

## The Innovation-Entrepreneurship NEXUS: A National Assessment of Entrepreneurship and Regional Economic Growth and Development

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### Purpose

The connection between innovation and entrepreneurship as drivers of local economic development is often discussed but not often studied. This research addresses the needs of local policymakers to understand the role of entrepreneurship and innovation in creating an environment where local economic growth can thrive.

### Overall Findings

Both entrepreneurship (new firms and growing firms) and innovation (patents, R&D, and hi-tech industries) are drivers in the growth of regional economies. This study infers that innovative regions need entrepreneurship to more fully develop local economies. Entrepreneurial regions are likely to be associated with higher levels of technology.

### Highlights

- Regional entrepreneurship variation was high from 1990 to 2001. The average number of new firm births per 1,000 labor force participants ranged from 9.2 (Glenwood Springs, CO) to 2.0 (Mansfield, OH) and the average annual rate of change of new firm births ranged from 11.7 percent (Springfield, MA) to -8.3 percent (Hilo, HI).

- Most of the top regions for the entrepreneurship index were in the "non-California" western part of the country while the lowest regions tended to be in

the Upper New York/Upper Midwest area. The report contains a complete ranking of individual regions.

- Small and large regions had similar average annual numbers of new firm births (3.3 percent and 3.4 percent, respectively) and percentages of firms growing rapidly (4.0 percent and 4.8 percent, respectively). However, small regions had an average annual change in firm births of -3.6 percent while large regions had a gain of 3.2 percent.

- The most entrepreneurial regions had better local economies from 1990 to 2001 compared to the least entrepreneurial. They had 125 percent higher employment growth, 58 percent higher wage growth and 109 percent higher productivity. This general finding held individually for large, medium and small sized regions but was most pronounced for large regions.

- The most entrepreneurial regions were associated with higher levels of technology. They expended nearly 54 percent more of R&D, recorded 67 percent more patents per labor force participant, had a 63 percent higher percentage of hi-tech establishments and had a 42 percent higher portion of college educated population than the least entrepreneurial regions.

- The most entrepreneurial regions tended away from manufacturing as an economic base, but not necessarily toward service industries. The most and least entrepreneurial regions had 12.3 percent and 18.5 percent of their employment in manufacturing respectively, versus 31.5 percent and 28.5 percent in

services. Over the last 30 years, manufacturing-based regions have struggled economically.

- Econometric models showed regional firm births to be positively correlated with innovation and regional growth (employment, wage and productivity).
- Economic models also showed regional innovation to be positively correlated with regional employment growth.

## Scope and Methodology

Indexes were used to rank the 394 regions on their entrepreneurial and innovation activities. The regional entrepreneurship index was composed of the number of new firms per 1,000 labor force participants, average annual change in the number of new firms and the percent of rapidly growing firms. Special tabulations from the U.S. Census Bureau's Statistics of U.S. Business Data program were the source for entrepreneurship data. The regional innovation capacity index was composed of R&D expenditures, number of patents and hi-tech's share of the local economy. The National Science Foundation's Survey of R&D Expenditures, U.S. Patent and Trademark Office and U.S. Bureau of Economic Analysis were sources for innovation data.

Econometric models were also used to evaluate and show a connection among entrepreneurship, innovation, and economic growth. Local employment, wage growth and productivity growth represented local economic development.

The most entrepreneurial regions were defined as regions within the highest quartile and the least were defined as the lowest quartile.

FINTEL, LLC of Madison, Wisconsin assisted with much of the data analysis.

This report was peer-reviewed consistent with Advocacy's data quality guidelines. More information on this process can be obtained by contacting the Director of Economic Research at [advocacy@sba.gov](mailto:advocacy@sba.gov) or (202) 205-6533.

## Ordering Information

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