Kauffman Index of Entrepreneurial Activity

Kauffman Symposium on Entrepreneurship and Innovation
Data
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New Measure of Entrepreneurship

- Create new measure of entrepreneurial activity created from microdata from matched monthly files from the Current Population Survey (CPS).
- Dynamic measure of entrepreneurship that captures the rate of business formation at the individual owner level.
- Want to capture business formation instead of business ownership.
Current Population Survey

- Conducted by the U.S. Census Bureau and the Bureau of Labor Statistics
- Designed to be representative of U.S. population, individual states and other specified areas
- Currently interviews more than 50,000 households and 130,000 individuals each month
- Designed to primarily collect employment information, but also to collect demographic and supplemental information
Business Ownership in the CPS

- Class of worker question for main job
- Self-employed in their own unincorporated or incorporated business
- Captures non-employer and employer firms
- Impose hours restriction to rule out very small-scale business activities
- Less inclusive than business-level data sources

Number of Business owners in CPS 11 million
Number of businesses in the SBO 23 million
   Number of employer firms 5.5 million
Number of businesses in D&B 14 million
Creating Monthly Panel Data from the CPS

- CPS households are interviewed for 4 consecutive months, not interviewed for the following 8 months, and interviewed again for 4 months
### CPS Rotation Pattern

<table>
<thead>
<tr>
<th>J</th>
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<th>J</th>
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<th>A</th>
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<th>N</th>
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</thead>
<tbody>
<tr>
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<td>5</td>
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<td>7</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
Creating Monthly Panel Data from the CPS

- 75 percent of respondents can be matched to the following month
- False positives are removed by comparing race, sex and age codes
- Match rates are generally between 94 and 96 percent
- Remove observations with allocated variables
Definition of Entrepreneurship

- Captures business formation at the time the business is created.
  
<table>
<thead>
<tr>
<th>Month 1</th>
<th>Month 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-business owners</td>
<td>Business owners with 15 or more hours worked</td>
</tr>
<tr>
<td></td>
<td>per week</td>
</tr>
</tbody>
</table>

- A major advantage is that all new business owners are captured including those who own incorporated or unincorporated businesses, and those who are employers or non-employers.

- Recent measures of entrepreneurial activity or firm formation typically include only larger, employer firm births (see Advanced Research Technologies, LLC, 2005 and Burton: Center for American Progress 2005 for example).

- Employer firms represent only 25 percent of all existing firms (U.S. Small Business Administration 2001, Headd 2005), and a significant number of new employer firms start as non-employer firms (Davis, et. al. 2006).
U.S. Rates

- In the United States, 290 out of 100,000 (or 0.29 percent) people start a business each month.
- Approximately 465,000 people start a business each month.
- Large sample sizes, n=6.3 million or 570,000 per year
Figure 1
Kauffman Index of Entrepreneurial Activity (1996-2006)

Source: Robert W. Fairlie, UC Santa Cruz using the CPS.
Figure 2
Kauffman Index of Entrepreneurial Activity by Gender (1996-2006)

Source: Robert W. Fairlie, UC Santa Cruz using the CPS.
Figure 3
Kauffman Index of Entrepreneurial Activity by Race (1996-2006)

Source: Robert W. Fairlie, UC Santa Cruz using the CPS.
Figure 4
Kauffman Index of Entrepreneurial Activity by Nativity (1996-2006)

Source: Robert W. Fairlie, UC Santa Cruz using the CPS.
Figure 7
Kauffman Index of Entrepreneurial Activity by Region (1996-2006)

Source: Robert W. Fairlie, UC Santa Cruz using the CPS.
Figure 1: Kauffman Index of Entrepreneurial Activity by State (2006)

Entrepreneurship Rates
- 0.00333 to 0.00602 (17)
- 0.00266 to 0.00333 (16)
- 0.00164 to 0.00266 (18)
<table>
<thead>
<tr>
<th>Metropolitan Statistical Area</th>
<th>Entrep. Index</th>
<th>Confidence Interval Lower</th>
<th>Confidence Interval Upper</th>
<th>Entreps. per 100,000 People</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York-Northern New Jersey-Long Island, NY-NJ-PA</td>
<td>0.39%</td>
<td>0.31%</td>
<td>0.47%</td>
<td>390</td>
<td>23,523</td>
</tr>
<tr>
<td>Los Angeles-Long Beach-Santa Ana, CA</td>
<td>0.34%</td>
<td>0.25%</td>
<td>0.44%</td>
<td>340</td>
<td>17,467</td>
</tr>
<tr>
<td>Chicago-Naperville-Joliet, IN-IN-WI</td>
<td>0.18%</td>
<td>0.11%</td>
<td>0.26%</td>
<td>180</td>
<td>12,778</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>0.24%</td>
<td>0.13%</td>
<td>0.35%</td>
<td>240</td>
<td>7,665</td>
</tr>
<tr>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE</td>
<td>0.23%</td>
<td>0.12%</td>
<td>0.34%</td>
<td>230</td>
<td>12,834</td>
</tr>
<tr>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>0.28%</td>
<td>0.18%</td>
<td>0.37%</td>
<td>280</td>
<td>17,068</td>
</tr>
<tr>
<td>Miami-Fort Lauderdale-Miami Beach, FL</td>
<td>0.50%</td>
<td>0.33%</td>
<td>0.66%</td>
<td>500</td>
<td>7,038</td>
</tr>
<tr>
<td>Houston-Baytown-Sugar Land, TX</td>
<td>0.33%</td>
<td>0.19%</td>
<td>0.47%</td>
<td>330</td>
<td>6,505</td>
</tr>
<tr>
<td>Atlanta-Sandy Springs-Marietta, GA</td>
<td>0.49%</td>
<td>0.32%</td>
<td>0.66%</td>
<td>490</td>
<td>7,268</td>
</tr>
<tr>
<td>Detroit-Warren-Livonia, MI</td>
<td>0.13%</td>
<td>0.04%</td>
<td>0.21%</td>
<td>130</td>
<td>6,430</td>
</tr>
<tr>
<td>Boston-Cambridge-Quincy, MA-NH</td>
<td>0.38%</td>
<td>0.23%</td>
<td>0.54%</td>
<td>380</td>
<td>10,081</td>
</tr>
<tr>
<td>San Francisco-Oakland-Fremont, CA</td>
<td>0.44%</td>
<td>0.26%</td>
<td>0.61%</td>
<td>440</td>
<td>5,527</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>0.23%</td>
<td>0.11%</td>
<td>0.36%</td>
<td>230</td>
<td>5,550</td>
</tr>
<tr>
<td>Riverside-San Bernardino, CA</td>
<td>0.38%</td>
<td>0.21%</td>
<td>0.55%</td>
<td>380</td>
<td>5,069</td>
</tr>
<tr>
<td>Seattle-Tacoma-Bellevue, WA</td>
<td>0.22%</td>
<td>0.09%</td>
<td>0.34%</td>
<td>220</td>
<td>5,673</td>
</tr>
</tbody>
</table>
Entrepreneurship in Silicon Valley during the Boom and Bust

- Was entrepreneurship higher in Silicon Valley than other parts of the United States in the economic expansion of the late 1990s?
- Or, was entrepreneurship suppressed in Silicon Valley in the late 1990s relative to the rest of the country because of the unusually tight labor market?
Figure 6
Entrepreneurship Rates by Geographical Area (1996-2005)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Silicon Valley</td>
<td>0.31%</td>
<td>0.35%</td>
</tr>
<tr>
<td>Rest of California</td>
<td>0.37%</td>
<td>0.35%</td>
</tr>
<tr>
<td>U.S. Total</td>
<td>0.29%</td>
<td>0.29%</td>
</tr>
</tbody>
</table>
Figure 6
Entrepreneurship Rates by Geographical Area for the Highly-Educated (1996-2005)
Variables in the Underlying Microdata

**Individual characteristics**
- Age
- Sex
- Race/Ethnicity
- Immigrant status
- Education
- Marital status and children
- Family income
- Home ownership
- Geographical information

**Business characteristics**
- Industry
- Hours worked by owner
Current Population Survey Summary

- **Advantages**
  - Panel data (allows measure of business formation)
  - Large sample sizes
  - Up-to-date
  - Comparison group of non-entrepreneurs
  - Detailed information on owner

- **Disadvantages**
  - Short panel
  - Limited information on the business, especially outcomes
Data Release

- KIEA reports released each Spring
  - U.S Rates by race (1996-)
  - State-level estimates (1996-)
- Underlying microdata released one year later (1996-)