The Short- and Long-Term Effects of Job Displacement on Employment at Older Ages

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Preliminary results – please do not cite without permission.  
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Effects of Job Loss on Labor Supply and Claiming of Social Security Benefits

• Effect of job loss & unemployment on OASI has received limited attention (compared, say, the effect on SSDI)
  • Partly because due to actuarial adjustment of benefits, early retirement does not affect program finances as much
• Several reasons why question of how OASI interacts with labor market conditions is important
• Short-run effect of job loss on retirement and claiming:
  • Older workers use OASI as insurance against temporary shock
  • Focus of existing literature
  • See that job loss leads to earlier retirement (e.g., Chan & Stevens '04)
  • Recession raise incidence of early claiming (e.g., Coile & Levine '06, '11)
• Long-run effect of job loss on retirement and claiming:
  • Wealth effect; incentive to replace zeros in AIME calculation
  • Retirement potential margin allowing workers to recoup losses in long-term earnings from job loss
  • Provide additional evidence that financial incentives matter for retirement
Estimate Effect of a Job Displacement on Short- and Long-Term Labor Supply and Claiming of OASI

Merged Data: 1) Firm-Level Employment Counts
- generated from 100% worker file
2) 1% Annual Worker W2 Earnings Histories
- cover entire U.S. labor market for 1974-2007
3) 1% OASI Claiming (Master Beneficiary Record)

Step 1: Estimate short-run effect of job displacement during mass-layoffs in early 1980s recessions on earnings & employment

Step 2: Estimate long-run effect of job displacement on earnings & employment

Step 3: Estimate short-run & long-run effect of job displacement on Social Security claiming behavior
**Identify Mass Layoffs at Firm Level**

<table>
<thead>
<tr>
<th><strong>Job Displacement:</strong></th>
<th>Separate from main employer held in 1979 during a mass-layoff event</th>
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<tbody>
<tr>
<td><strong>Mass-Layoffs:</strong></td>
<td>Lasting 30% employment drop over two years relative to level in 1979</td>
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<tr>
<td><strong>Added Evidence:</strong></td>
<td>At 30% employment decline, majority of workers leaving firm are layoffs, not quitters</td>
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<tr>
<td></td>
<td>(JOLTS, Davis, Haltiwanger, Faberman 2006)</td>
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</tbody>
</table>
Sample Restrictions

**Base Sample:** Male workers born 1930-1959 (early 40s at job loss)
At least 6 Years of tenure in 1979
EIN Size in 1979 > 50
Drop sectors not covered by SSA (public sector)
No restrictions on post-1979 employment (*JLS:* all employed each quarter; control group at same job)

**Main Results:** Include workers older than 55 in analysis

**Beneficiaries:** Only look at workers claiming on their own earnings history (no dependents)
Dynamic Pattern of Annual Earnings Losses


\[ e_{it} = \alpha_i + \gamma_t + \sum_{|k| \leq m} D_{it}^k \delta_k + f(\text{age}_{it}) + \varepsilon_{it} \]

\[ \text{where} \quad k = \text{years since job loss (to job loss)} \]

Events

Leave 1979 Employer in 1980-1986 while Employer has MLF

Control Group

Any Worker Not Separating 1980-86

(Identify Year Effects) [\textbf{‘Stayers’}]

Key Assumption

Trend in Outcome of Control Group of ‘Stayers’ is Valid Counterfactual
Effect of Job Displacement on Claiming Social Security Benefits

Implement Comparable Model

\[ C_{it} = \alpha + \gamma_t + \sum_{k>0} D_{it}^k \delta_k + \beta x_{i0} + u_{it} \]

\[ k = \text{years since job loss} \]

Outcome: Various measures of the age of claiming Social Security benefits

Time Since Job Loss: Closely related to the age of displacement

Key Assumption Conditional on Control Variables, Outcome of Control Group of ‘Stayers’ is Valid Counterfactual
1. **Match on additional characteristics**
   - Industry, firm size, firm wage, etc.

2. **Implement firm-level comparison**
   - Compare claiming pattern at level of firm experiencing mass-layoff instead of at the worker level
   - Can compare firm-level claiming before and after job loss
   - Match to non-mass layoff firms using firm-level characteristics

3. **Vary definitions of job displacement and control group**
   - Include non-mass layoff separators in control group

**Results Robust to Range of Controls for Selection:**
Alternative Control Groups (1): Selection & Sorting

Stayers in Other Firms: Similar Worker & Firm Trends

\[ e_{it} = \alpha_i + \gamma_t \lambda_j + \sum_{|k| \leq m} D^k_{it} \delta_k + f(age_{it}) + \varepsilon_{it} \]

\( k = \) years since job loss (to job loss)

Worker Differences: Mean & Growth of Earnings 1974-1979

⇒ Use trend of workers with similar mean/growth of pre-earnings, same firm size, same industry as counterfactual

⇒ Can be also implemented in matching/re-weighting framework
Study MLF at Firm Level: Pool Movers & Stayers (ITT Model)

\[ p_{gt} = \alpha_g + \gamma_t + \beta D_{gt}^{MLF} + \sum_{k \geq -2}^{10} D_{gt}^k \delta_k + \varepsilon_{gt} \]

- \( k \) = years before/after MLF at employer

- Compare change in application rate of all workers at MLF firm with change of workers at similar non-MLF firms

- Intent-to-treat: effectively use firm mass-layoff date as event
  - rescale by effect of mass-layoff on job mobility to make comparable to individual level estimate

- Cannot capture dynamics: pool over different job loss dates at the individual level
Result 1: Long-Term Effects of Job Loss on Earnings and Employment
Job Displacement Leads to Large and Persistent Losses in Earnings for Workers of All Ages (von Wachter et. al 2009)

Earnings Losses at Job Separation By Age at Displacement
Earnings All Jobs Including Zeros, Men in Stable Job 1974-1979 (in $1000)
Including Earnings at Ages up to 55 (62 for those Displaced Age 50+)

Source: 1% Files of Social Security administrative data (see text). Earnings in 2000 Dollars.
Job Displacement Also Leads to Large and Persistent Losses in Employment for Workers of All Ages

Employment Losses at Job Separation By Age at Displacement
Fraction Positive Earnings, Men in Stable Job 1974-1979
Including Earnings at Ages up to 55 (62 for those Displaced Age 50+)

Employment patterns after job loss for workers in prime working age are explored further in Song and von Wachter (2014).
The reason for the recovery is that job losers experience a slower reduction in employment with age compared to the control group of non-displaced workers.
Result 2: Effects of Job Loss on Age of Claiming Social Security Benefits
Effect of Job Displacement on Average Claiming Age by Year Since Displacement: First Falls, then Rises

In this figure, years since job displacement approximately measures the age of job loss. This is because workers can claim OASI only once and claiming OASI typically occurs from ages 62-65. (So for someone with ten years since a job loss who claims at age 62 was displaced at age 52.)

Notes: Mean for non-displaced=63.1
Magnitude of Effects is Substantial

1. Large Initial Decline and Recovery in Employment
   → about 15-30% initial decline in employment

2. Substantial Percentage Drop In Earnings
   → about a 40-50% decline in post-displacement earnings

3. Large Initial Increase Probability of Early Claiming
   → about 25% relative to the mean in our sample!
   → even five year after displacement, rise close to 20% wrt mean

4. In The Long-Run, Effect Reverses
   → 10 years after job loss effect zero,
   → 15 years after probability of early claiming drops 10% wrt mean

5. Substantial SR and LR Changes in Claiming Ages
   → SR 0.5-1 year drop, LR 0.3-0.4 rise (relative to SD of 1.5)
Result 3: Effects of Job Loss on Social Security Benefits
Increasing Labor Supply & Later Claiming & Recovery in Earnings Does Not Lead to Recovery in PIA

Loss Primary Insurance Amount Due to Job Displacement
Men in Stable Job 1974-1979 (US$)

Notes: Mean for non-displaced=15700
Summary

• Analyzed effect of mass-layoff and displacement on labor supply near retirement age and claiming of Social Security benefits using longitudinal administrative pension, firm, and earnings data

• Three Main Findings:
  1. Displacement of older workers leads to a large decline in labor supply and a strong rise in early benefit claiming
  2. Workers displaced in middle age have similar employment at older age as non-displaced workers (complete recovery) & claim Social Security benefits later
  3. Delay in claiming & labor supply response does not offset large losses in earnings and pension levels

  ➔ Workers appear respond to decline in life-time earnings by working longer & claiming later, offsetting negative initial effects
Bonus Slide – Interpretation: Wealth vs. Substitution Effects?

**Short-Run Effect:** Substitution Effect? Short-Run Elasticity ≈ -0.4 to -0.5

→ for workers nearing retirement age, a job loss leads to a large decline in earnings and moderate decline in PIA

→ Difficulty: not clear what actual offered wage really is

**Long-Run Effect:** Wealth Effect? Long-Run Elast. wrt PDV ≈ 0.45-.55

→ for workers displaced at younger ages lower life-time earnings reduces savings, private pension wealth & social security wealth, raising labor supply

→ persistent decline in earnings affects PIA, such that relative generosity of OASI declines, reducing effect of decline in wage

**Other Aspects:** Older job losers may experience difficulties in the labor market, experience health problems
Additional Measures of OASI Claiming
Effect of Job Displacement on Claiming of Social Security (OASI) Benefits:
Pr{Claiming Before FRA}

Change in Fraction Claiming Benefits Early Due to Job Displacement
Early Claiming of OASI Benefits Relative to Federal Retirement Age
Men in Stable Job 1974-1979

Notes: FRA=Federal Retirement Age. Mean for non-displaced=0.85

Source: 1% Files of Social Security administrative data (see text).
Effect of Job Displacement on PR{Claiming at Age 65} by Year Since Displacement: First Falls, then Rises

Change in Fraction Claiming Benefits at Age 65
Claiming of OASI Benefits (Primary Beneficiary)
Men in Stable Job 1974-1979

Source: 1% Files of Social Security administrative data (see text).

Notes: Mean for non-displaced=0.36
Sensitivity: Firm-Level Estimation Strategy
Robustness: Pattern Also Holds For Estimates at the Firm Level That Are Robust to Selective Displacement

Effect of Mass-Layoff on Early Claiming of Employees of Affected Firm vs. Average Incidence of Early Claiming of Control Group in Stable Firms
Men in Stable Job 19-1979 (US$)

Source: 1% Files of Social Security administrative data (see text).
Robustness: Pattern Also Holds For Estimates Using “Plant Closings” Instead of 30% Mass-Layoffs


Source: 1% Files of Social Security administrative data (see text).
Recovery in Earnings at Ages 62 and above
Late-Life Employment Recovery Leads to Recovery in Earnings (Partly Mechanical Effect)

Earnings Losses at Job Separation By Age at Displacement
Earnings All Jobs Including Zeros, Men in Stable Job 1974-1979 (in $1000)
Including Earnings at Ages up to 70

Source: 1% Files of Social Security administrative data (see text). Earnings in 2000 Dollars.
Patterns Visible in Raw Data
Fraction Claiming Benefits Early by Year, Displacements 1981-1983
Early Claiming of OASI Benefits Relative to Federal Retirement Age
Men in Stable Job 1974-1979

Source: 1% Files of Social Security administrative data (see text).
Average Claiming Age by Year, Displacements 1981-1983
Age of First Claim of OASI Benefits (Primary Beneficiary)
Men in Stable Job 1974-1979

Source: 1% Files of Social Security administrative data (see text).
Fraction Claiming Benefits at Age 65 by Year, Displacements 1981-1983
Claiming of OASI Benefits (Primary Beneficiary)
Men in Stable Job 1974-1979

Source: 1% Files of Social Security administrative data (see text).
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