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Small Business Research Summary

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Volatility and Asymmetry of Small Firm Growth Rates Over Increasing Time Frames

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With the emergence of new longitudinal data sets, researchers are now able to better address questions about the dynamics of businesses. This study focuses on characterizing the large dispersion of business growth rates over increasing time frames and considers whether employment expansions and contractions occur symmetrically.

Overall Findings

Previous studies found annual business growth rates having heavy tailed distributions (many large expansions and contractions). This study found that over longer time frames, the distributions slowly move towards lighter tails (fewer large growth changes). This slow change in the distributions indicates firms tend to maintain their employment change trend.

The study also found evidence to support the belief that a systematic difference between job creation and job destruction exists. There are more large employment swings among shrinking than expanding businesses.

Highlights

- Business growth rates were found to be reasonably well approximated by the asymmetric Subbotin distribution, which is a flexible statistical distribution with parameters that allow it to vary from very light-tailed to very-heavy tailed. The observed business growth rates show a tendency over increasing time periods (from one to five years) towards slightly more asymmetry and slightly lighter tails. In general, negative rates appear more volatile than positive rates.
- Given that job creation and destruction result from different processes, accurately modeling positive and negative growth rates necessitates using a more flexible statistical distribution that can accommodate the observed lack of symmetry.
- Matching previous research, the variance of growth rates was fairly independent of business size.
- Truncating the data by eliminating very large expansions and contractions produced differing results. Researchers need to realize that excluding what they believe to be outliers or unimportant groups of businesses can have a big impact on their results.
- Survival rates over the five-year period were similar for the different size classes, except the smallest. The survival rate for establishments with 4–7 employees was 75.3 percent; this rate slowly rose to 84.2 percent for the 512–1,023 size class. Even small size classes had relatively high five year survival rates, 61.4 percent for one-person establishments and 70.1 percent establishments with two to three persons.
- The report shows the value in utilizing non-publicly available microdata by creating special tabulations to answer important industrial organization questions.

Scope and Methodology

The researchers utilized special tabulations from the Census Bureau's Statistics of U.S. Businesses (SUSB). (The Office of Advocacy is a partial funder of SUSB.) SUSB includes nearly all employer establishments in the United States, except farms. Firm-establishment identifiers exist in the data to create firm data. But establishments were used as a proxy for firms because of the difficulties in following firm mergers, spin-offs, and ownership changes in the underlying microdata.

Establishments (or business locations) surviving from 1998 to 2003 were the basis for the study. Establishments that opened and closed during the period were not included in the analysis.

Establishments were divided into equally spaced log employment growth rate bins by start year, and establishment employment size for differing time frames. The distribution of the frequency of the logged growth bins were charted and compared.

Given that small firm establishments represent the bulk of the data, the overall results reflect small firm growth.

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* or (202) 205-6533.

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***. Copies are available for purchase from:

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