Discussion of “Injunctions, Holdups, and Patent Royalties” by Carl Shapiro

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The Holdup Problem

- the dark side of the patent system: consequences for downstream innovation
- has become a popular area of research with some very good models: James Bessen and Eric Maskin, Gastón Llanes and Stefano Trento
- this paper also is a very clean model focusing on a different issue: holdup when the innovation is a small part of the final product
- an important query for empiricists: how significant is holdup? Horror stories aside, how big is the expected cost of future holdup as a share of total costs (say for a startup firm)? Is this a big deal?

Salient Conclusions

"Royalty over-charges persist even if negotiations occur before the downstream firm designs its product...However, royalty over-charges are reduced if the courts stay injunctions to provide time for infringing firms to design non-infringing versions of their products."

Patents Are Neutral in the Model

in the model patents neither encourage nor discourage innovation

“In the equilibrium in our model, there is no litigation, no design-around costs are incurred, the quantity produced is not sensitive to the royalty rate, and all units produced incorporate the patented feature. Therefore, within the bounds of the formal model, the equilibrium royalty rate only determines the amount transferred from the downstream firm to the patent holder; it has no direct effect on the allocation of resources.”

implicit in the analysis is that

- patents serve some useful if unstated purpose
- costs imposed on innovators by patent holders have an modeled social cost

Are Patents a Good Idea

since in the model patents are welfare neutral, we can easily see when they encourage innovation

patents discourage innovation:

- frictional costs of bargaining
- fixed cost of incorporating the idea into the new produce

patents encourage innovation:

- fixed cost of creating the original idea (even maintaining the above)

patents ambiguous:

- all of the above + cost of incorporating the new idea lower when the original creator helps out
- empirically relevant case

Negotiated Price of a Patent

the "normative" payment to the patent holder $\theta\beta v$

θ is the probability the patent can be enforced

β is the bargaining power of the patent holder

v is the value of the patent to the downstream innovator

$\theta\beta v$ is the negotiated price without a holdup problem

plays a key role in the analysis since the actual payments are compared to this normative benchmark and, for example, comparative static results revolve around the difference between actual payments and the benchmark

Normative Value of a Patent

"normatively" how should a patent holder be rewarded?

conventional to think of full appropriation of surplus – that suggests either v, or perhaps if we think of θ as the "probability the patent holder actually deserved the patent" θv

not clear why β should play a normative role

but note: a cost rather than value based approach to innovation has many advantages – gets the job done for encouraging innovation, while reducing the payments to innovators also reduces a great deal of the incentive for holdup and rent-seeking

for example: after I've recovered my costs, including the cost of failed efforts and my time, my patent would expire

not a system likely to be popular with innovators – see the movie *Fargo*

Missing from this Model

here *ex ante* versus *ex post* negotiation do not matter much

in a more traditional setting the innovator incurs a cost of innovation C

ex ante before innovation they bargain over v - C

ex post after innovation they bargain over v

ex post negotiation can result in an agreement that leaves the innovator with less than v - C meaning he wouldn't choose to innovate in the first place

here $C{=}0$ so this is not an issue

Squaring the Circle

suppose $v=0$ (section H of the paper)

especially egregious: the patent holder gets paid despite having contributed nothing whatever of value