“Materialistic genius and market power: uncovering the best innovations”

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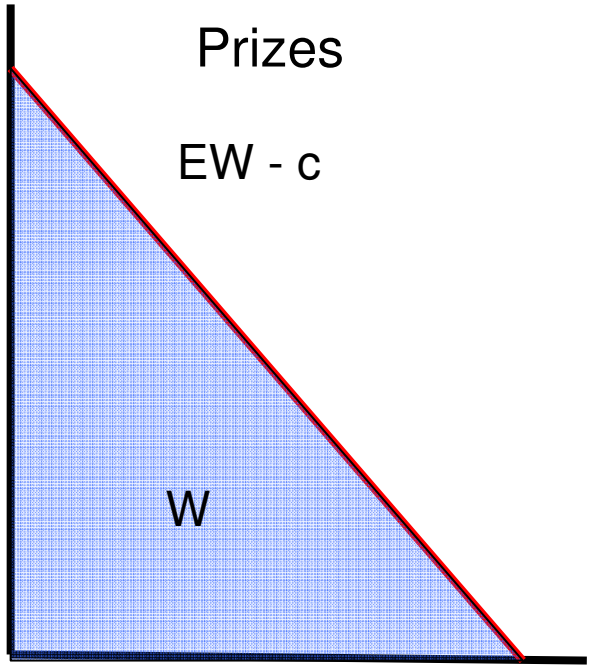
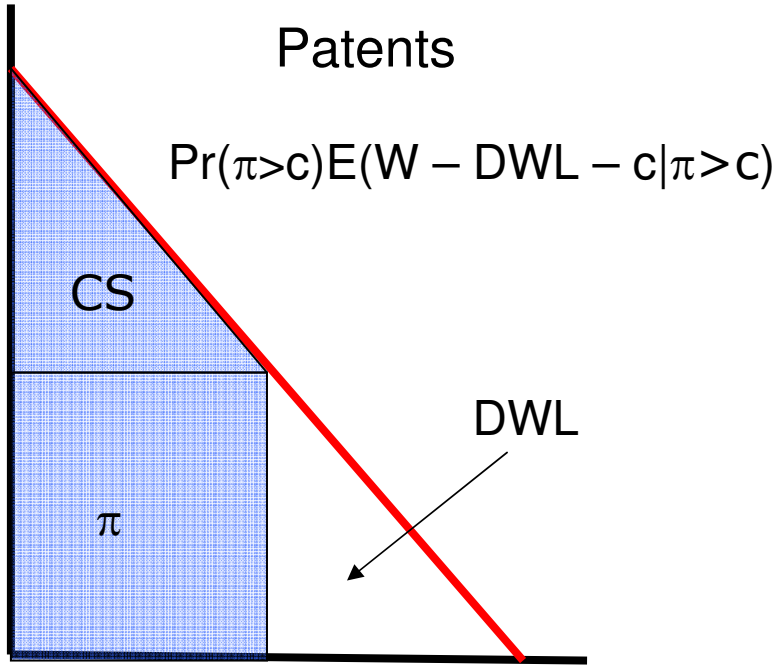
The problem

- What's the optimal way to encourage innovations?
- IPR encourage innovations but they create all kind of problems (DWL, patent thicket, strategic patenting)
- Could prizes substitute or complement IPR?

The main idea

- If the reward under prizes exceeds c, then all innovations go through
  - Overinvestment: innovations with c>W are taken
- Under patents, only innovations with $\pi > c$ go through
  - Underinvestment: innovations with $c \in [\pi, W]$ are not taken
  - DWL





The contribution of the paper

- The paper develops a methodology for solving for the optimal mechanism when innovators have multidimensional types (2 parameters associated with the demand function and the cost of innovation)

- The optimal mechanism involves both prizes and some market power

Comments

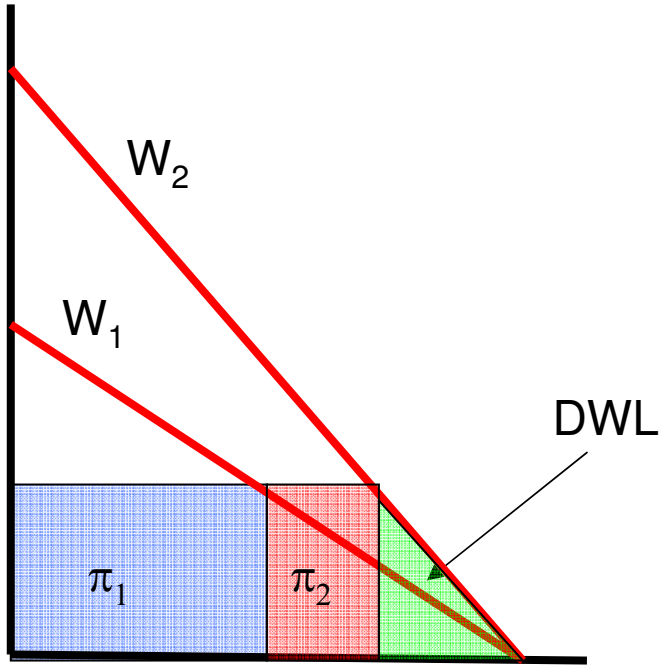
- In 2009, the US patent office granted 191,927 patents
- How should a prize system work in practice?
  - Guell and Fischbaum (1995) - the gov't should purchase pharmaceutical patents at a price determined by a judge
    - But who will produce and sell the drugs?
    - If the gov't publishes the patent, then foreign firms will get it for free (not in the interest of the country's citizens)
    - The court system is not the most efficient one
  - Shavell and van Ypersele (2001) – optional rewards
  - Kramer (1989) – 2nd price auction for the patent - with a high prob. the gov't will buy the patent and will make it public; o/w the highest bidder will acquire the patent
  - Lichtman (1997) – Give consumers cupons

Comments

- What about the cost of public funds associated with prizes? The money will have to be raised somewhere
- Is it realistic to assume that inventors know the demand for their innovations? What about process innovations?
- Do we need the multidimensional types in this problem? Can't we have a simpler model with unidimensional types?

Illustrating the idea

- Suppose there are 2 types: $W_1 < c < W_2$
- The policymaker wants to deter 1 but encourage 2:
  - Set p (2 makes a bigger profit)
  - Award a prize T – avoids DWL but does not differentiate the innovators
- The optimal solution involves a trade off between T and p



Bottom line

- A very impressive paper
- I am not sure though that the heavy machinery is absolutely crucial here
- How can we use the methodology in general two-dimensional screening problems?