Do Economic Shocks Around Retirement Age Leave a Cognitive "Scar"?

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Background

• **Stimulating activities at work**
  - cognitive reserve
  - resilience to cognitive decline (Adam et al. 2007; Stern et al. 1995)
  - retiring later \( \Rightarrow \) preserves cognitive function (Bonsang et al. 2012; Rohwedder and Willis 2010)

• **Recessions \( \Rightarrow \) cognitive functioning**
  1. job-loss \( \Rightarrow \) opportunities to uphold cognitive function (Coile and Levine 2007, 2011)
  2. job insecurity and work-related stress \( \Rightarrow \) psychosocial mechanism (Juster et al. 2010)
Aims

- Examine how a recession in the years leading up to retirement affect cognitive function at later-life (ages 65+) among older Americans

- We hypothesized that longer exposure to recessions prior to retirement leads to lower cognitive functioning
Individual-level Data

- **Health and Retirement Study (HRS)**
  - Years 1992-2010, cohorts 1920-1945
  - Restricted to age 65+ (N=13,577)

- **Covariates:**
  - sex, age
  - education, race/ethnicity,
  - labor force and marital status at age 54
Measures of cognitive function

1. **Word recall** (immediate and delayed word recall)
   - [range=0-20; mean≈10]

2. **Mental status** (backwards counting, date, object naming, name of US (vice) president)
   - [range=0-15 ; mean≈13]

3. **Summary score**
   - [range=0-35 ; mean≈23]
Recessions around retirement age

- **Current Population Survey (CPS)**
  1. State-level unemployment rates
  2. De-trended
  3. Recessions = years falling into highest quartile of deviations (references)

- **Link** by state of residence and year of birth
- **Index** number of recessions at 55-64
Statistical approach

• **Random-effects** models, including state- and cohort-fixed effects

\[ y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 State_{it} + \beta_3 Year of Birth_{it} + \beta_4 Recessions_{it} + \varepsilon_{it} \]

• \( y_{it} \) = cognition measure at ages 65+
• \( X_{it} \) = vector of individual-level characteristics
  (age, sex, race/ethnicity, labor force and marital status at age 54)
• \( State_{it} \) = fixed-effect for state of residence
• \( Year of Birth_{it} \) = fixed-effect for year of birth
• \( Recessions_{it} \) = index of no. of recessions at ages 55-64
Notes: Models include fixed-effects for state and year of birth, as well as controls for age, sex, race and labor force participation and marital status at ages 54.
Recessions at ages 55-64 and Total Mental Status at ages 65+

Notes: Models include fixed-effects for state and year of birth, as well as controls for age, sex, race and labor force participation and marital status at ages 54.
Recessions at ages 55-64 and Total Cognition Score at ages 65+

Notes: Models include fixed-effects for state and year of birth, as well as controls for age, sex, race and labor force participation and marital status at ages 54.
Interaction: Labor force status (age 54) and Recessions at ages 55-64

Notes: Models include fixed-effects for state and year of birth, as well as controls for age, sex, race and marital status at ages 54.
Discussion

- Recessions impact cognitive function
- Individuals out of labor force at age 54
- Effect of recessions on retirement
  - Out of labor force at 54 retire earlier
  - Employed at age 54 retire later
Strengths and limitations

- **Limitations**
  - Measure of recessions
  - Residential mobility
  - Limited life-course data

- **Strengths**
  - Nationally representative data
  - Repeated measures of cognition
  - Exogeneity of recessions
THANK YOU!