Cutting one’s coat according to one’s cloth
How did the great recession affect retirement resources and expenditure goals?

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Dutch pension system

- Flat-rate **public pension**
  - 65+ poverty rate of 2% (OECD, 2015)
- Mandatory DB **occupational pensions**
  - Over 90% of employees enrolled
- Other **private pensions & private savings/housing wealth**
- Net replacement rate 95.7% (OECD average: 63.2%, OECD, 2015)
- Best system according to Mercer Global Pension Index up to 2011...
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- **Public pension reforms**
  - Increase eligibility age for public pensions (67 in 2021, then linked to life expectancy)
  - Restrictions on tax exempt private pension accumulation

- **Private pension funds financially unfit**
  - Cuts in accrued rights (on average 7.3% in real terms)

- **Reduced ability to compensate with private assets**
  - Disappointing returns
  - Large decline in housing prices

- **Unanticipated** decline in pension wealth
  - 2007: 7 pension funds had reserve deficit; average coverage 144%
  - 2008: 300 pension funds had reserve deficit; average coverage 96%
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- Adapt **expectations**
  - Banks et al. (2012): expected bequests tied to housing wealth

- Adapt **current behavior**
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  - Delay planned retirement age?
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Research question and contributions

• Research question:
  • What is the effect of an unanticipated wealth shock on pension expenditure goals?

• Contributions:
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Sneak peak at results

- Both pension annuities and expenditure goals declined
  
  - Groups for whom annuities declined (high income earners, home owners) also revised expenditure goals
  
  - Size of individual declines in annuities cannot explain the size of individual declines in expenditure goals
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Roadmap

1. Introduction
2. Empirical approach
3. Data
4. Results
5. Conclusion
Empirical strategy

1. Overall changes
   - Aim: show how wealth and consumption floors changed
   - Problem: incomplete data linkage and selective non-response in 2008
   - Solution:
     - Perform SUR on consumption floors and annuities in both years
     - Use estimates to simulate consumption floors and annuities

2. Changes at group level
   - Aim: investigate whether groups that were hit also revised goals
   - How: compare differences in SUR estimates for 2014 and 2008 for annuities and consumption floors

3. Individual-level longitudinal changes
   - Aim: differentiate between effect of individual wealth decline or overall worsening of expectations
   - How: fixed effects on overlapping sample
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Combining survey data with administrative records

- **Survey data**: LISS panel (CentER Data)
  - Representative for Dutch population
  - Pension goals elicited in 2008 and 2014
  - Information on non-taxed private pension entitlements
  - Background variables: employment, marital status, age etc.

- **Administrative data** (Statistics Netherlands)
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Survey question:
What is the minimal level of monthly spending that you would never want to fall below during retirement, at all costs? Please think of all your expenditures, such as food, clothing, housing, insurance, etc. (Binswanger & Schunk, 2012)

- 2008 IQR: 56%-90% of current income (De Bresser & Knoef, 2015)
- People find the question difficult, but give consistent answers
  - Young vs. old
  - Those who find it difficult vs. those who do not
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## Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>year</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>p25</th>
<th>Mdn</th>
<th>p75</th>
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<tr>
<td><strong>a. Self-assessed minimum retirement expenditures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Minimum monthly expenditures</td>
<td>2008</td>
<td>1,396</td>
<td>1,744</td>
<td>733</td>
<td>1,218</td>
<td>1,625</td>
<td>2,031</td>
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<tr>
<td></td>
<td>2014</td>
<td>2,755</td>
<td>1,495</td>
<td>570</td>
<td>1,095</td>
<td>1,460</td>
<td>1,825</td>
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<tr>
<td>Min. exp./current income (%)</td>
<td>2008</td>
<td>1,396</td>
<td>76</td>
<td>28</td>
<td>57</td>
<td>75</td>
<td>91</td>
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<tr>
<td></td>
<td>2014</td>
<td>2,717</td>
<td>67</td>
<td>29</td>
<td>47</td>
<td>63</td>
<td>80</td>
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<tr>
<td><strong>b. Annuities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pensions</td>
<td>2008</td>
<td>900</td>
<td>2,163</td>
<td>728</td>
<td>1,649</td>
<td>2,122</td>
<td>2,551</td>
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<tr>
<td></td>
<td>2014</td>
<td>3,646</td>
<td>1,747</td>
<td>748</td>
<td>1,343</td>
<td>1,675</td>
<td>2,072</td>
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<tr>
<td>Pensions + wealth</td>
<td>2008</td>
<td>890</td>
<td>2,393</td>
<td>955</td>
<td>1,795</td>
<td>2,262</td>
<td>2,790</td>
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<tr>
<td></td>
<td>2014</td>
<td>3,429</td>
<td>2,062</td>
<td>1,437</td>
<td>1,473</td>
<td>1,847</td>
<td>2,357</td>
</tr>
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<td>Pensions + wealth + housing</td>
<td>2008</td>
<td>890</td>
<td>3,267</td>
<td>1,630</td>
<td>2,263</td>
<td>3,119</td>
<td>3,924</td>
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<td>2014</td>
<td>3,429</td>
<td>2,740</td>
<td>1,936</td>
<td>1,703</td>
<td>2,423</td>
<td>3,207</td>
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Amounts are equivalized to a one-person household and denoted in 2014 euros.
Results 1: overall changes

Figure: Fraction of population with annuity < consumption floor
Results 2: changes at group level

- Log(HH inc.)
- Log(pers. inc.)
- Homeowner
- Single
- Female*single
- Divorced
- Female*divorced
- Widowed
- Never married

Annuities

Consumption floors

- Pensions
- All wealth
- Cons. floor men
- Cons. floor women
Results 2: changes at group level (cntd.)

Annuities

Consumption floors

- Secondary
- Higher secondary
- Vocational
- Higher vocational
- University

- Pensions
- All wealth
- Cons. floor men
- Cons. floor women
Results 2: changes at group level (cntd.)

- 1 salary worker
- All salary workers
- 1 in family business
- All in family business
- 1 self-employed
- All self-employed
- 1 Retired
- All retired
- 1 Disabled
- All disabled
- Homekeeper
- Other

- Annuities
- Consumption floors

- Pensions  ● All wealth  ■ Cons. floor men  □ Cons. floor women
### Results 3: individual-level longitudinal changes

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- **Other controls**: No, Yes, Yes
- **Within R-squared**: 0.08, 0.24, 0.30
- **number HHs**: 1,295, 1,278, 1,278
- **n (individuals)**: 1,552, 1,531, 1,531
- **N (total obs.)**: 1,727, 1,703, 1,703

***significant at 1%
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- Both pension annuities and pension expenditure goals declined
- Groups for whom annuities declined are groups for whom expenditure goals dropped
  - High income earners
  - Home owners
- Individual declines in annuities do not explain individual declines in expenditure goals
- Did people mostly react on gloomy reports leading to lower expectation about the future?
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Work in progress

- How can we get most out of the data, given the small amount of overlap in waves?
- Sensitivity analysis including variable describing income expectations
### Error correlations

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<td>Min exp. men 2008</td>
<td>0.207***</td>
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<tr>
<td>Min exp. women 2008</td>
<td>0.222***</td>
<td>0.479***</td>
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<td>Selection (annuity 2008)</td>
<td>0.165</td>
<td>-0.036</td>
<td>-0.071</td>
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<tr>
<td>Annuity 2014</td>
<td>0.598***</td>
<td>0.059</td>
<td>0.075</td>
<td>0.205***</td>
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<td>Min exp. men 2014</td>
<td>0.160***</td>
<td>0.359***</td>
<td>0.020</td>
<td>0.111*</td>
<td>0.155***</td>
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<tr>
<td>Min exp. women 2014</td>
<td>0.115**</td>
<td>0.202**</td>
<td>0.366***</td>
<td>0.099</td>
<td>0.151***</td>
<td>0.506***</td>
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*significant at 10%; **significant at 5%; ***significant at 1%