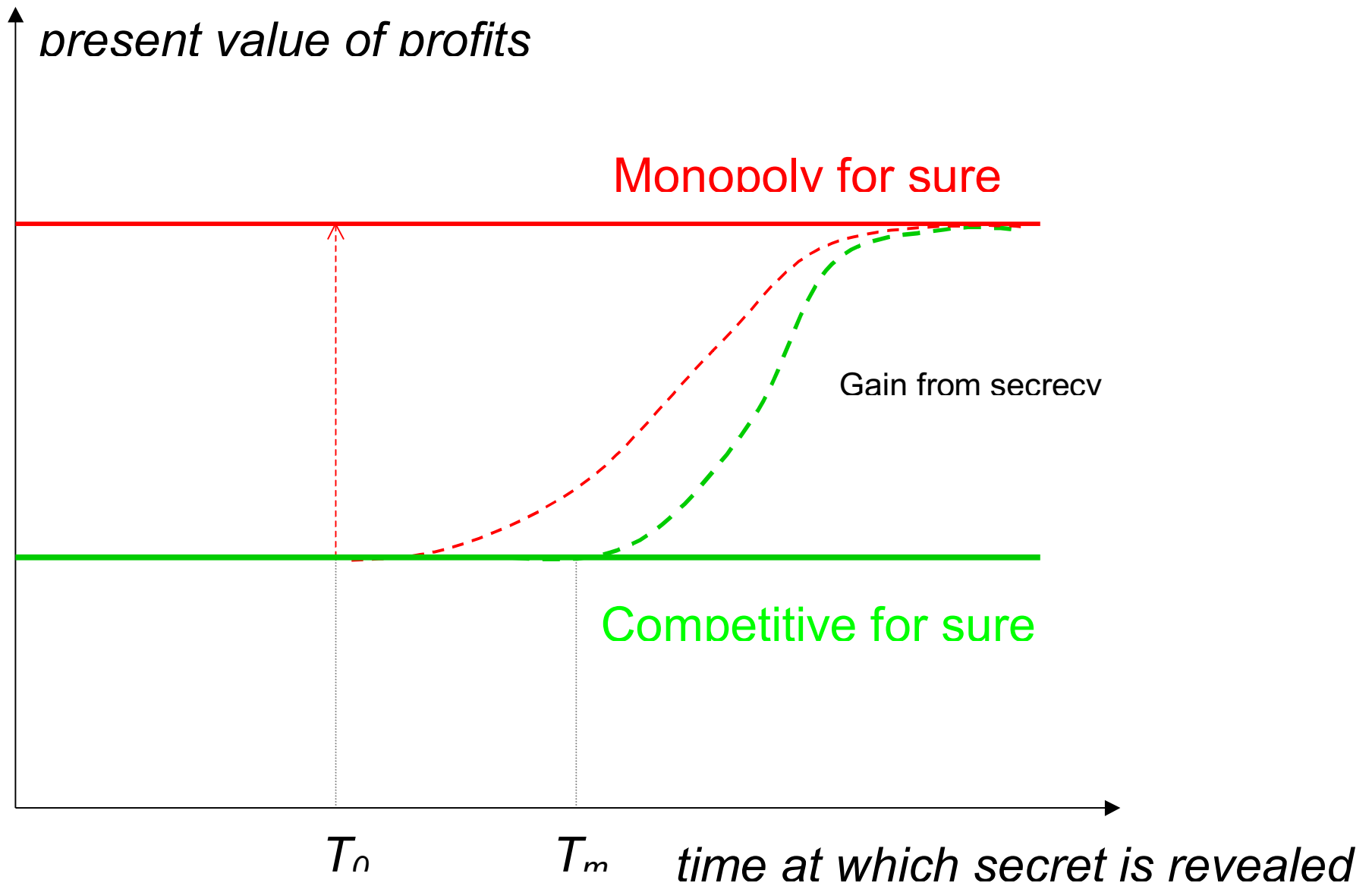
Analysis of the Model (from Hopenhayn & Vereshchagina)

If the profit peak is too far in the future it doesn't pay to get a legal monopoly

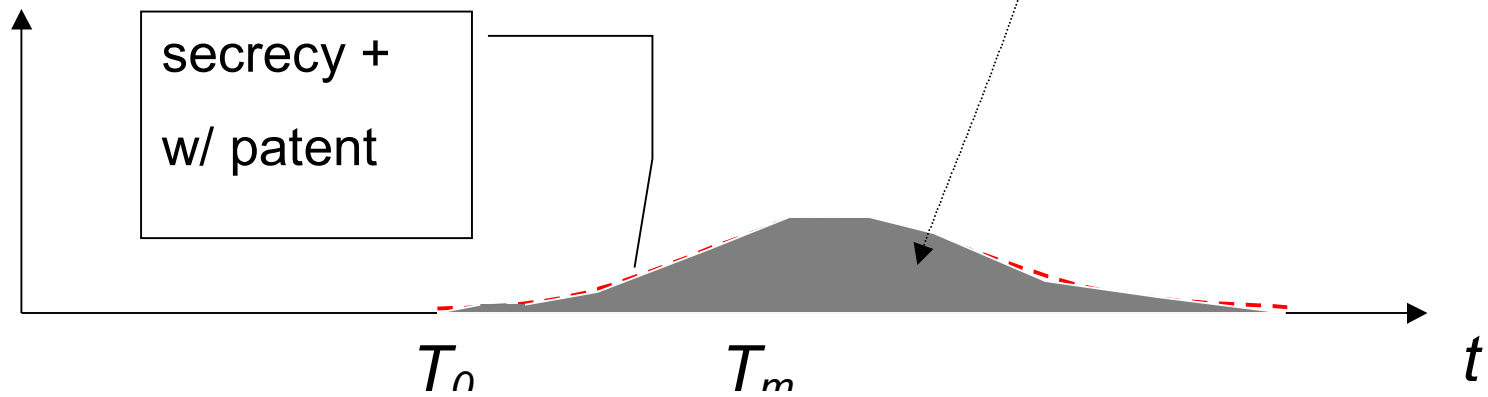
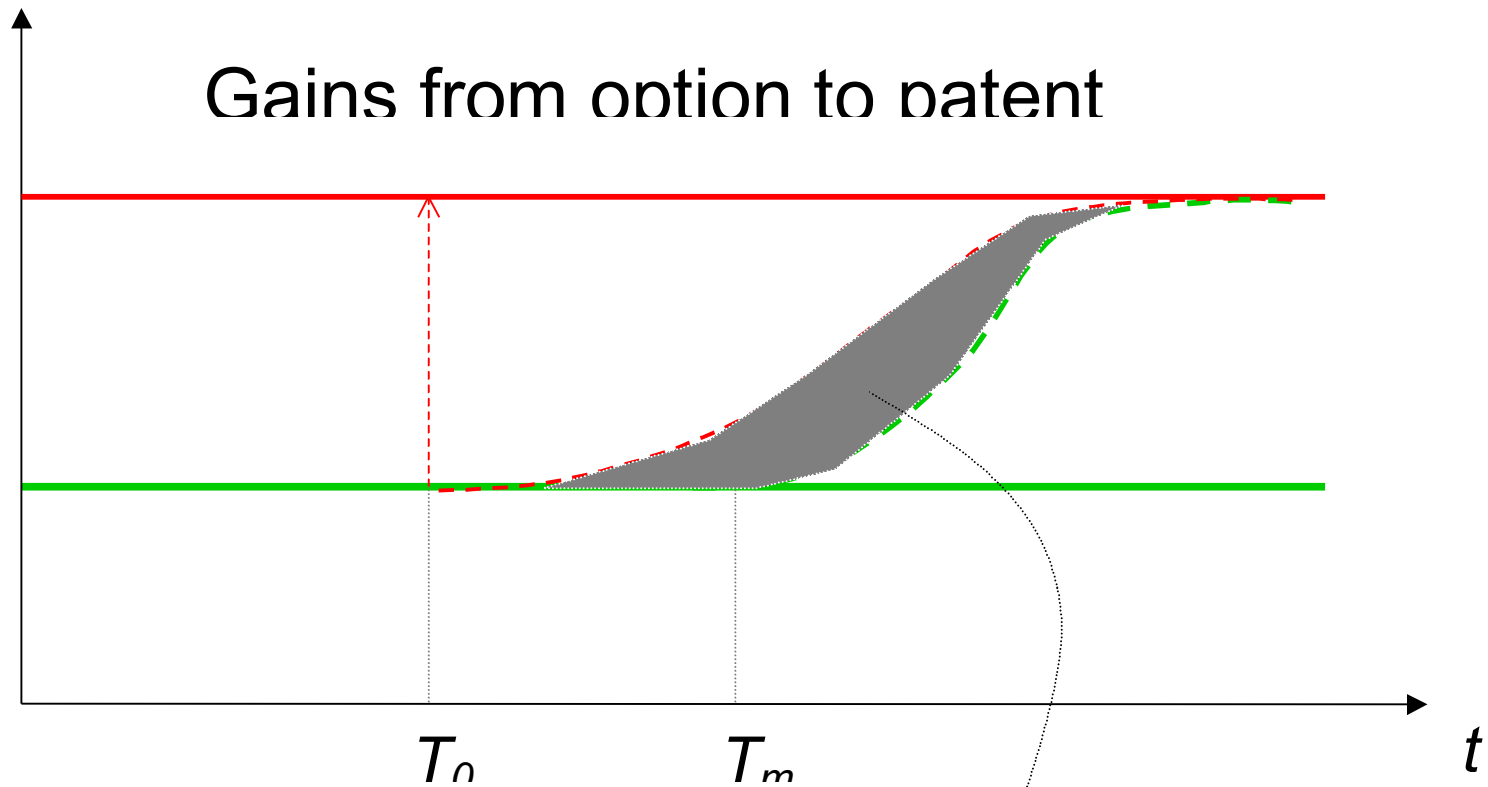
T_0 - time at which it pays to take the legal monopoly

T_m - time at which the profit peak is reached

The diagram shows profits at time 0 as a function of when the secret is revealed



Gains from option to patent



Endogenous Patent Cost

- ◆ no benevolent planner trying to design the socially optimal mechanism
- ◆ instead own-profit maximizer fees in order to maximize own benefits.
- ◆ obviously planner sets fees high enough to make the innovator almost indifferent between the IP and the NIP strategy

Mandatory Patents

- ◆ with optional patenting innovator gets at least return as without the patent system
- ◆ in practice the patent may be awarded to someone else
- ◆ unless the government can commit to giving the patent to the right party, there is a hold up problem
- ◆ patent acts like a business license - a firm cannot do business without the patent, since if they do not get it someone else will
- ◆ extreme case: all rent extracted *ex post*, innovator earns nothing – and there is no innovation

- ◆ if it is impossible to charge for the license until after the secret leaks out profits can be either smaller or bigger than competitive rent
- ◆ government may not have the blanket right to charge instead it randomly allocates the rights by issuing vague patents to general ideas; not that while government may be able to solve the holdup problem through precommitment, small patent holders probably cannot (problem of the submarine patent)
- ◆ reiterate this point: if the government divides up the world of all ideas, giving each individual a small piece – i.e. well defined “property rights” via a gold-rush method – the predictable consequence is that there will be **NO** innovation at all
- ◆ political economy of patents not well understood by large multinational (read U.S.) corporations lobbying most intensively in favor of international patent protection through the WTO: think ice-skating judges at the Olympic games