



Privacy Equity and Long Run Investment: The
Case of Innovation

Josh Lerner, Morton Sorenson, and Per Stromberg

Discussion: Bronwyn H. Hall

University of California at Berkeley
and NBER

Background

- Late eighties-early nineties
 - Concern that extensive restructuring was impacting long run investments
 - “back to the wall” theory suggests that limiting free cash flow (high debt-equity ratio) may discourage investments in R&D, especially basic R&D
- Large amount of research on the topic concluded that
 - Debt-based restructuring was concentrated in rustbelt and low tech sectors, had little impact on R&D
 - Market did not appear to be myopic, that is, R&D investments were rewarded
 - Announcement effects
 - Hall and Hall 1993– future earnings discount for R&D firms was lower, not higher

[This paper]

- Very interesting re-examination of the question using
 - Different period
 - Better data on innovation?
- Problem – are we observing changes in innovation or changes in patenting practices?
 - Both are interesting but may have slightly different implications

[What's new?]

- Private buyouts are still rare in technology-intensive firms, but their share of buyouts have doubled since pre-1990s (footnote)
 - But compare with 37% hi-tech in Compustat pre-1990 and 55% post-2000
 - And Seagate accounts for half the patents?
 - That is, no big pharma or biotech, no other big ICT transactions
 - Most of the industries are “medium tech”
- Interesting to compare these firms to others in the same sector – matched samples?
 - Match in this paper is to all patents rather than patents held by US firms in the same sectors

[What's new?]

- Use of patents as an innovation proxy to look at question:
 - Patenting behavior appears unchanged (see next slide)
 - # citations per patent rose – is this quality?
 - Generality and originality not affected
 - Most interesting – apparent “focus”
 - **Enforcement changes?**

Identification

- Firm effects, calendar year dummies, and event year dummies will be exactly collinear – that's why it didn't converge
 - The old vintage-year-age problem in a different guise
 - Problem: leaving one out is arbitrary, need year effects due to secular changes in patenting behavior
 - Including a single post-event dummy instead, as they did later in the paper, will give identification, and seems sensible.
- See [Hall-Mairesse-Turner, EINT 2007](#), c.p.

[Reassignments]

- Casual observation suggests that firms are now more careful about filing changes of ownership at the PTO
- These changes are not in the NBER data, are they in your data? Could be important for this exercise.
- See Serrano's thesis

[Minor comments]

- Possible small numbers problems
 - Did you bias-adjust generality and originality?
- Some tables fail to control sample size across columns, making comparisons difficult
- Including average cite intensity in the NB model is the same as including a class-year fixed effect
- Estimate a patent count equation like that in Table 3?
- Poisson is consistent, but needs robust s.e.s