

## Determinants of Growth in Entrepreneurship Across U.S. Labor Markets, 1970-2006

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Regional variations in entrepreneurship have important implications for regional development, since entrepreneurs play a crucial role in bringing new ideas to the market which can benefit all firms in a community. Previous research has confirmed that regions with high levels of entrepreneurial activity have faster employment growth than regions with lower levels.

This paper explores the factors determining entrepreneurship growth within labor market areas (LMAs) in terms of both the number of entrepreneurs and their share of total LMA employment over three and a half decades, 1970 to 2006. It highlights regional differences in entrepreneurship across U.S. labor markets as well as within different subgroups.

For this study the authors measure entrepreneurship using proprietorship data from the U.S. Bureau of Economic Analysis (BEA) and self-employment data from the U.S. Census Bureau Public Use Micro Sample (PUMS). Other researchers have used these data sets as a reasonable proxy for entrepreneurship. They test three specific hypotheses:

- Higher human capital levels in local LMAs are likely to be associated with higher growth in the number and share of entrepreneurs in local LMAs;
- The impact of human capital on entrepreneurship within LMAs differs over time and across metropolitan and nonmetropolitan regions; and
- Higher levels of human capital in local LMAs are associated with higher growth in the proportion of entrepreneurs within specific gender, age, and high-technology industry subgroups in LMAs.

### Overall Findings

The authors' key finding is that higher levels of human capital (measured in terms of education levels by the percent of college graduates in an LMA) are associated with faster growth in proprietors across LMAs. Higher human capital levels do not necessarily contribute to growth in the proportion of proprietors in an LMA's overall workforce; instead the research suggests that human capital tends to contribute to the overall desirability of a region, visible in the growth in both proprietorships and wage-and-salary workers.

### Highlights

Other highlights of the study include the following:

- Factors that contribute to growth in entrepreneurs and the entrepreneurial share within regions are natural amenities (such as rugged terrain and proximity to water), wealth, and lower initial unemployment.
- Self-employment growth is higher for women, people in the 45-64 age group, and those in professional and business services; self-employment growth is lower for men, those in the 20-44 age group, and those in the health care sector.
- Overall results suggest a positive role for education in stimulating the number of self-employed in regions, particularly for people in the 45-64 age group and in the health care industry.
- Human capital contributes more to growth of the number of proprietorships in nonmetropolitan regions than in metropolitan regions, while human capital contributes more to growth in proprietorship share in metropolitan than nonmetropolitan regions.

- Measures of human capital other than percent college graduates, such as local spending on education and the presence of universities within an LMA, yielded different effects on entrepreneurship over time and across regions.

## Regional Trends in Entrepreneurship

Measuring regional trends in entrepreneurship using data from BEA, the authors find substantial shifts in the share of proprietorships in LMAs across regions during the 1970–2006 period. There is only limited evidence that LMA proprietorship shares are becoming more similar across regions. While proprietorship shares in nonmetropolitan regions are much higher than in their metropolitan counterparts, proprietorships' share of the total workforce has risen faster in metropolitan than nonmetropolitan regions. The result is that the average proprietorship share for metropolitan regions was much closer to that of nonmetropolitan regions in 2006 than it was in 1970. (In 1970, the average proprietorship share was 10.6 percent for metropolitan regions and 16.0 percent for nonmetropolitan; in 2006, these figures were 18.4 percent and 21.8 percent, respectively.)

Proprietorship shares tend to vary (measured by the standard deviation) more across nonmetropolitan regions than across metropolitan regions and there is little evidence that this difference in variation has been changing over time. This suggests that regional growth in the share of entrepreneurs is more likely to be driven by regional characteristics than a long-term trend toward national convergence in the proportion of proprietorships within LMAs.

## Scope and Methodology

The research uses multivariate regression to examine factors contributing to growth in entrepreneurs and their share within regions. Regressions analyze the effect of alternative measures of human capital on LMA proprietorship levels (number and percent). These measures include percent college graduates, local spending on education, and the presence of universities within an LMA.

To address entrepreneurship within important subgroups, the authors disaggregate self-employment

measures by gender, age, and industry using the PUMS data. They analyze data for 942 PUMS-county regions in the contiguous U.S. states, available for the 2000 to 2006 period.

The analysis also points out key differences in the two data sources (the Bureau of Economic Analysis and the Census Bureau). First, these data sources measure different geographic regions. The BEA data represent commuting-based LMAs, while the PUMS data do not permit precise definitions of LMAs and might include parts of one or multiple LMAs. Regression techniques are used to adjust for regional spillovers in the PUMS data. Second, the two data sources differ significantly in the measurement of nonfarm self-employment. These differences result in widely different numbers of nonfarm self-employed and the self-employment share as well as changes in these measures over time.

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