Shai Bernstein

Technology companies that go public demonstrate a sharp drop-off in innovation after they come public compared to similar firms that stay private, according to a new study by Shai Bernstein, assistant professor of finance at the Stanford Graduate School of Business.

The study finds that public companies, newly fortified with additional capital, continue to innovate, as measured by the number of patents filed. But Bernstein finds that the rate at which those patents are cited falls markedly after going public. In short, the inventors at public companies tend to produce more incremental work, rather than breakthrough ideas.

“I find a significant link between public ownership and innovation: going public causes a substantial decline of approximately 40 percent in innovation novelty as measured by patent citations,” he writes in the paper. “At the same time, I find no change in the scale of innovation, as measured by the number of patents. These results suggest that the transition to public equity markets leads firms to reposition their R&D investments toward more conventional projects.”

Bernstein also finds that the quality of innovation produced investors who stick around post IPO declines, and that key inventors are more likely to leave following an initial offering; although he also note that those effects are partially mitigated by the ability of public companies to attract new inventors.

Indeed, Bernstein finds a “stark increase” in the likelihood that companies once public will acquire other companies in the years following an IPO. (Which isn’t much of a surprise, really, given the additional capital public companies can put to work, as well their access to a fungible currency – public shares – that were not available pre-IPO.)

What’s perhaps more interesting is that public firms acquire a substantial number of patents through M&A. He contends that acquisitions supply almost a third of firms’ total patent portfolio in the five years following the IPO. And he finds that the patents acquired in that time period tend to be of higher
quality than the patents produced internally in the post-IPO period as measured by frequency of citation. In short, public companies are in effect outsourcing key R&D to smaller, private firms.

Bernstein posits several theories for the trends he finds in his research.

For one, he notes that “going public may affect managerial incentives which leads to a change in the type of innovative projects selected and a greater reliance on acquisitions of external technologies. For example, career concerns and takeover threats may pressure managers to select more conventional projects which can be more easily communicated to dispersed shareholders.”

A second theory: inventors also change their strategy once a company goes public. “The dilution in ownership claims of future innovations may lead inventors to pursue less ambitious projects, or alternatively leave the firm to implement their ideas in a private firm setting where they can capture a larger fraction of the returns for their innovation,” he writes.

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