

Innovation in Small Businesses: Drivers of Change and Value

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The Office of Advocacy has funded several studies that examine the patent activity of small businesses (e.g., Breitzman and Hicks, 2008; CHI Research, 2002, 2004; and Eckhardt and Shane, 2006 to list a few). All show that small businesses outperform their larger counterparts in patent activity (issuance). Moreover, Breitzman and Hicks (2008) argue that small firms' patents outperform large firms' patents on a number of metrics including growth, citation, patent originality, and patent generality.

This study is another installment in this discussion. It widens the scope of the existing debate by focusing on the effects of drivers of innovation (employee headcount, sales, and R&D expenditures) on small business value.

Overall Findings

Looking at patent activity for a sample of 637 small businesses in the 2004-2006 time frame, the researchers found that increasing employee headcount significantly increased innovation (i.e. patent issuance), while the data did not exhibit a link between patent count and market value. R&D expenditures are found to increase firm market value.

Highlights

- Innovation increases significantly as small businesses increase employee headcount. A one hundred-person increase in employee headcount raises innovative activity by 20 percent.
- Based on industry, a 10 percent increase in R&D expenditures can lead to as much as a 3 percent increase in market value.

Scope and Methodology

The researchers selected a sample of 637 small firms covering the period 2004-2006 using data from Standard & Poor's Compustat database, the U.S. Patent and Trademark Office's (USPTO) databases, and KtMine. They screened the data for companies that had less than 500 employees in the Standard & Poor, yielding 3,659 companies. The variables of interest pulled from the dataset consisted of: employees, sales (net), R&D expenditures, and price to book value. A scrubbing of the data to see which firms still had 500 employees in 2005 and 2006 reduced the count to 3,047 companies. USPTO's data was used for those 3,047 companies. A final scrubbing imposing the requirement that all remaining firms were existing firms (in the study translated to a requirement that the data fields were filled all the way back to 2000), led to the final count of 637 companies. Different specifications were then used to estimate the effect that patent issuance has on firm market value, how adding employees affected innovation, and finally, how an increase in R&D expenditures affected innovation (patent issuance).

This report was peer reviewed consistent with the Office of Advocacy's data quality guidelines. More information on this process can be obtained by contacting the director of economic research at advocacy@sba.gov or (202) 205-6533.

References

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Ordering Information

The full text of this report and summaries of other studies performed under contract with the U.S. Small Business Administration's Office of Advocacy are available on the Internet at www.sba.gov/advo/research.

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