

## Small Business Innovation Spurs Economic Growth

Office of Advocacy research shows that small businesses outperform their larger counterparts in producing more patents per employee (a measure of innovation). Small firm's patents outperform those of larger firms in a number of measures, including growth, citation, and originality. Small "patenting firms" produce 13 times more patents per employee than large firms do, and these patents are twice as likely as those from large firms to be among the one percent most cited in others in their patent applications.

The Office of Advocacy has a history of funding research that documents the role, nature, and importance of innovation and technological breakthrough by small firms. The following studies examine how innovation by small firms contributes to our economic growth and development. These and other relevant research studies are available at [www.sba.gov/advo](http://www.sba.gov/advo).

### **Innovation in Small Business: Drivers of Change and Value (2009)**

Innovation in small firms increases as employee counts rise. Increases in research and development expenditures often lead to increased market value of the firm. [www.sba.gov/advo/research/rs342tot.pdf](http://www.sba.gov/advo/research/rs342tot.pdf).

### **An Analysis of Small Business Patents by Industry and Firm Size (2008)**

Small firms are a significant source of innovation and patent activity. Small businesses develop more patents per employee than larger businesses; those with fewer than 25 employees producing the greatest number. Small firm patents tend to be more significant than large firm patents, outperforming them in a number of categories including growth, citation impact, and originality. Finally, small firms tend to specialize in high tech, high growth industries, such as biotechnology, pharmaceuticals, information technology, and semiconductors. [www.sba.gov/advo/research/rstot335.pdf](http://www.sba.gov/advo/research/rstot335.pdf).

### **Innovation and Small Business Performance: Examining the Relationship Between Technological Innovation and the Within Industry Distributions of Fast Growth Firms (2006)**

Industries that are more technically oriented (as evidenced by increased employment of scientists and engineers) are more accommodating to small fast growing private firms. As industries become more production oriented, they become more accommodating to large fast growing public firms. This supports the notion that small private and large public firms perform different roles in different industries, and in the economy as a whole. [www.sba.gov/advo/research/rs272tot.pdf](http://www.sba.gov/advo/research/rs272tot.pdf).

### **Small Firms: Why Market-Driven Innovation Can't Get Along Without Them (2005)**

This paper shows that the market works to assign the search for radical inventions to small enterprises and their subsequent development to large ones. Since free markets are of critical importance for America's unparalleled flood of innovation, and if widely and rapidly adapted innovation is the primary key to that growth, it follows that small firms are indispensable components of the process and that rapid and sustained growth cannot happen without them. [www.sba.gov/advo/research/sbe\\_05\\_ch08.pdf](http://www.sba.gov/advo/research/sbe_05_ch08.pdf).

### **Small Firms and Technology: Acquisitions, Inventor Movement, and Technology Transfer (2004)**

Small firms are a vital element of new technology in many industries. In newer high technology industries, such as biotechnology, medical electronics, medical equipment, and telecommunications, large firms frequently rely on small firms' discoveries and inventions. [www.sba.gov/advo/research/rs233tot.pdf](http://www.sba.gov/advo/research/rs233tot.pdf).

### **Small Serial Innovators: The Small Firm Contribution To Technical Change (2003)**

Small patenting firms are roughly 13 times more innovative per employee than large patenting firms. Their patents are more technically important on average than those of large firms, and their innovation is twice as closely linked to scientific research, and therefore substantially more high-tech or leading edge. [www.sba.gov/advo/research/rs225tot.pdf](http://www.sba.gov/advo/research/rs225tot.pdf).

### **Influence of R&D Expenditures on New Firm Formation and Economic Growth (2002)**

University R&D expenditures are significantly related to new firm formations in the labor market surrounding the universities. This documents how R&D expenditures made through research universities contribute to economic growth via the number of resulting new startups. [www.sba.gov/advo/research/rs222tot.pdf](http://www.sba.gov/advo/research/rs222tot.pdf).