



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

Matthew S. Rutledge  
Research Economist  
Center for Retirement Research at Boston College

13<sup>th</sup> Annual Retirement Research Consortium Conference  
Washington, DC  
August 4, 2011

The research was supported by a grant from the U.S. Social Security Administration (SSA) as part of the Retirement Research Consortium (RRC). The research in this paper was conducted while the author was a Special Sworn Status researcher of the U.S. Census Bureau at the Boston Census Research Data Center. All results have been reviewed to ensure that no confidential information is disclosed. The findings and conclusions expressed are solely those of the author and do not represent the views of SSA, the U.S. Census Bureau, any agency of the federal government, or Boston College.

# 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

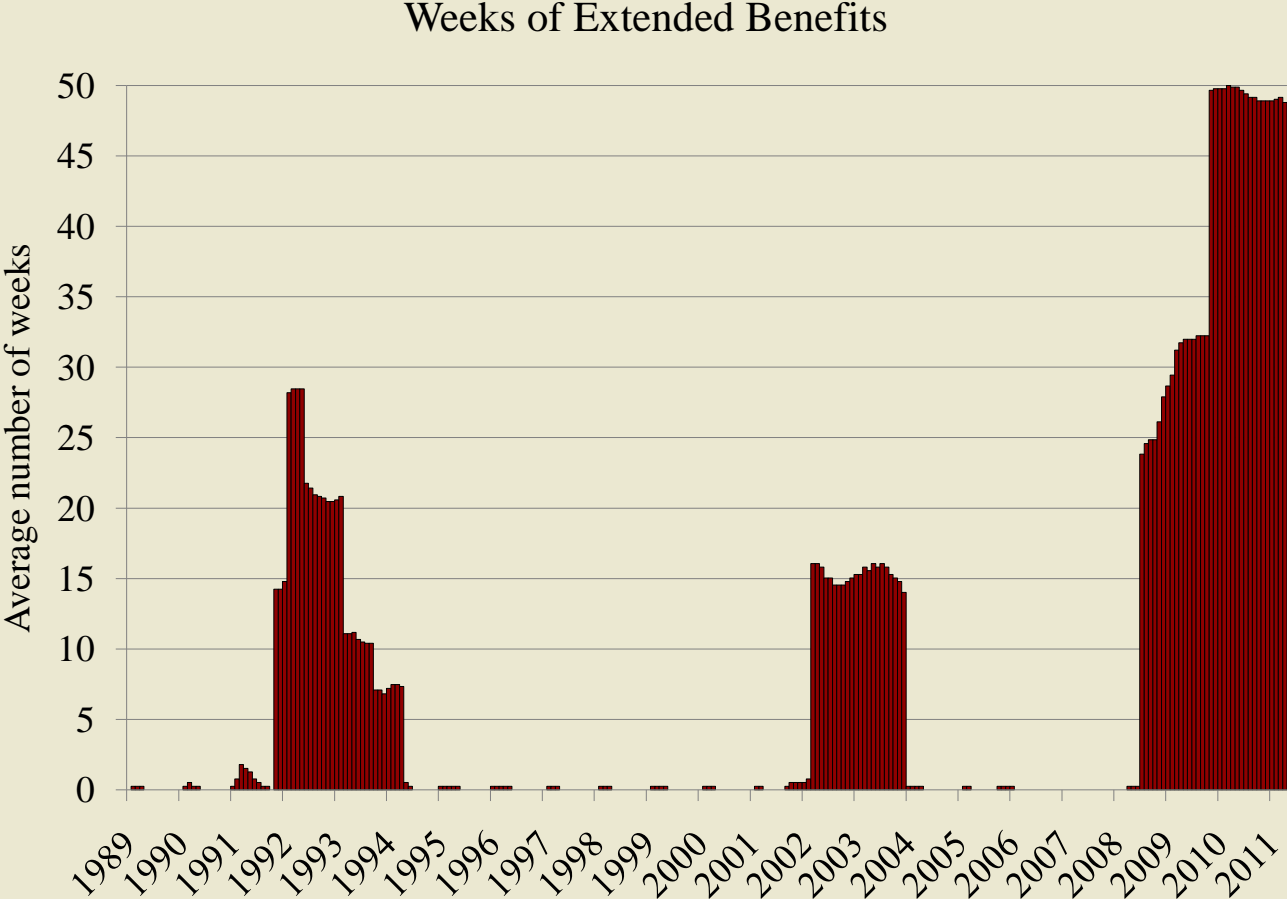
# Research questions

- 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
  - More concentrated → shorter duration
- UI Extensions
  - Extended benefits (automatic triggers)
  - Emergency legislation

# UI extensions



Source: Department of Labor

# Social Security Disability Insurance (SSDI)

- Covered if total and recent work history is sufficient
- Applications reviewed by state SSA office
  - Average initial allowance rate of 37 percent
  - Average wait time of 131 days
- Same benefit calculation as retirement program
- Few exits, except for FRA and death



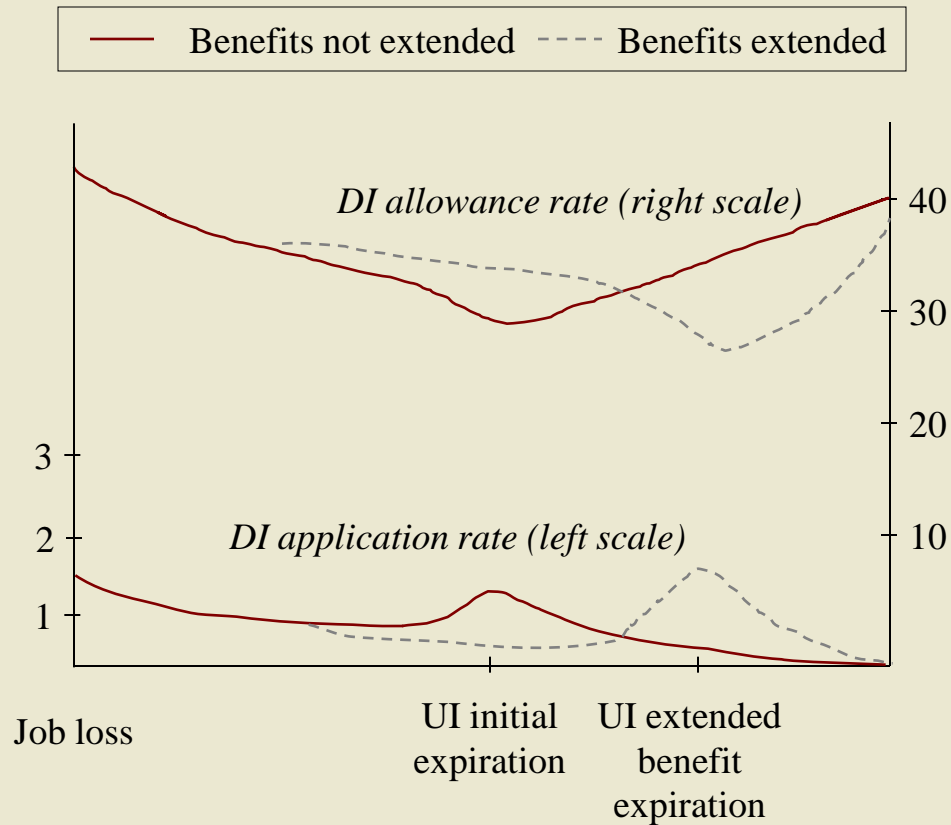
# Supplemental Security Income (SSI)

- 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

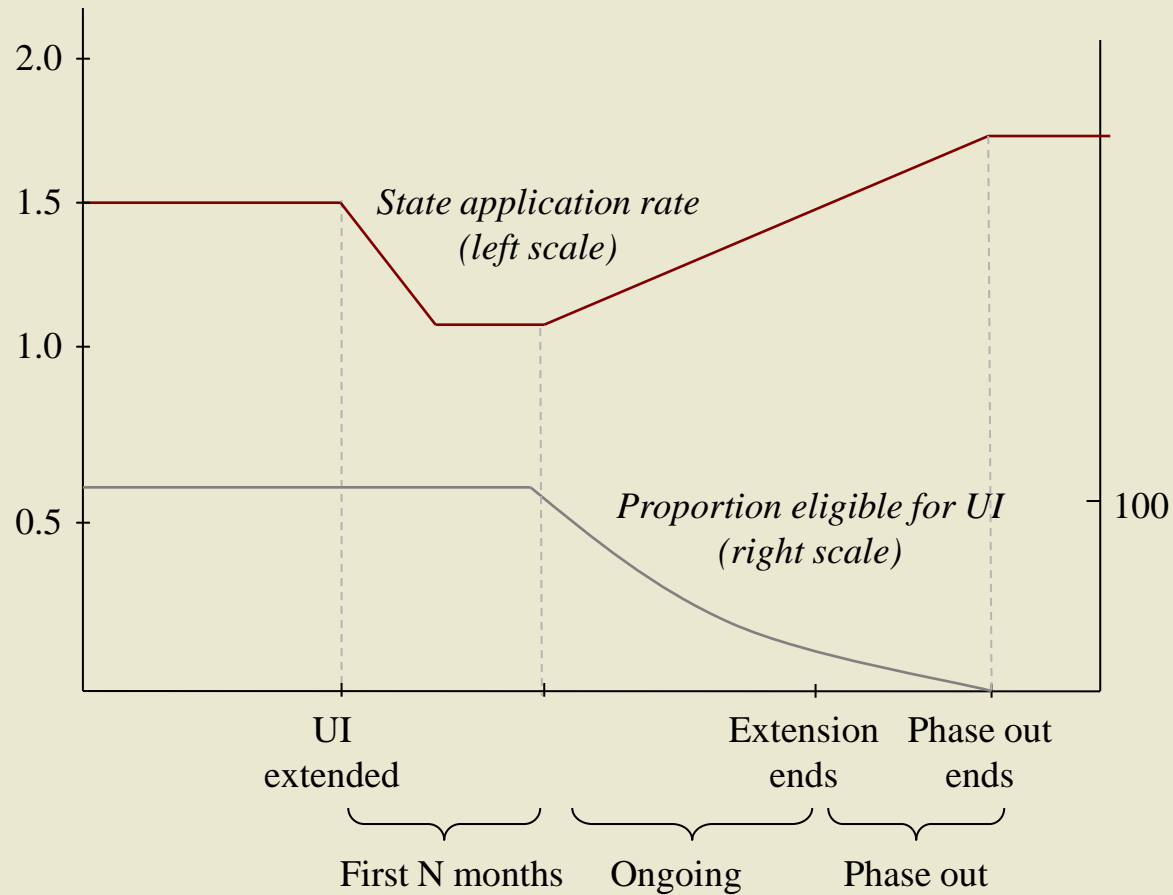
- UI disincentive effects
  - Mortensen 1977, Moffitt 1985, Meyer 1990, Katz and Meyer 1990, Card and Levine 2000
- Disability insurance and the macroeconomy
  - Applications: Rupp and Scott 1998, Autor and Duggan 2003
  - Allowances: Rupp and Stapleton 1995, Strand 2002
- Job loss or UI benefits and disability
  - Roed and Zhang 2005, Pellizzari 2006, Lindner 2011

# Timeline – Individual level



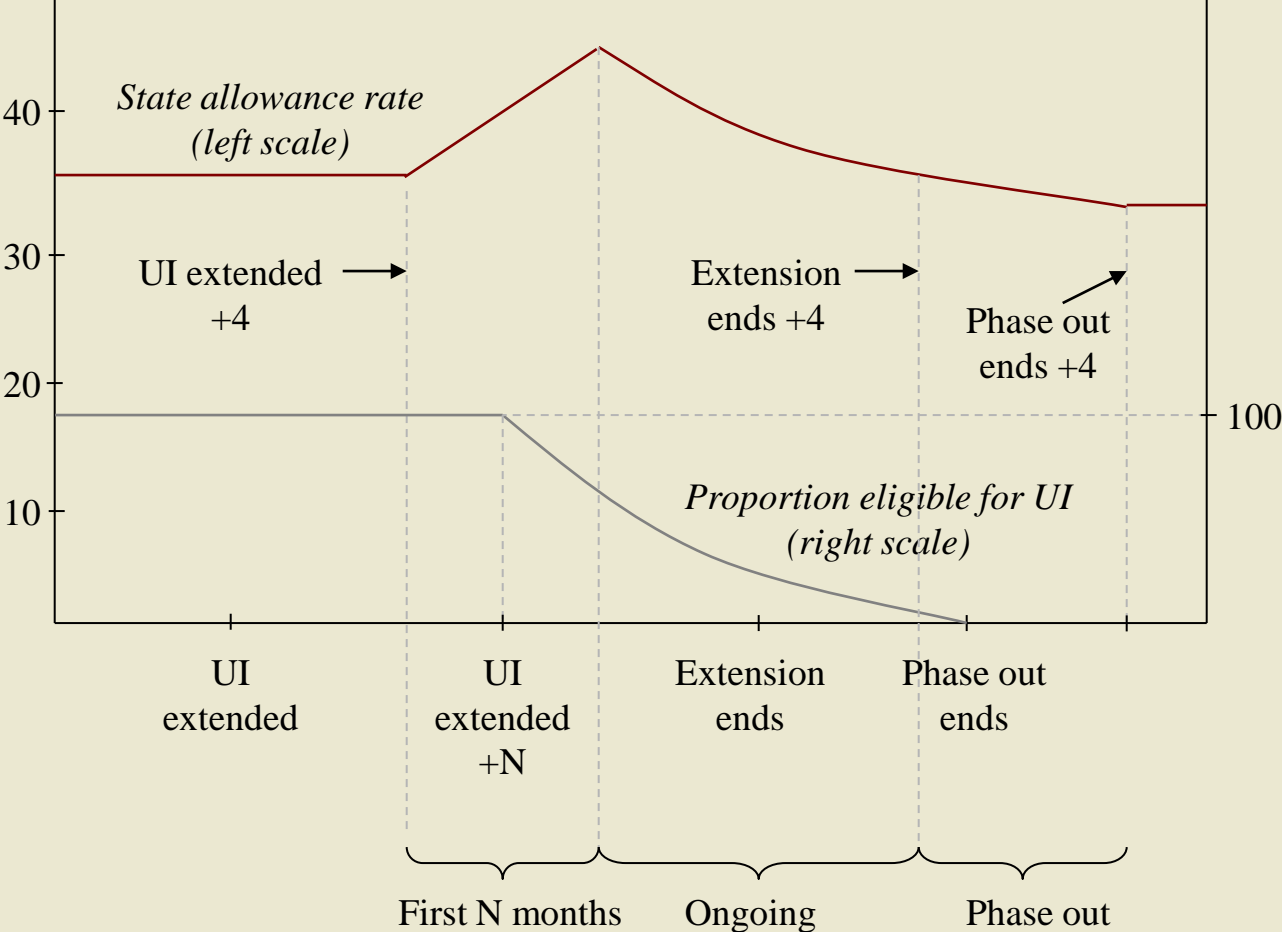
Source: Author's illustration.

# Timeline – State level



Source: Author's illustration.

# Timeline – State level



Source: Author's illustration.

# Data

- Individual analysis with SIPP Gold Standard File (1990-2006)
  - SIPP: job loss, demographics, quarterly income
  - SSA 831 File: disability activity
  - SSA/IRS earnings records
  - 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  $\uparrow$  in Unemployment Rate  $\rightarrow$ 
  - 2 %  $\uparrow$  in state SSDI application rate, 6%  $\uparrow$  for SSI
  - 1%  $\downarrow$  in state SSDI allowance rate, 1.2%  $\downarrow$  for SSI
- In first months of new UI extension,...
  - SSDI applications  $\uparrow$  negligibly, allowance rate  $\uparrow$  1.6%
  - SSI applications  $\uparrow$  7%, allowance rate  $\uparrow$  1.3%

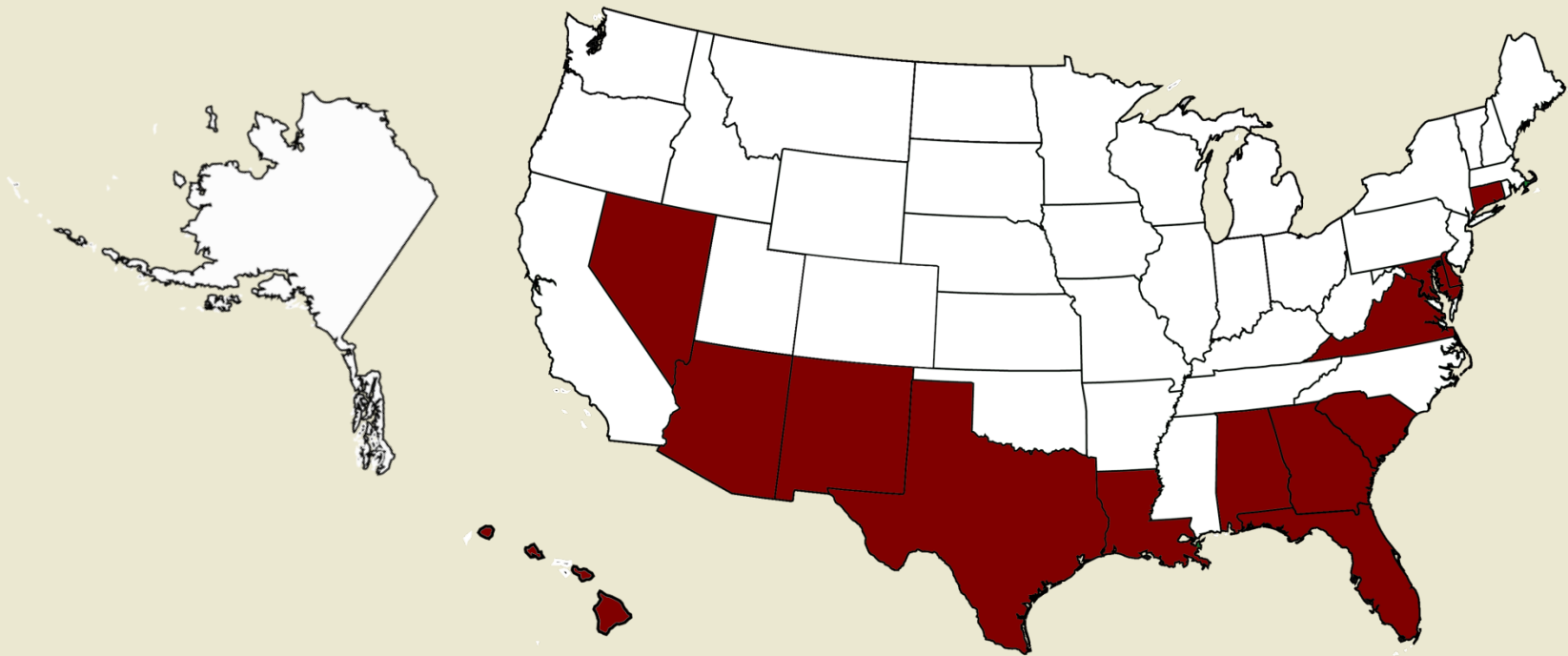
# UI extensions, more applications?

- 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  $\uparrow$  by  $\geq 1$  ppt
  - Exogenous: =1 if UI extended but U rate  $\uparrow < 1$  ppt



# Endogenous and exogenous UI extensions

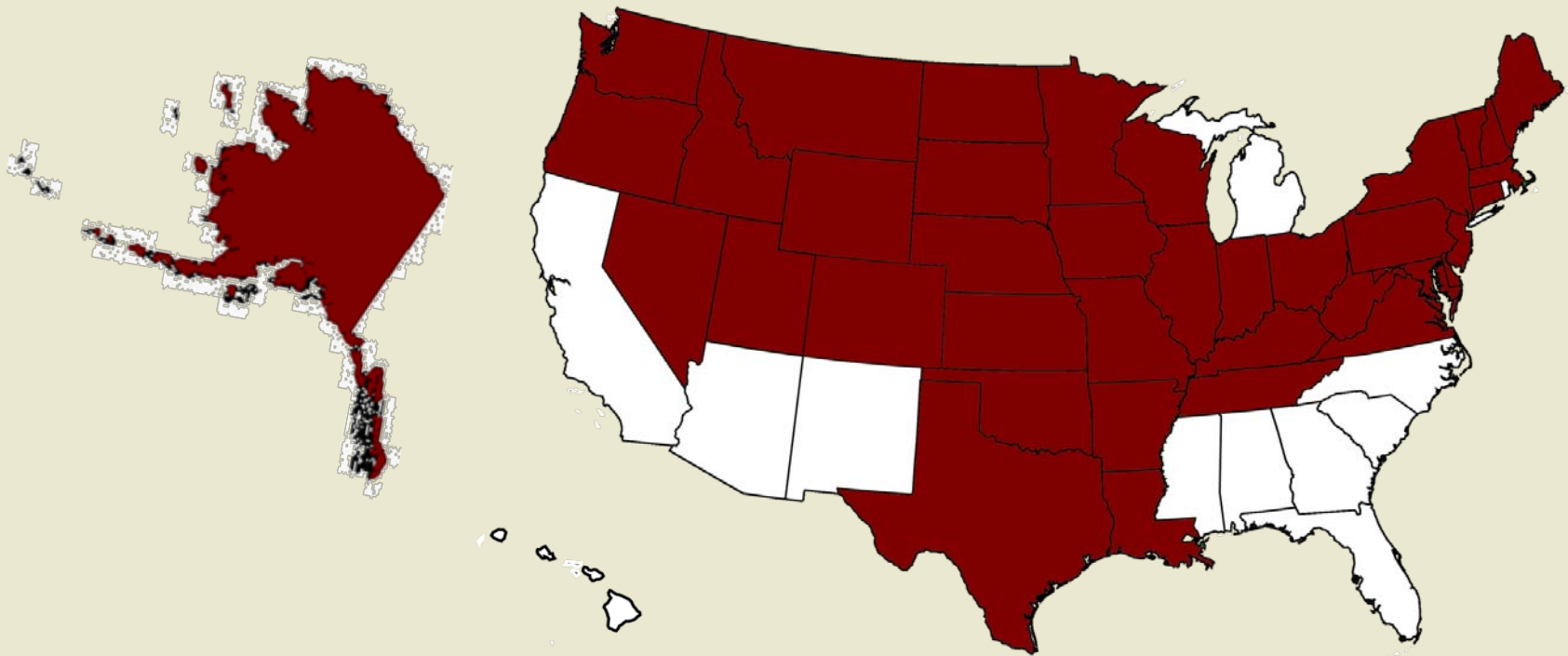
Endogenous (white) and Exogenous (red) UI Extensions – March 2002



Source: Author's calculations from Department of Labor and Bureau of Labor Statistics

# Endogenous and exogenous UI extensions

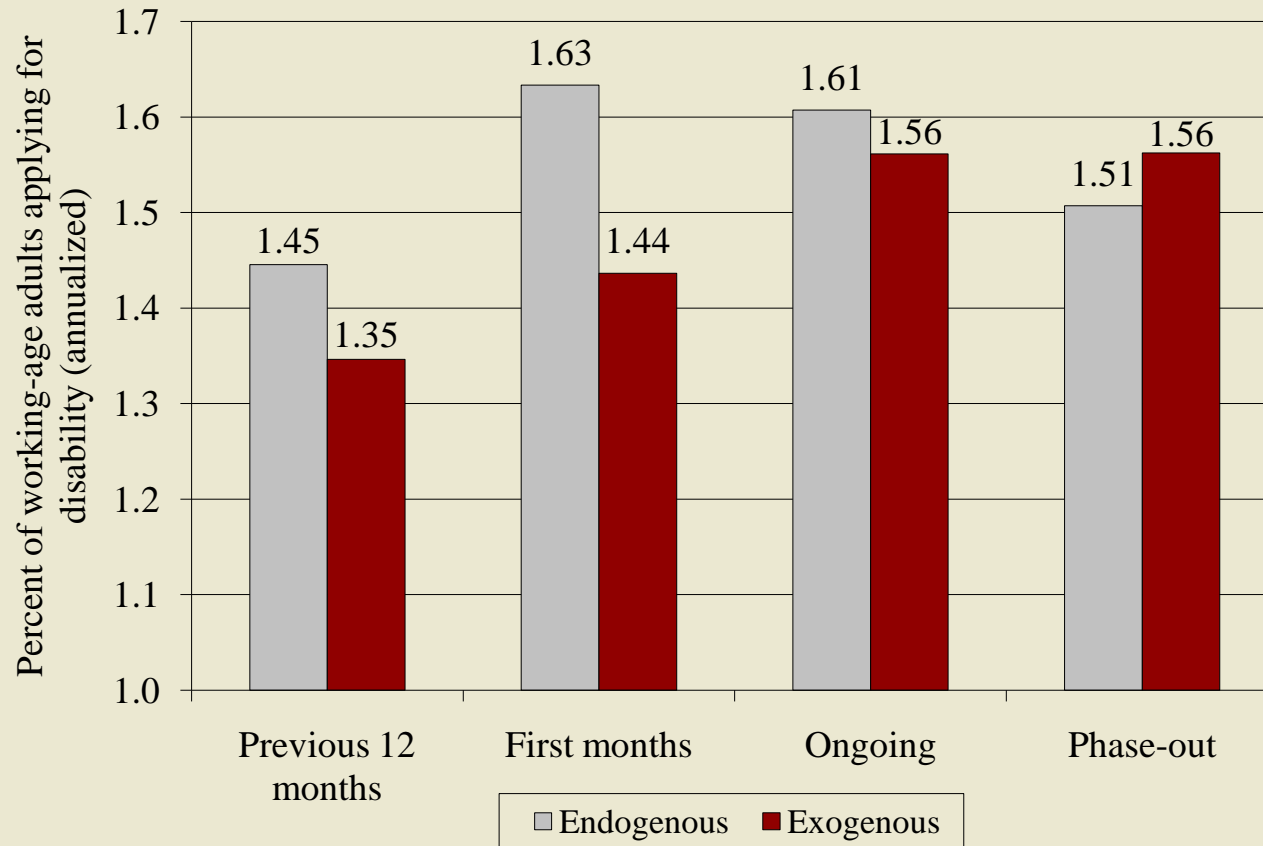
Endogenous (white) and Exogenous (red) UI Extensions – July 2008



Source: Author's calculations from Department of Labor and Bureau of Labor Statistics

# Mean application rate

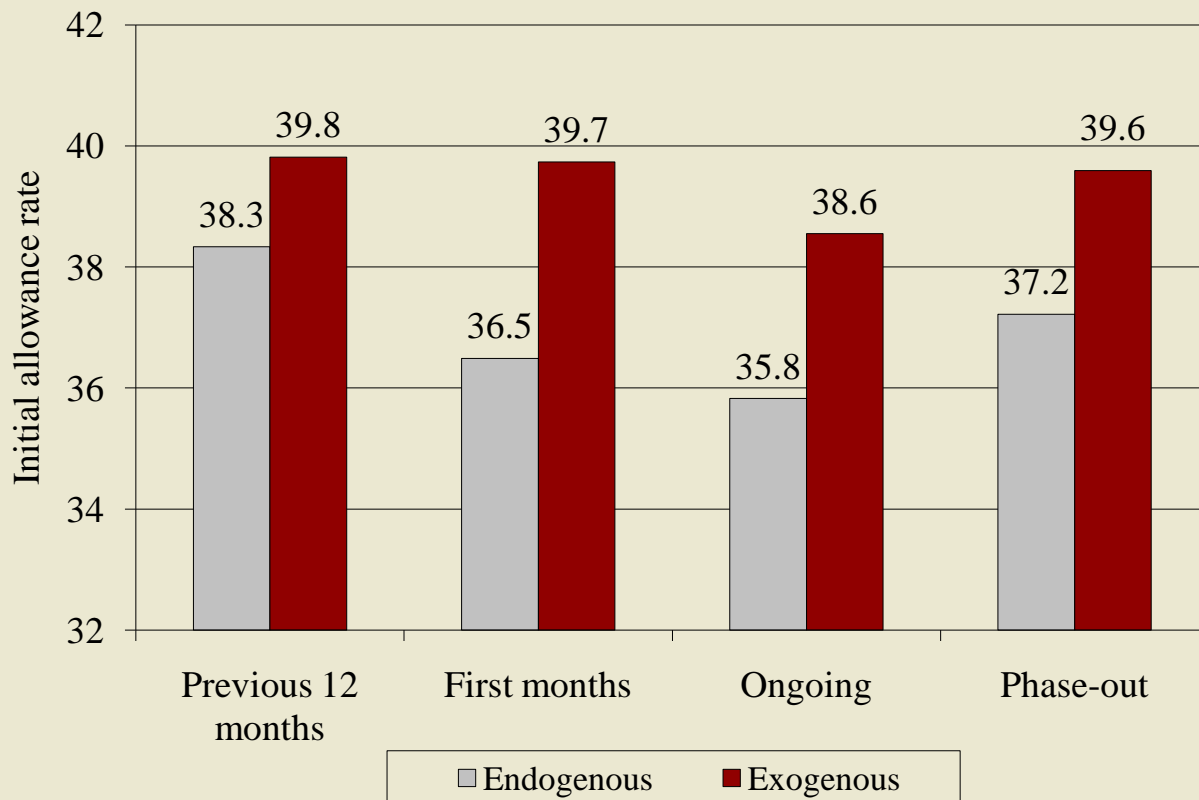
Mean Application Rate by UI Extension Timing and Nature of Extension



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  $\uparrow$  negligibly, allowance rate  $\uparrow$  4%
  - SSI applications  $\uparrow$  7%, allowance rate  $\uparrow$  4%
- In first months of new endogenous UI extension,...
  - SSDI and SSI applications  $\uparrow$  significantly
  - SSDI and SSI allowance rates  $\downarrow$  but insignificant

# Timing of Disability Application by UI Month

## Timing of Disability Application Relative to Unemployment Insurance Exhaustion

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

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

	Marginal effect
Benefits extended, now expired	91.14 ***
Benefits not extended, now expired	45.92
Currently on extension	-44.72 ***
Initial expiration but extended	-45.22 ***
New extension snnounced	41.5 **
Currently uninsured (0/1)	29.87 ***
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

	Allowed	Not allowed
Benefits extended, now expired	174.91 ***	165.95 ***
Benefits not extended, now expired	119.98	118.23 **
Currently on extension	-45.96 **	-48.29 ***
Initial expiration but extended	-54.93 **	-47.72 *
New extension announced	129.74 ***	-16.35
Currently uninsured (0/1)	4.25	50.99 ***
N	1,301,646	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

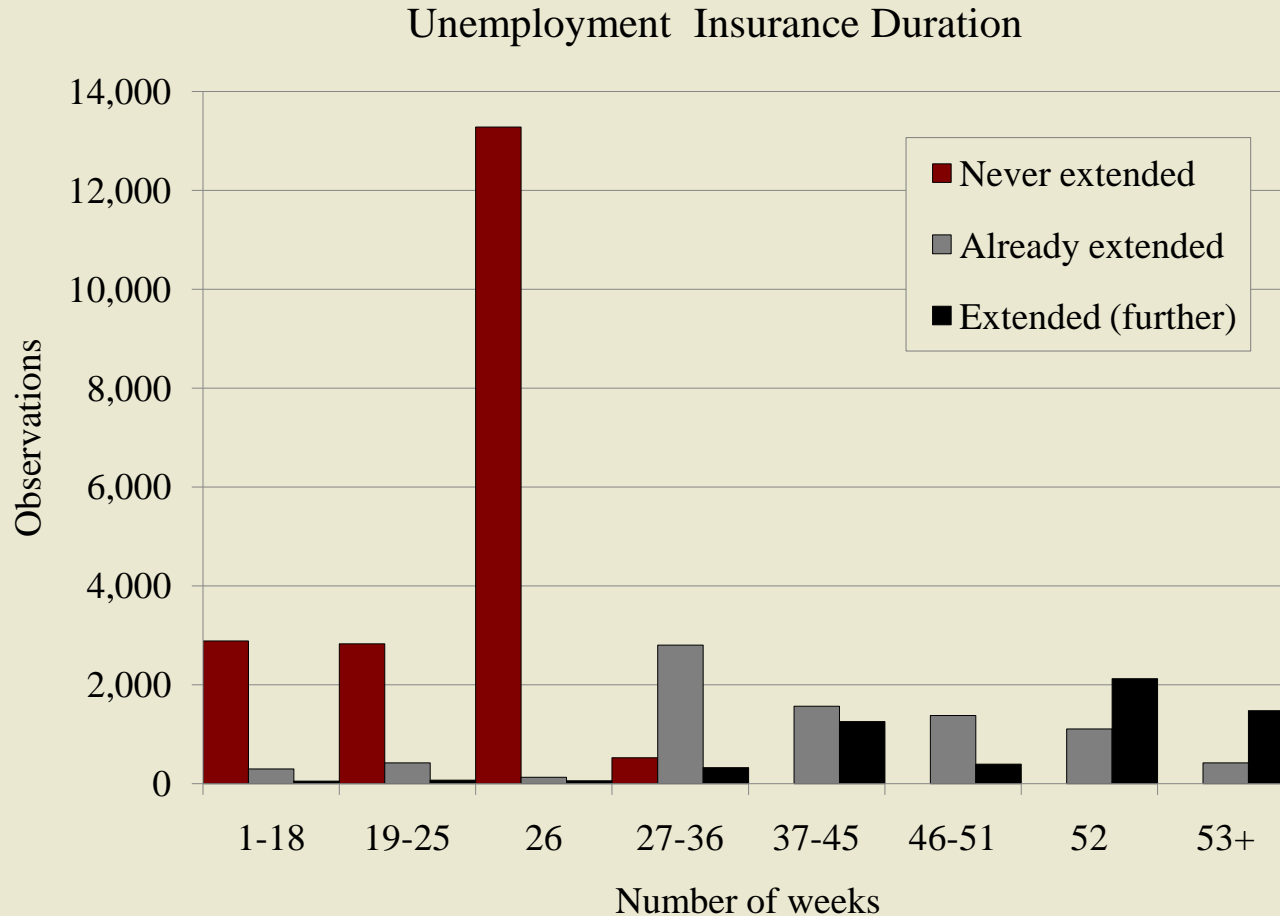
- UI extension and expiration affect timing of disability application
  - 91% higher in last month of UI (if extended)
  - 45% higher in last month of UI (no extension)
  - 45% lower in UI extension months
- Exogenous UI extensions reduce application rate, increase allowance rate in first months

# 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

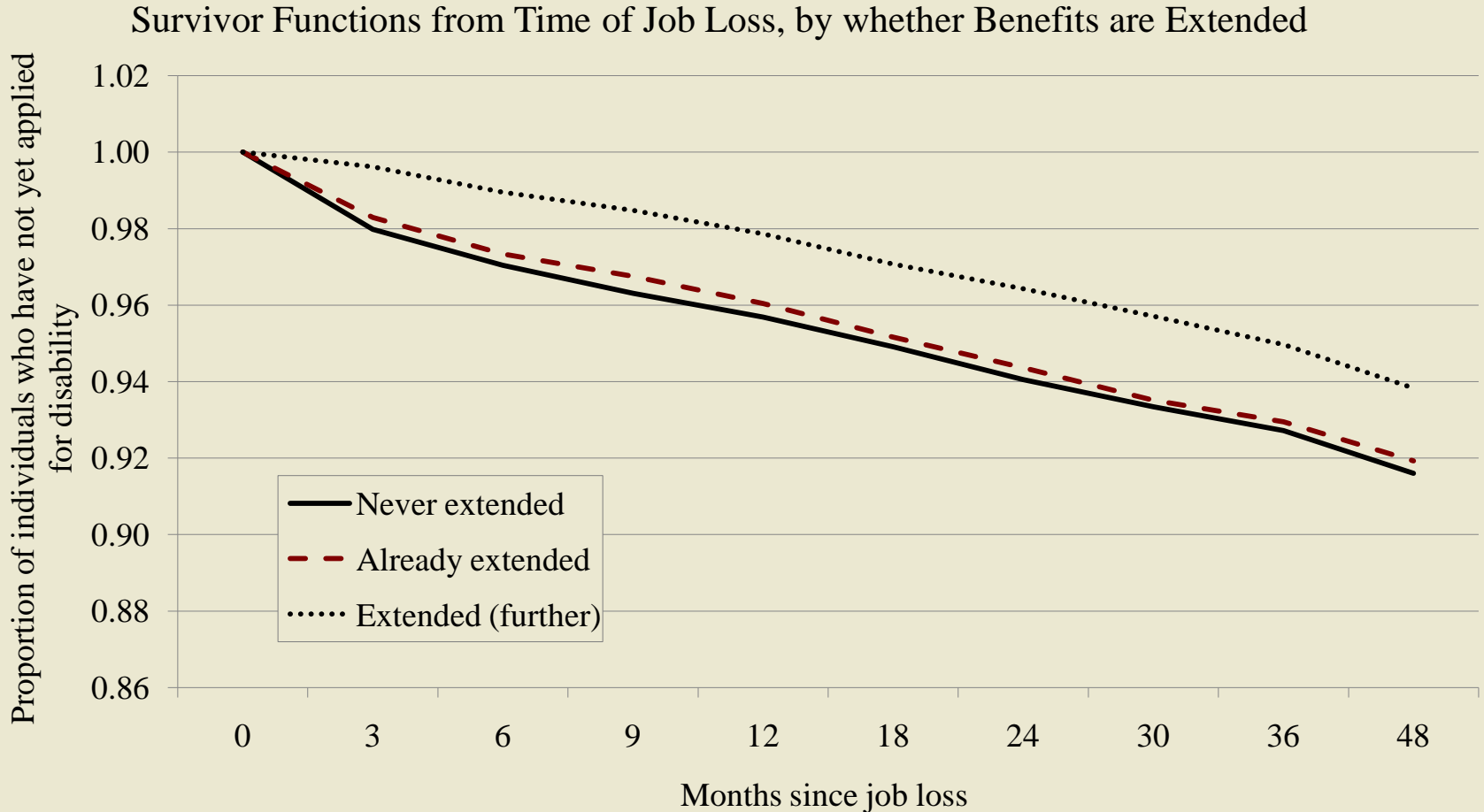
- Bonus slides

# Variation in UI duration



Source: Author's calculations from the SIPP Gold Standard File

# Survivor Functions by UI Extensions



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
- $U_{st}$ : 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

# State-level empirical model

$$\text{App}_{st} = \beta_0 + \beta_1 \text{First}_{st} + \beta_2 \text{Ongoing}_{st} + \beta_3 \text{PhaseOut}_{st} + \theta_1 U_{st} + \theta_2 U_{s,t-6} + \pi_1 t + \pi_2 t^2 + m_t + \xi_s + v_{st}$$

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

- 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):

$$\ln T = \gamma_0 + \gamma_1 \text{UINext}_{ist} + \gamma_2 \text{UINow}_{ist} + \gamma_3 \text{UILast}_{ist} + \gamma_4 \text{New}_{st} + \gamma_5 \text{OnExt}_{ist} \\ + \gamma_6 \text{InitExp}_{ist} + \lambda_1 U_{st} + \lambda_2 U_{st_0} + X_{ist} \zeta + v_{ist}$$

- “Failure”: Apply for disability benefits
- $\text{UINow}_{ist}$ : effect of UI exhaustion for those with extended benefits
- $\text{UINow}_{ist} + \text{InitExp}_{ist}$ : effect of UI exhaustion for those with no extended benefits
- $\text{OnExt}_{ist}$ : effect of extended benefits currently