The Impact of Unemployment Benefits Extensions on Disability Insurance Application and Allowance Rates

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Recent patterns

- Increased unemployment rate
- Ongoing Unemployment Insurance (UI) extension
- Increases in Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) applications
Policy concerns...and a silver lining?

- Both UI and SSDI/SSI discourage job search
- SSDI/SSI applications increase with unemployment rate
- But, UI extensions may discourage or delay disability application, especially from the healthier unemployed
Research questions

• What is effect of UI extensions on disability applications?

• What is effect of UI expiration, more generally, on applications?

• How does applicant pool change with UI extension?
Unemployment Insurance (UI)

• Usually 26 weeks at 50 percent of previous earnings, but varies by state

• Duration depends on concentration of earnings
  o More concentrated → shorter duration

• UI Extensions
  o Extended benefits (automatic triggers)
  o Emergency legislation
UI extensions

Weeks of Extended Benefits

Source: Department of Labor
Social Security Disability Insurance (SSDI)

• Covered if total and recent work history is sufficient

• Applications reviewed by state SSA office
  o Average initial allowance rate of 37 percent
  o Average wait time of 131 days

• Same benefit calculation as retirement program

• Few exits, except for FRA and death
Supplemental Security Income (SSI)

- Means tested
  - Countable income below benefit level
  - $2000 cap on non-housing wealth

- Same disability screening as SSDI

- Benefits = $674/mo – countable income

- States supplement federal benefits
Previous literature

• UI disincentive effects

• Disability insurance and the macroeconomy
  o Applications: Rupp and Scott 1998, Autor and Duggan 2003
  o Allowances: Rupp and Stapleton 1995, Strand 2002

• Job loss or UI benefits and disability
Timeline – Individual level

Source: Author’s illustration.
Timeline – State level

State application rate (left scale)

Proportion eligible for UI (right scale)

UI extended  Extension ends  Phase out ends

First N months  Ongoing  Phase out

Source: Author’s illustration.
Timeline – State level

Source: Author’s illustration.
Data

• Individual analysis with SIPP Gold Standard File (1990-2006)
  o SIPP: job loss, demographics, quarterly income
  o SSA 831 File: disability activity
  o SSA/IRS earnings records
  o Sample: 29,000 unemployed from 1990-2006

• State-level analysis with the SSA State Agency Monthly Workload (2000-2011)

• UI parameters and extensions: DOL Comparison of State UI Laws
State-level Results

• 1 ppt ↑ in Unemployment Rate →
  • 2 % ↑ in state SSDI application rate, 6% ↑ for SSI
  • 1% ↓ in state SSDI allowance rate, 1.2% ↓ for SSI

• In first months of new UI extension,…
  • SSDI applications ↑ negligibly, allowance rate ↑ 1.6%
  • SSI applications ↑ 7%, allowance rate ↑ 1.3%
UI extensions, **more** applications?

- UI benefits usually extended in weak and worsening economy

- But some states see federal-paid extensions with stable economy

- Interact new extension indicators with:
  - Endogenous: =1 if UI extended automatically, or U rate ↑ by ≥ 1ppt
  - Exogenous: =1 if UI extended but U rate ↑ < 1ppt
Endogenous and exogenous UI extensions

Endogenous (white) and Exogenous (red) UI Extensions – March 2002

Source: Author’s calculations from Department of Labor and Bureau of Labor Statistics
Endogenous and exogenous UI extensions

Endogenous (white) and Exogenous (red) UI Extensions – July 2008

Source: Author’s calculations from Department of Labor and Bureau of Labor Statistics
Mean application rate

Mean Application Rate by UI Extension Timing and Nature of Extension

<table>
<thead>
<tr>
<th>Timing</th>
<th>Percent of working-age adults applying for disability (annualized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous 12 months</td>
<td>Endogenous: 1.45, Exogenous: 1.35</td>
</tr>
<tr>
<td>First months</td>
<td>Endogenous: 1.63, Exogenous: 1.44</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Endogenous: 1.61, Exogenous: 1.56</td>
</tr>
<tr>
<td>Phase-out</td>
<td>Endogenous: 1.51, Exogenous: 1.56</td>
</tr>
</tbody>
</table>

Source: Author’s calculations from SSA State Agency Monthly Workload Data
Mean allowance rate

Mean Allowance Rate by UI Extension Timing and Nature of Extension

Source: Author’s calculations from SSA State Agency Monthly Workload Data
State-level Results

• In first months of new *exogenous* UI extension,…
  • SSDI applications ↑ negligibly, allowance rate ↑ 4%
  • SSI applications ↑ 7%, allowance rate ↑ 4%

• In first months of new *endogenous* UI extension,…
  • SSDI and SSI applications ↑ significantly
  • SSDI and SSI allowance rates ↓ but insignificant
## Timing of Disability Application by UI Month

### Timing of Disability Application Relative to Unemployment Insurance Exhaustion

<table>
<thead>
<tr>
<th>Month</th>
<th>All</th>
<th>Never extended</th>
<th>Already extended</th>
<th>Extended (further)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;2 mo before UI ends</td>
<td>116.5</td>
<td>99.4</td>
<td>29.4</td>
<td>7.0</td>
</tr>
<tr>
<td>1-2 mo before UI ends</td>
<td>97.1</td>
<td>66.7</td>
<td>21.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Month UI ends</td>
<td>108.0</td>
<td>65.0</td>
<td>24.0</td>
<td>19.0</td>
</tr>
<tr>
<td>1-2 mo after UI ends</td>
<td>77.4</td>
<td>50.9</td>
<td>15.5</td>
<td>11.0</td>
</tr>
<tr>
<td>3-6 mo after UI ends</td>
<td>57.5</td>
<td>36.2</td>
<td>13.1</td>
<td>8.3</td>
</tr>
<tr>
<td>7-12 mo after UI ends</td>
<td>43.5</td>
<td>25.1</td>
<td>12.4</td>
<td>6.0</td>
</tr>
<tr>
<td>13-24 mo after UI ends</td>
<td>39.6</td>
<td>22.2</td>
<td>10.0</td>
<td>7.5</td>
</tr>
<tr>
<td>25-48 mo after UI ends</td>
<td>24.7</td>
<td>12.7</td>
<td>6.8</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Note: Figures are applications in the average month over the given time period.

*Source*: Author’s calculations from the SIPP Gold Standard File
# Individual-level Results

## Marginal Effects on Probability of Applying for Disability Benefits

<table>
<thead>
<tr>
<th>Category</th>
<th>Marginal effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits extended, now expired</td>
<td>91.14 ***</td>
</tr>
<tr>
<td>Benefits not extended, now expired</td>
<td>45.92</td>
</tr>
<tr>
<td>Currently on extension</td>
<td>-44.72 ***</td>
</tr>
<tr>
<td>Initial expiration but extended</td>
<td>-45.22 ***</td>
</tr>
<tr>
<td>New extension announced</td>
<td>41.5 **</td>
</tr>
<tr>
<td>Currently uninsured (0/1)</td>
<td>29.87 ***</td>
</tr>
</tbody>
</table>

**N** 1,301,646

Notes: *** Statistically significant at the 99% confidence level; ** Statistically significant at the 95% confidence level; * Statistically significant at the 90% confidence level.

*Source:* Author’s calculations from the SIPP Gold Standard File.
## Individual-level Results

Marginal Effects on Probability of Applying Successfully or Unsuccessfully for Disability Benefits

<table>
<thead>
<tr>
<th></th>
<th>Allowed</th>
<th>Not allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits extended, now expired</td>
<td>174.91 ***</td>
<td>165.95 ***</td>
</tr>
<tr>
<td>Benefits not extended, now expired</td>
<td>119.98</td>
<td>118.23 **</td>
</tr>
<tr>
<td>Currently on extension</td>
<td>-45.96 **</td>
<td>-48.29 ***</td>
</tr>
<tr>
<td>Initial expiration but extended</td>
<td>-54.93 **</td>
<td>-47.72 *</td>
</tr>
<tr>
<td>New extension announced</td>
<td>129.74 ***</td>
<td>-16.35</td>
</tr>
<tr>
<td>Currently uninsured (0/1)</td>
<td>4.25</td>
<td>50.99 ***</td>
</tr>
</tbody>
</table>

N: 1,301,646

Notes: *** Statistically significant at the 99% confidence level; ** Statistically significant at the 95% confidence level; * Statistically significant at the 90% confidence level.

*Source: Author’s calculations from the SIPP Gold Standard File.*
Summary of Results

• UI extension and expiration affect timing of disability application
  - 91% higher in last month of UI (if extended)
  - 45% higher in last month of UI (no extension)
  - 45% lower in UI extension months

• Exogenous UI extensions reduce application rate, increase allowance rate in first months
Implications

• SSDI/SSI used as supplemental UI

• But UI extension transfers $ from SSDI/SSI to UI
  ○ General revenue instead of SSDI Trust Fund

• Delay may allow for job finding

• So UI extension may be underrated
• Bonus slides
Variation in UI duration

Source: Author’s calculations from the SIPP Gold Standard File
Survivor Functions by UI Extensions

Survivor Functions from Time of Job Loss, by whether Benefits are Extended

Proportion of individuals who have not yet applied for disability

Months since job loss

- Never extended
- Already extended
- Extended (further)

Source: Author’s calculations from the SIPP Gold Standard File
Conceptual framework

• Unemployed compare utility from job search and disability application

• For some, search is higher utility with UI, lower when UI is exhausted

• UI extension pushes out point where $U(\text{search}) < U(\text{DI app})$

• Higher-probability (unhealthier) applicants apply immediately, unaffected by extension

• Lower-probability (healthier) applicants delay application until UI exhaustion
State-level empirical model

- Basic model:
  \[ \text{App}_{st} = \alpha_0 + \alpha_1 \text{New}_{st} + \theta_1 U_{st} + \theta_2 U_{s,t-6} + \pi_1 t + \pi_2 t^2 + m_t + \xi_s + \varepsilon_{st} \]
  \[ \text{Allow}_{st} = \alpha_0 + \alpha_1 \text{New}_{s,t-4} + \theta_1 U_{s,t-4} + \theta_2 U_{s,t-10} + \pi_1 t + \pi_2 t^2 + m_t + \xi_s + \varepsilon_{st} \]

- \text{New}_{st}: =1 if new UI extension in that month, 0 otherwise

- \text{U}_{st}: Unemployment rate in state s at time t

- \text{U}_{s,t-6}: Unemployment rate in state s lagged 6 months
  - Controls for population coming off UI
App_{st} = \beta_0 + \beta_1 \text{First}_{st} + \beta_2 \text{Ongoing}_{st} + \beta_3 \text{PhaseOut}_{st} + \theta_1 U_{st} + \theta_2 U_{s,t-6} \\
+ \pi_1 t + \pi_2 t^2 + m_t + \xi_s + \nu_{st} \\

Allow_{st} = \beta_0 + \beta_1 \text{First}_{s,t-4} + \beta_2 \text{Ongoing}_{s,t-4} + \beta_3 \text{PhaseOut}_{s,t-4} + \theta_1 U_{s,t-4} \\
+ \theta_2 U_{s,t-10} + \pi_1 t + \pi_2 t^2 + m_t + \xi_s + \nu_{st} \\

- First: =1 if in first N months of N-month extension, 0 otherwise \\
- Ongoing: =1 if in extension but not first N months \\
- PhaseOut: =1 if in first N months after N-month extension ends \\
- U_{st}: Unemployment rate in state s at time t \\
- U_{s,t-6}: Unemployment rate in state s lagged 6 months \\
  - Controls for population coming off UI
Individual-level Empirical Model

- Accelerated failure time (gamma):
  \[ \ln T = \gamma_0 + \gamma_1 UINext_{ist} + \gamma_2 UINow_{ist} + \gamma_3 UILast_{ist} + \gamma_4 New_{ist} + \gamma_5 OnExt_{ist} + \gamma_6 InitExp_{ist} + \lambda_1 U_{st} + \lambda_2 U_{sto} + X_{ist} \zeta + \nu_{ist} \]
- “Failure”: Apply for disability benefits
- UINow_{ist}: effect of UI exhaustion for those with extended benefits
- UINow_{ist} + InitExp_{ist}: effect of UI exhaustion for those with no extended benefits
- OnExt_{ist}: effect of extended benefits currently