

# The Impact of Hypothetical Wealth Shocks on Retirement Timing

1

**NOVEMBER 11, 2017**

**Brooke Helppie-McFall**  
University of Michigan

**Joanne W. Hsu**  
Federal Reserve Board  
of Governors

**Matthew D. Shapiro**  
University of Michigan

The support of National Institute on Aging grant P01 AG026571 is gratefully acknowledged. The analysis and conclusions set forth are those of the authors and do not indicate concurrence with other members of the research staff or the Board of Governors of the Federal Reserve.

Contact Brooke Helppie-McFall at: [bhelppie@umich.edu](mailto:bhelppie@umich.edu).

# Research questions

2

Wealth losses in Great Recession caused at least some change in retirement expectations (McFall, 2011)

Do individuals think **hypothetical** wealth losses or gains would impact their retirement plans?

How do reactions to hypothetical losses compare with reactions in the Great Recession?

# Theory

3

Life cycle models with retirement timing as a choice  
(for example, Kimball and Shapiro, 2003; 2008)  
predict that:

- Wealth losses  $\Rightarrow$  delay retirement and reduce consumption
- Wealth gains  $\Rightarrow$  shift retirement forward and increase consumption

# Approach

4

- Following McFall (2011):
  - Use data from survey questions *designed* to answer these questions on several different surveys and populations
  - Quantify impact of hypothetical gains/losses on each individual, in terms of sustainable consumption and changes in expected labor supply behavior
  - Examine relationship between wealth shocks and expected changes in labor supply

# Data

5

- **Survey datasets:**
  - RAND American Life Panel (ALP)
  - Cognitive Economics (CogEcon)
  - Health and Retirement Study
  - Vanguard Research Initiative (VRI)
- **Americans age 50-65, in labor force, with >\$50k in DC retirement accounts**
- **Asked about wealth, retirement timing— both given current financial situation and then in case of hypothetical wealth loss and gain of ~30% of DC retirement wealth**

# ALP & CogEcon Data

6

- **American Life Panel Survey MS307**
  - Fielded February-August 2013
  - Analysis samples ~400 observations
- **CogEcon 2011 and 2013**
  - Fielded fall 2011 and fall 2013
  - Pooling across waves, ~250 observations

# Retirement expectations: ALP & CogEcon

7

- **Base:** “Thinking about work in general and not just your present job, what do you think the chances are that you will be working full-time after you reach age 65?”

# Retirement expectations: ALP & CogEcon

8

- **Hypothetical loss:** “Now, suppose that you find out tomorrow that **the value of your retirement accounts has decreased by \$[amount]**. In this situation, what do you think the chances are that you would be working full-time after you reach age 65?”
- [amount] is a rounded dollar amount, ~30% of DC holdings.



# HRS Data

9

- Module 11 in HRS 2014 Core interview
- Hypothetical shock questions asked of respondents with  $> \$50k$  in DC accounts who gave an age at which expect to stop work completely
- Analysis sample 116
- Retirement expectation and hypothetical shock questions ask expected **age** respondent will stop work completely.

# Analysis Variables I

10

- Total wealth =  $f$  (financial and investment assets, real estate assets, future labor earnings)
  - $SC$  = “sustainable consumption,” defined as annuity value of total wealth
  - $R_0$  = planned retirement age
  - $R_{sc}$  = retirement age needed under hypothetical shock to hold  $SC$  at pre-shock levels
- Independent variable is  $R_{sc} - R_0$

# Analysis Variables II

11

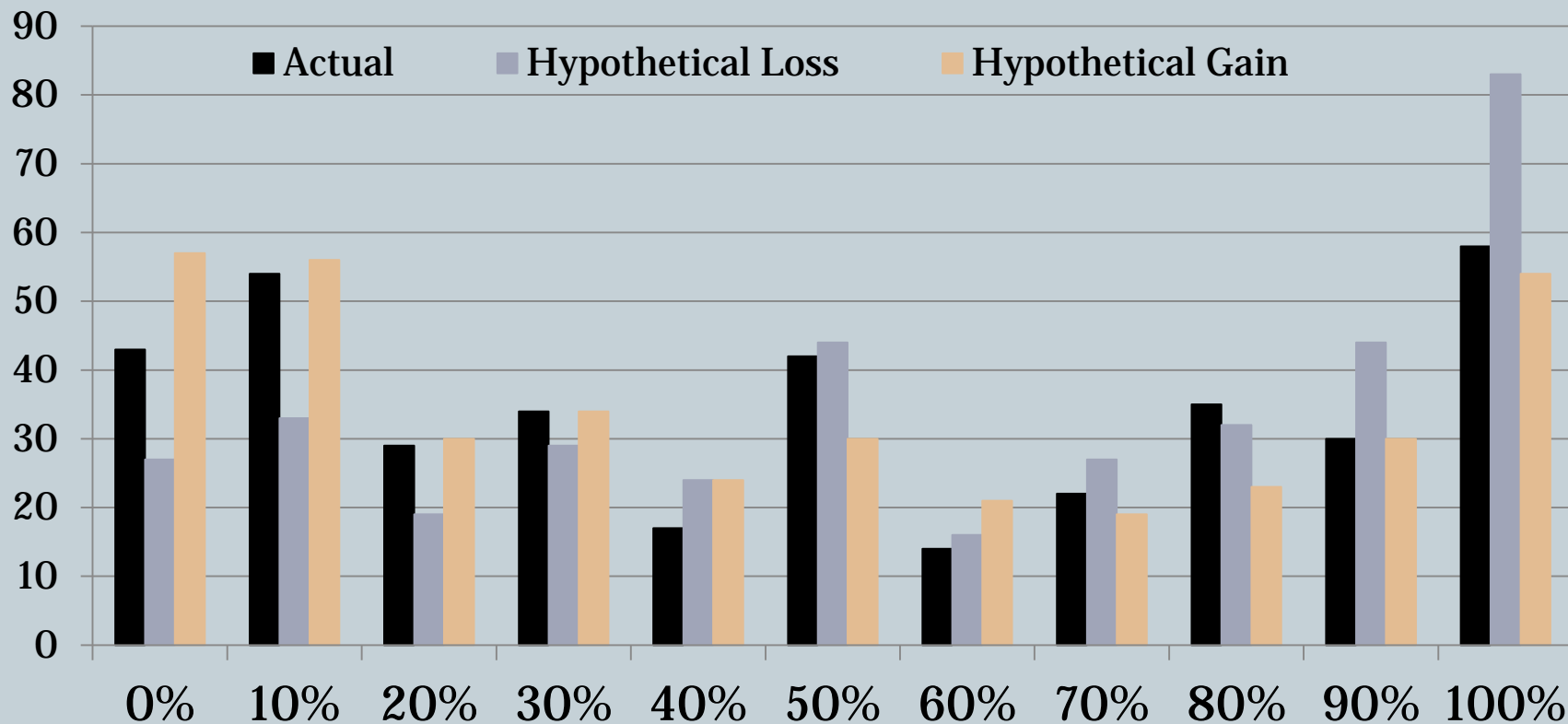
- **Dependent variable:**
  - **ALP and CogEcon:** Reported change in subjective probability of work after 65 after hypothetical shock:  $\Delta\text{Pr}(\textit{Work FT after 65})$
  - **HRS:** Reported change in retirement age after hypothetical shock

# Descriptive Statistics

12

- Ages in each sample similar, means 57-59
- HRS more male (56% v. ~50%)
- Fairly high-earning samples
  - ALP and CogEcon: mean ~\$100k, median ~\$50k
  - HRS: mean ~\$90k, median ~\$70k
- Average shock size, in terms of change in retirement age needed to hold SC constant after shock:
  - ALP: 1.8 yrs
  - CogEcon: 3 yrs
  - HRS: 1.5 yrs

# Subjective Probability of Working Full-Time after 65 (N=378) - ALP



# Regression specification following McFall (2011)

14

- Tobit regression

$$\begin{aligned} \text{change in retirement timing}_j \\ = \alpha + \beta_1(R_{SC} - R_0)_j + \beta_2(R_{SC} - R_0)^2 + \varepsilon_j \end{aligned}$$

where:

$$\begin{aligned} \text{change in retirement timing}_j \\ = \max(0, \Delta \Pr(FT \text{ after } 65)_j^*) \end{aligned}$$

or

$$= \max(0, \Delta(\text{retirement timing})_j^*)$$

$$\varepsilon_j | (R_{SC} - R_0)_j, Z_j \sim N(0, \sigma^2)$$

# Hypothetical Wealth Loss Results

15

| Sample  | ALP  | CogEcon   | HRS                              |
|---|--|-----------|----------------------------------|
| <b>Dependent Variable</b>   | $\Delta\text{Pr}(\text{Work FT after 65})$ |           | $\Delta\mathbf{R}_{\text{loss}}$ |
| <b>Marginal effect at mean of independent variable (1.78yrs ALP, 2.99 yrs CogEcon, 1.5 yrs HRS)</b> | 1.146 p.p.                                 | 1.098p.p. | 0.28 years                       |
|   | (0.552)**                                  | (0.719)   | (0.085)*                         |
| <b>Observations</b>   | 378  | 254       | 116                              |
| <b>Number uncensored obs.</b>   | 177  | 124       | 30                               |
| <b>Avg. implied effect</b>  | 14 days                                    | 22 days   | 5 months                         |

# Conclusions

16

- We find changes in retirement timing in the expected directions in reaction to hypothetical losses/gains.
- However, amount of the shock only explains a fraction of the estimated change, at the mean of the regressor (1.5-3 yrs).
- Results line up fairly well with actual behavior in the Great Recession (McFall, 2011).
- Attenuation bias and/or psychological impact of shocks (apart from amount) may be important.
- Policy implications for policy changes that would affect Social Security wealth or value of financial wealth: we can expect labor force participation changes in the expected directions, and individuals can give us some information about whether their labor supply will respond.



Thank you!