Nonemployment Duration and the Consequences of
Job Separations

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Bruce Fallick
Federal Reserve Board

John Haltiwanger
University of Maryland and U.S. Census Bureau

Erika McEntarfer
Center for Economic Studies, U.S. Census Bureau

Disclaimer: Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the Federal Reserve Board or U.S. Census Bureau or their staffs.
Contrasting pictures of job separations

Job mobility literature:
- Emphasizes voluntary or fairly direct transitions between employers.
- Approximately 1/3 of job separations are flows “directly” to a new job.
- Finds that job changes, esp. early in career, lead to better paying and more stable jobs.

Displaced workers literature:
- Emphasizes workers separating involuntarily.
- Finds large and persistent earnings losses compared to stayers.
Framework established by Jacobson, Lalonde, and Sullivan 1993

- Administrative data on earnings
- Displacement identified with mass reductions in employment at the firm ("distressed" firm)
- Emphasis on time since displacement
- Emphasis on comparison with stayers
Our goal is to integrate these two focuses

- Begin from the perspective of the displaced worker literature
  - Administrative data on earnings
  - Displacement identified with “distressed” firm

- Include separators from non-distressed firms in comparisons

- Emphasize the role of nonemployment in earnings outcomes

- Examine the distribution of earnings outcomes
Preliminary findings

• Separators from distressed firms are no more likely to experience a jobless spell or have a longer jobless spell than are other job separators.
  ▪ In fact, separators from distressed firms are less likely to have an observed jobless spell.

• Presence of a jobless spell after separation is important to earnings, more so than firm distress.
  ▪ Earnings penalty associated with job separation increases with the presence (not necessarily length) of a jobless spell.
  ▪ Separators from distressed firms do no worse, on average, than other separators.
LEHD Administrative Data

- Longitudinal Employer-Household Dynamics
- Longitudinal job histories from state UI wage data
- Firm characteristics from QCEW data
- Worker characteristics from Census surveys and SSA data
Identifying job changes and nonemployment spells in LEHD data

- UI wage record data

<table>
<thead>
<tr>
<th>PIK</th>
<th>SEIN</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person1</td>
<td>Firm A</td>
<td>7000</td>
<td>7000</td>
<td>3000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Person1</td>
<td>Firm B</td>
<td>0</td>
<td>0</td>
<td>4000</td>
<td>8000</td>
<td>8000</td>
</tr>
<tr>
<td>Person2</td>
<td>Firm A</td>
<td>5000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Person2</td>
<td>Firm D</td>
<td>0</td>
<td>0</td>
<td>3000</td>
<td>5500</td>
<td>6000</td>
</tr>
</tbody>
</table>

Job change with 1 full-quarter nonemployment spell.

Full-quarter earnings

Changes jobs in Q3
Our LEHD analysis sample

  – California, North Carolina, Oregon, Washington, Wisconsin.
• Separators w/1 yr of job tenure at time of separation.
  – Classify separators by employment change at firm.
  – Exclude firms with fewer than 50 employees.
  – Exclude separations caused by successor/predecessor events.
  – Also identify a comparison group of job stayers.
• More about the distressed separator group:
  – ‘Distressed’ = Firm experiences 30% drop in year-to-year employment. Similar cut-off to JLS.
  – 5% of separators in a calm year; 10% in recession year.
Nonemployment duration: Estimation

A competing-risks hazard model of re-employment

\[
\text{logit}(\text{new job in } t)_i = \alpha_t + \beta_t X_i + \gamma_t Z_i + \mu_{it}
\]

• $X_i$ is a vector of worker characteristics
  • worker age, sex, tenure at separating firm.
• $Z_i$ is a vector of characteristics of the separating firm
  • size, state, growth rate in the year prior to separation, growth rate of the industry within state.
Hazard Model Results

*Difference in transition probabilities for 1995 separators (percentage points)*

<table>
<thead>
<tr>
<th>New Jobs</th>
<th>New job same quarter</th>
<th>New job subsequent quarter</th>
<th>One full-quarter of joblessness</th>
<th>Two full quarters of joblessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm closed</td>
<td>6.1</td>
<td>10.5</td>
<td>6.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Rapidly shrinking firm</td>
<td>4.1</td>
<td>3.6</td>
<td>2.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Slowly shrinking firm</td>
<td>1.3</td>
<td>-0.6</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Slow growing firm</td>
<td>-0.6</td>
<td>-3.4</td>
<td>-1.0</td>
<td>-1.1</td>
</tr>
<tr>
<td>Rapidly growing firm</td>
<td>Ref. group</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recalls</th>
<th>Ref. group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm closed</td>
<td>n/a</td>
<td>n/a</td>
<td>-25.3</td>
<td>-5.7</td>
</tr>
<tr>
<td>Rapidly shrinking firm</td>
<td>n/a</td>
<td>n/a</td>
<td>-10.9</td>
<td>-1.4</td>
</tr>
<tr>
<td>Slowly shrinking firm</td>
<td>n/a</td>
<td>n/a</td>
<td>-2.6</td>
<td>-0.8</td>
</tr>
<tr>
<td>Slow growing firm</td>
<td>n/a</td>
<td>n/a</td>
<td>7.0</td>
<td>-0.7</td>
</tr>
<tr>
<td>Rapidly growing firm</td>
<td>Ref. group</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A Puzzle?

• The literature says
  – Layoff/separation ratio increases with size of contraction.
  – Laid off workers experience more unemployment than quitters do.
  
    Therefore, distressed separators should experience more unemployment than other separators do.

• We measure non-, not un-employment.
  – Result robust to attachment restrictions.
  – To restricting sample to men.

• Holds in each state.

• Robust to removing temp help firms.

• We eliminate the shortest jobs.
## Earnings Outcomes: Descriptive results

% change in quarterly earnings in new job – full-quarter jobs

<table>
<thead>
<tr>
<th>Category</th>
<th>10th</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
<th>90th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distressed Separations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New job same quarter</td>
<td>-33.9</td>
<td>-12.5</td>
<td>5.7</td>
<td>28.4</td>
<td>67.9</td>
</tr>
<tr>
<td>New job adj. quarter</td>
<td>-45.3</td>
<td>-21.0</td>
<td>1.6</td>
<td>27.1</td>
<td>65.4</td>
</tr>
<tr>
<td>Full-quarter non-employed</td>
<td>-63.3</td>
<td>-36.9</td>
<td>-8.8</td>
<td>18.9</td>
<td>51.6</td>
</tr>
<tr>
<td>2-3 qtrs non-employed</td>
<td>-67.4</td>
<td>-42.4</td>
<td>-14.4</td>
<td>14.4</td>
<td>65.0</td>
</tr>
<tr>
<td>4+ qtrs non-employed</td>
<td>-77.6</td>
<td>-52.5</td>
<td>-19.1</td>
<td>23.2</td>
<td>103.5</td>
</tr>
<tr>
<td>Second Job Becomes Main</td>
<td>-83.0</td>
<td>-56.6</td>
<td>-17.0</td>
<td>10.3</td>
<td>48.5</td>
</tr>
<tr>
<td>All Separators</td>
<td>10th</td>
<td>25th</td>
<td>50th</td>
<td>75th</td>
<td>90th</td>
</tr>
<tr>
<td>New job same quarter</td>
<td>-33.1</td>
<td>-10.3</td>
<td>10.2</td>
<td>37.7</td>
<td>89.6</td>
</tr>
<tr>
<td>New job adj. quarter</td>
<td>-47.1</td>
<td>-20.3</td>
<td>5.7</td>
<td>35.7</td>
<td>96.8</td>
</tr>
<tr>
<td>Full-quarter non-employed</td>
<td>-69.0</td>
<td>-41.4</td>
<td>-10.3</td>
<td>22.3</td>
<td>86.8</td>
</tr>
<tr>
<td>2-3 qtrs non-employed</td>
<td>-69.1</td>
<td>-41.8</td>
<td>-9.2</td>
<td>29.8</td>
<td>118.1</td>
</tr>
<tr>
<td>4+ qtrs non-employed</td>
<td>-76.8</td>
<td>-48.7</td>
<td>-7.7</td>
<td>50.3</td>
<td>198.5</td>
</tr>
<tr>
<td>Second Job Becomes Main</td>
<td>-81.1</td>
<td>-52.8</td>
<td>-14.4</td>
<td>22.0</td>
<td>66.6</td>
</tr>
<tr>
<td>Job Stayers (distressed firms)</td>
<td>-25.7</td>
<td>-11.5</td>
<td>0.2</td>
<td>13.8</td>
<td>27.3</td>
</tr>
</tbody>
</table>
Length of joblessness and earnings outcomes

We estimate the change in earnings upon re-employment at a new job by length of jobless spell after separation.

\[ \Delta y_{it} = \alpha_t + \beta_t X_i + \gamma_t Z_i + \delta_t S_i g_i + \mu_{it} \]

- \( \Delta y \) = change in log earnings from 4 quarters before reference quarter
- \( X_i \) = vector of worker characteristics
- \( Z_i \) = vector of characteristics of the separating firm, including \( g \)
- \( S_i \) = dummy variable for separator
- \( g_i \) = growth rate category of separating firm
- \( \delta_t \) = earnings “penalty” for separators relative to stayers
Earnings Outcomes: Regression results

Change in log earnings, relative to stayers, from four quarters before reference quarter to first full quarter of earnings after re-employment, 1995 sample (percentage points)

<table>
<thead>
<tr>
<th>Nonemployment spell</th>
<th>Firm closed</th>
<th>Rapidly shrinking firm</th>
<th>Slowly shrinking firm</th>
<th>Slow growing firm</th>
<th>Rapidly growing firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>New job same quarter</td>
<td>-1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>New job next quarter</td>
<td>-1</td>
<td>-3</td>
<td>-9</td>
<td>-9</td>
<td>-4</td>
</tr>
<tr>
<td>Jobless 1 full-quarter</td>
<td>-12</td>
<td>-20</td>
<td>-20</td>
<td>-23</td>
<td>-22</td>
</tr>
<tr>
<td>Jobless 2 full-quarters</td>
<td>-25</td>
<td>-17</td>
<td>-21</td>
<td>-19</td>
<td>-15</td>
</tr>
<tr>
<td>Jobless 4 full-quarters</td>
<td>-20</td>
<td>-15</td>
<td>-20</td>
<td>-19</td>
<td>-16</td>
</tr>
</tbody>
</table>
Earnings change relative to stayers

Closed
Fast-shrinking
Slow-shrinking
Slow-growing
Fast-growing

Quarters of nonemployment

Percentage points
Earnings change relative to stayers
Third quantile

-1 0 1 2 3 4 5 6 7 8
Quarters of nonemployment

Closed
Fast-shrinking
Slow-shrinking
Slow-growing
Fast-growing

Percentage points
-50 -45 -40 -35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25
Earnings change relative to stayers
Fourth quantile

Quarters of nonemployment

Percentage points

Closed
Fast-shrinking
Slow-shrinking
Slow-growing
Fast-growing
Earnings change relative to stayers
Fifth quantile

Closed
Fast-shrinking
Slow-shrinking
Slow-growing
Fast-growing

Quarters of nonemployment

Percentage points
Conclusions and future work

- “Displaced” workers are no more likely to experience an observed jobless spell than are other separators.
  - In fact, they are less likely to have an observed jobless spell.
- The presence of a jobless spell is a stronger predictor of earnings outcomes than is distress.
  - Length of jobless spell is less important.
  - Distressed workers do no worse than other separators.

Future direction of paper

- Other years and quarters
- Out-of-state moves
- Other heterogeneity in earnings regressions
  - Firm effects, position in wage distribution.
Three papers

• Earnings outcomes by time until re-employment.

• Expand JLS regression to include separators from non-distressed firms.

• Integrate time since displacement and time to re-employment into a single earnings equation.
Data: LEHD Administrative Data

- Longitudinal job histories from state UI wage data
- Firm characteristics from QCEW data
- Worker characteristics from Census surveys and SSA data
- Voluntary partnership: 49 states + DC
- Length of time series varies by state.
Nonemployment duration: Descriptive results

<table>
<thead>
<tr>
<th>2001 Job Separators</th>
<th>All Separators</th>
<th>Distressed Separators</th>
</tr>
</thead>
<tbody>
<tr>
<td>New job in same quarter</td>
<td>29.1</td>
<td>31.7</td>
</tr>
<tr>
<td>New job in adjacent quarter</td>
<td>17.4</td>
<td>22.0</td>
</tr>
<tr>
<td>Full-quarter non-employed</td>
<td>16.6</td>
<td>13.4</td>
</tr>
<tr>
<td>Two or three quarters non-employed</td>
<td>8.3</td>
<td>8.9</td>
</tr>
<tr>
<td>Four or more quarters of non-employment.</td>
<td>13.7</td>
<td>13.0</td>
</tr>
<tr>
<td>No observed new job in state</td>
<td>14.9</td>
<td>10.9</td>
</tr>
</tbody>
</table>
Earnings change relative to stayers

Quarters of nonemployment

Closed

Percentage points

1st
2nd
3rd
4th
5th

-1 0 1 2 3 4 5 6 7 8
Earnings change relative to stayers

Fast-shrinking

Quarters of nonemployment

Percentage points
Earnings change relative to stayers

Slow-shrinking

Percentage points

Quarters of nonemployment

1st 2nd 3rd 4th 5th
Earnings change relative to stayers

Slow-growing

Percentage points

Quarters of nonemployment

-1 -0 1 2 3 4 5 6 7 8

1st 2nd 3rd 4th 5th

110 100 90 80 70 60 50 40 30 20 10 0

-10 -20 -30 -40
Earnings change relative to stayers

Fast-growing

Quarters of nonemployment

Percentage points

1st
2nd
3rd
4th
5th

-40 -30 -20 -10 0 10 20 30 40

-1 0 1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8
Earnings change relative to stayers

Re-employed in the same quarter

Percentage points

Quantile

1st 2nd 3rd 4th 5th

Fast
Slow-shrinking
Slow-growing
Fast-growing

Closed
Earnings change relative to stayers

Re-employed in adjacent quarter

Quantile

Percentage points

1st 2nd 3rd 4th 5th

Closed Fast-Shrinking Slow-shrinking Slow-growing Fast-growing
Earnings change relative to stayers

One quarter of nonemployment

Percentage points

Quantile

1st 2nd 3rd 4th 5th

Closed  Fast-Shrinking  Slow-shrinking  Slow-growing  Fast-growing
Earnings change relative to stayers

Two quarters of nonemployment

-35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35

Percentage points

1st 2nd 3rd 4th 5th

Quantile

Closed Fast-Shrinking Slow-shrinking Slow-growing Fast-growing

Two quarters of nonemployment
## Characteristics of the Sample

<table>
<thead>
<tr>
<th></th>
<th>All Separators</th>
<th>Distressed Separators</th>
<th>Job Stayers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at time of separation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>39.93</td>
<td>36.25</td>
<td>28.21</td>
</tr>
<tr>
<td>35-44</td>
<td>34.71</td>
<td>35.62</td>
<td>37.35</td>
</tr>
<tr>
<td>45-55</td>
<td>25.37</td>
<td>28.13</td>
<td>34.44</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Male</td>
<td>52.15</td>
<td>55.39</td>
<td>52.75</td>
</tr>
<tr>
<td><strong>Industry of Separation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Natural Resources &amp; Mining</td>
<td>1.85</td>
<td>2.99</td>
<td>1.53</td>
</tr>
<tr>
<td>B: Construction</td>
<td>6.02</td>
<td>5.63</td>
<td>4.42</td>
</tr>
<tr>
<td>C: Manufacturing</td>
<td>16.54</td>
<td>27.13</td>
<td>19.74</td>
</tr>
<tr>
<td>D: Trade, Transportation &amp; Utilities</td>
<td>21.73</td>
<td>17.59</td>
<td>19.52</td>
</tr>
<tr>
<td>E: Information</td>
<td>3.41</td>
<td>5.25</td>
<td>3.43</td>
</tr>
<tr>
<td>F: Finance Activities</td>
<td>6.97</td>
<td>6.61</td>
<td>6.35</td>
</tr>
<tr>
<td>G: Prof &amp; Business Services</td>
<td>14.28</td>
<td>19.72</td>
<td>9.96</td>
</tr>
<tr>
<td>H: Educational &amp; Health Services</td>
<td>15.78</td>
<td>9.21</td>
<td>21.14</td>
</tr>
<tr>
<td>I: Leisure &amp; Hospitality</td>
<td>7.56</td>
<td>4.57</td>
<td>4.99</td>
</tr>
<tr>
<td>J: Other Services</td>
<td>3.68</td>
<td>1.05</td>
<td>2.79</td>
</tr>
<tr>
<td>K: Public Administration</td>
<td>2.18</td>
<td>0.24</td>
<td>6.13</td>
</tr>
<tr>
<td><strong>Size of Separating Firm</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Firm (&lt;50 emp)</td>
<td>33.28</td>
<td>n/a</td>
<td>24.36</td>
</tr>
<tr>
<td>Mid-size Firm (50-500 emp)</td>
<td>32.59</td>
<td>68.61</td>
<td>29.07</td>
</tr>
<tr>
<td>Large Firm (&gt;500 emp)</td>
<td>34.13</td>
<td>31.39</td>
<td>46.57</td>
</tr>
<tr>
<td>N</td>
<td>2,061,754</td>
<td>149,064</td>
<td>29,406,830</td>
</tr>
</tbody>
</table>