Trigger Events and Financial Outcomes Among Older Households

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Overview

• Research Approach
• Data & Measures
• Event Rates
• The Impact of Events on Wealth and Savings Adequacy
• Conclusions
Research Approach

• We track survey respondents from the time they retire and code their eligibility for, and exposure to various events.

• The data created by this approach are used to pursue two objectives
  1. Provide estimates of event rates
  2. Provide estimates of the impact of events on annuitized net wealth and retirement wealth adequacy
Data

• Health and Retirement Study (HRS) Initial Cohort (individuals born between 1931 and 1941 and their spouses)
  • Interviewed first in 1992 and every 2-years subsequently
  • Retirement is timed on the basis of receipt of social security or social security disability insurance (SSDI) at age 62 or older.
  • A wealth measure is formulated for each wave post retirement
  • Risk and exposure to events is coded for each wave post retirement
Figure 1
Distribution of Retirement Ages Based on Social Security Benefit Receipt After Age 62

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Wealth Measure

Our wealth measure is the sum of

• Net financial and property wealth (excluding the value of primary and secondary residences)
• Net value of primary residence
• Social security wealth (based on median non-zero benefit)
• “Smooth” pension wealth
• “Smooth” annuity wealth
• “Smooth” veteran’s benefits
Annuitized Net Wealth (ANW)

“If you took your total net wealth as an annuity to be paid over your expected lifetime, how much would be the payment be?”

The answer to this question is your ANW

ANW Assumptions
• Rate of time preference (0.025)
• ANW of singles and couples equalized (1.66)
Figure 2
The Distribution of ANW/1.5*(Poverty Threshold) in the First Period of Retirement

Ratio of ANW to 1.5 times the Poverty Threshold

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Events

We consider events across 5 domains

1. Changes in family structure (marriage, divorce, widowhood)
2. Cognitive decline (TICS score decline, noun recall score decline, self reported memory)
3. Health decline (self reported health, trouble with gross motor skills and daily living activities, nursing home utilization)
4. Loss of insurance
5. Large out of pocket medical expenses
Event Subsamples

Each event is associated with a subsample

• To be included in an event subsample a respondent must have been eligible for the event during the first wave they were observed as retired (baseline is retirement)

• We continue to follow them until they experience an event or are permanently dropped from the study (one observation post event)
Figure 3
Average 2-year Event Rates
Variation In Event Rates

Based on our estimates of events rates conditional on background characteristics

- **Marriage:** rates higher for the more educated

- **Widowhood:** Hispanic men have high rates, relative to other groups

- **Cognitive Decline:** Men, singles, minorities, the less educated, and those that we coded as retired receiving disabled worker benefits are at increased risk

- **Health Decline:** Singles, racial minorities, those with less education, and those who we code as retired receiving disabled worker benefits are at increased risk for most health events
Variation in Event Rates (cont.)

- **Loss of Insurance:** racial minorities, those with less education are at increased risk, while those we code as retiring with disabled worker benefits are at reduced risk.
- **Out of pocket Medical>$20K:** not much variation across groups
The Impact of Events on ANW

\[
\ln(ANW_{i,t}) = \alpha \cdot Event_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y + \epsilon_{i,t,y}
\]

In the above specification is ANW for individual

- \(Event_{i,t}\) is a 0,1 indicator of whether individual experienced the event in post retirement period
- \(Z_{i,t}\) is a vector of time varying individual-level controls
- \(\theta_i\) is an individual level error component to be estimated by fixed effects
- \(\delta_t\) is a post-retirement period effect
- \(\eta_y\) is year effect
- \(\epsilon_{i,t}\) is a iid error term.
Impact of Family Structure Change on $\ln(ANW)$

- **Marriage**
  - Men: 
  - Women: 

- **Divorce**
  - Men: 
  - Women: * 

- **Widowhood**
  - Men: ** 
  - Women: **

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Impact of Cognitive Decline on ln(ANW)

- TICS score drop
- Noun recall score drop
- Memory decline to Poor
- Memory decline to Fair or Poor

- ** p < 0.01
- * p < 0.05

Couple-Men  Couple-Women  Single Men  Single Women

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Impact of Health Decline on ln(ANW)

- Health decline to Poor
- Health decline to Fair or Poor
- Trouble with 3+ GMS
- Trouble with 3+ ADL
- Nursing trouble with home in past 2-years
- Nursing trouble with home currently

- Couple-Men
- Couple- Women
- Single Men
- Single Women

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Impact of Lost Health Insurance and Large out of Pocket Medical Expenses on ln(ANW)

Lost health insurance coverage

Out of pocket medical expenses > $20k

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Assessing Impact of Events on Retirement Savings Adequacy

To determine the impact of events on retirement wealth adequacy we estimate the probability of ANW falling below 1.5 times the federal poverty threshold.

Fixed effects estimation is not an option (those always poor and never poor would be excluded), but if we know an individual will be asset poor if

$$\alpha \cdot \text{Event}_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y + \varepsilon_{i,t} - \ln(1.5 \cdot \text{FPT}) < 0$$

$$\Rightarrow \varepsilon_{i,t} < \ln(1.5 \cdot \text{threshold}) - \left[ \alpha \cdot \text{Event}_{i,t} + \gamma \cdot Z_{i,t} + \theta_i + \delta_t + \eta_y \right]$$

In other words an individual will be asset poor if the random component of their ANW is sufficiently small.
Assessing Impact of Events on Retirement Savings Adequacy

Although we do not know the data generating process for ANW we do have an estimate and can compute an estimate of the probability of being poor as

$$\Phi \left( \ln(1.5 \cdot threshold) - \left[ \alpha \cdot \text{Event}_{i,t} + \gamma \cdot Z_{i,t} + \delta_{i,t} + \eta_{y} \right] \right)$$

where $\Phi(\ )$ is a kernel density estimate of the distribution of $\varepsilon_{i,t}$

To compute the effect of an event on the probability of being poor we simply compute the above expression conditional on an event, conditional on no event, and take the difference.
Impact of Noun Recall Score Drop on the Probability of Inadequate ANW Among Single Men
(Event Coefficient=-0.075)
Impact of Trouble with 3+ ADL on the Probability of Inadequate ANW Among Single Women
(Event Coefficient=-0.065)
Impact of Being in a Nursing Home on the Probability of Inadequate ANW Among Coupled Women (Event Coefficient=-0.203)
### Table 14
Assessing Vulnerable Groups

| Individual Attribute | Cognitive Decline | | | | Health Decline | | | | | |
|----------------------|-------------------|---|---|---|-----------------|---|---|---|---|
| Effect of event      | modest   | small    | modest   | small    | small   | modest-high | modest-high | modest-high |
| % of sample          | na       | na       | 6.97     | 18.87   | na      | na       | 6.97     | 18.87 |
| Relative risk        | low      | low      | high     | high     | low     | low      | high     | high |
| % near poor          | 26.0     | 22.0     | 39.9     | 49.3     | 26.0    | 22.0     | 39.9     | 49.3 |
| % of sample          | 7.9      | 6.4      | 2.2      | 7.1      | 7.9     | 6.4      | 2.2      | 7.1 |
| Relative risk        | high     | high     | high     | high     | high    | high     | high     | high |
| % near poor          | 54.4     | 49.8     | 62.2     | 67.6     | 54.4    | 49.8     | 62.2     | 67.6 |
| % of sample          | 10.2     | 7.3      | 2.0      | 6.1      | 10.2    | 7.3      | 2.0      | 6.1 |
| Relative risk        | high     | high     | high     | high     | high    | high     | high     | high |
| % near poor          | 52.9     | 48.6     | 60.5     | 77.2     | 52.9    | 48.6     | 60.5     | 77.2 |
| % of sample          | 3.1      | 2.0      | 0.1      | 2.0      | 3.1     | 2.0      | 0.1      | 2.0 |
| Relative risk        | high     | high     | high     | high     | high    | high     | high     | high |
| % near poor          | 49.6     | 43.8     | 64.1     | 73.9     | 49.6    | 43.8     | 64.1     | 73.9 |
| % of sample          | 17.2     | 8.6      | 2.3      | 5.9      | 17.2    | 8.6      | 2.3      | 5.9 |
| Relative risk        | no effect | no effect | no effect | no effect | no effect | no effect | no effect | no effect |
| % near poor          | 30.7     | 22.7     | 43.0     | 53.5     | 30.7    | 22.7     | 43.0     | 53.5 |
Conclusions

• Retirees face substantial risk of widowhood, cognitive decline, and health decline

• Some individuals are at greater risk than others
  – Cognitive decline: singles, men, nonwhites, low education, retired with SSDI
  – Health decline: singles, nonwhites (for most), low education, retired with SSDI
Conclusions (cont.)

• Some evidence that cognitive decline reduced ANW among married men and singles

• Health events are particularly important
  – Health decline occurs at a relatively high frequency
  – Health events have large statistically significant impacts on ANW
  – Married women and singles appear to be particularly vulnerable

• Health and cognitive decline have may have large impacts on the probability of having inadequate retirement resources, but only for individuals who would otherwise have ANW close to the adequacy threshold
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