The effect of the financial crisis on older households in England

James Banks, Rowena Crawford, Thomas F Crossley and Carl Emmerson

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15th Annual DNB Research Conference, 25-26th October 2012
Introduction

• Recent financial crisis associated with large asset prices falls
• In the UK in 2008–09
  – FTSE All-Share Index fell by one-third
  – Nationwide House Price Index fell by one-fifth
• Will have caused substantial, largely unanticipated, drops in household wealth

• Aims of this paper:
  – Document the scale and distribution of falls in wealth
  – Investigate the impact of wealth shocks on consumption and expectations
Data: English Longitudinal Study of Ageing (ELSA)

- Representative of household population aged 50 and over in England
- Biennial panel: [2002/03], [2004/05], [2006/07], [2008/09], [2010/11]
- Information on financial wealth, debt and housing in every wave
  - Detailed information on the amount held in different asset types
- Full pension details in every wave
  - Sufficient to reasonably estimate pension income/wealth
- Information on some components of expenditure in every wave
  - Food consumed in the home, food consumed out of the home, clothes, household fuel
- Quantitative measures of expectations of the future
Estimating pension wealth

• Pension income:
  – pensions in payment (private and state): use self-reported income
  – current DB: use self-reported pension tenure, salary and scheme rules
  – past DB: use self-reported pension tenure, impute final salary under assumption that earnings relative to median for sex/date-of-birth/education cohort constant over time, apply typical scheme rules dependent on sector of employment
  – current and past DC: take self-reported accrued fund value, accrue at 2% real rate of return to SPA, apply market annuity rates
  – state pensions: take self-reported employment, earnings history calculated as for past DB, and apply state pension rules

• Pension wealth:
  – discounted PDV of these income streams to sex-specific life expectancy (plus any survivor benefits)
Timing of the ELSA surveys (FTSE)

FTSE all share index (April 2006 = 100)

- ELSA wave 3 fieldwork
- ELSA wave 4 fieldwork

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Timing of the ELSA surveys (house prices)

UK house price index (April 2006 = 100)

- ELSA wave 3 fieldwork
- ELSA wave 4 fieldwork
Calculating predicted wealth changes

• Exposure of wealth to financial crisis measured using pre-crisis (wave 3) holdings of different types of assets
• Predicted losses (or gains) computed using pre-crisis wealth holdings and change in asset price indices between month of interview in wave 3 and wave 4
## Classification of asset holdings

<table>
<thead>
<tr>
<th>Categories of assets</th>
<th>Assumed asset price change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FTSE exposed assets</strong></td>
<td></td>
</tr>
<tr>
<td>Risky financial assets: <em>shares, Personal Equity Plans, unit and investment trusts, investment Individual Savings Accounts (ISAs), endowment policies, insurance products</em></td>
<td>FTSE all-share index</td>
</tr>
<tr>
<td>DC pensions (unannuitised)</td>
<td>FTSE DCisions index</td>
</tr>
<tr>
<td><strong>Property assets</strong></td>
<td></td>
</tr>
<tr>
<td>Owner occupied main home</td>
<td>Regional house price index</td>
</tr>
<tr>
<td>Other property</td>
<td>England average h.p index</td>
</tr>
<tr>
<td><strong>Safe assets</strong></td>
<td></td>
</tr>
<tr>
<td>Current and saving accounts, cash ISAs, Tax Exempt Special Savings Accounts (TESSAs), physical assets, DB pensions, state pensions, pensions in receipt, mortgage and non-mortgage debt</td>
<td>No change</td>
</tr>
</tbody>
</table>
Mean portfolio composition in Wave 3 (2006/07)

Proportion of total gross wealth held in:

- Risky financial assets: 6.6%
- DC pension funds: 3.8%
- Housing wealth: 40.3%
- State pension wealth: 19.5%
- Private pension wealth: 19.5%
- Other 'safe' wealth: 10.3%
Distribution of index changes
ELSA wave 3 to wave 4 (2006–07 to 2008–09)

% change in index value between wave 3 and wave 4 interview

Density

-50 -40 -30 -20 -10 0 10 20 30

FTSE all-share index
Regional house price index
FTSE DCisions index
Distribution of simulated wealth changes
ELSA wave 3 to wave 4 (2006–07 to 2008–09)

Simulated % change in total gross household wealth,
between wave 3 and wave 4 interview

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Predicted wealth changes

- Median simulated wealth change: loss of 1% of gross wealth
- 6% of individuals: simulated loss > 10% of gross wealth
- 29% of individuals: simulated increase in gross wealth
Predicted “peak-to-trough” wealth changes

- Simulating wealth change between ELSA wave 3 and wave 4 potentially understates the wealth shock from the crisis
  - Many wave 4 interviews occurred before/during the largest movements in asset prices
- Also calculate simulated wealth change between peak and trough of FTSE all share index (May 2007 to March 2009)
  - Median simulated peak-to-trough wealth change: loss of 8%
  - 38% individuals: simulated peak-to-trough loss > 10%
  - (No individuals have a simulated peak-to-trough increase in wealth)
- Total peak-to-trough wealth losses on average greater (absolute and proportionate terms) for those with higher levels of wealth
  - All: mean loss 10.3% (£60,000)
  - Poorest quintile: mean loss 4.6% (£9,000)
  - Wealthiest quintile: mean loss 12.9% (£162,000)
Reported wealth changes

• Reported wealth change
  = reported post-crisis (wave 4) wealth – pre-crisis (wave 3) wealth

• Reported wealth changes will differ from simulated wealth changes
  – Anticipated active (dis-) saving
  – Behavioural responses to financial crisis
  – Measurement error
    • Return heterogeneity
    • Imputation and response error
Comparing reported and simulated changes: total wealth
ELSA wave 3 to wave 4 (2006–07 to 2008–09)

% change in total gross household wealth, between wave 3 and wave 4 interview

Cumulative percentage of households

-20%  -15%  -10%  -5%   0%   5%   10%

Simulated change
Reported change
Inter-temporal budget constraint

Wealth + discounted future earnings = Current consumption + discounted future consumption + discounted bequest

Thus, possible responses to wealth shocks:

• Consume less now
• Consume less in the future
• Leave a smaller bequest
• Work more
Expenditure

• We have data on 4 areas of household spending:
  – amount spent on food consumed in the home
  – amount spent on food consumed out of the home
  – amount spent on fuel in the home
  – amount spent on clothes

• We also have total spending on these 4 areas
  – accounts for about 30% of non-housing spending for over 50 households pre-crisis
Empirical specification (expenditure)

- **Basic specification:**
  \[ \Delta \text{Expenditure}_{w3w4} = \alpha + \beta \Delta \text{Wealth}_{w3w4} + \gamma \% \Delta \text{Price}_{w3w4} + \delta Z + \varepsilon \]
  - $\Delta \text{Expenditure}_{w3w4}$ is change in real expenditure between 2006–07 and 2008–09.
  - $\Delta \text{Wealth}_{w3w4}$ is change in real wealth between 2006–07 and 2008–09.
  - $\% \Delta \text{Price}_{w3w4}$ is percent change in specific price index between 2006–07 and 2008–09.
  - $Z$ is individual and household characteristics: age (10 year bands), education, change in number of people in the household, change in number of earners in the household.

- $\Delta \text{Wealth}_{w3w4}$ is potentially endogeneous
  - Instrument for the actual change in wealth using predicted wealth changes.
  - (use wave 2 asset holdings to help deal with bias from measurement error)

- Also test for
  - Separate effect of changes in different components of wealth.
  - Different effects by whether below or above age 70.
## Wealth effects on consumption

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<thead>
<tr>
<th>Change in:</th>
<th>Food in, real £/yr</th>
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<tr>
<td>Total net wealth (£100s), Real</td>
<td>0.102</td>
<td>0.055</td>
<td>-0.090*</td>
<td>0.734*</td>
<td>0.703***</td>
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<td>(0.052)</td>
<td>(0.050)</td>
<td>(0.422)</td>
<td>(0.265)</td>
</tr>
<tr>
<td>price of (...) /RPI</td>
<td>35.129***</td>
<td>-16.455***</td>
<td>3.567*</td>
<td>-1.107</td>
<td>21.894</td>
</tr>
<tr>
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<td>(7.785)</td>
<td>(5.691)</td>
<td>(1.875)</td>
<td>(19.773)</td>
<td>(16.882)</td>
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Sample size: 5,606  5,679  5,155  5,674  5,036
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<td>(1.875)</td>
<td>(19.773)</td>
<td>(16.882)</td>
</tr>
<tr>
<td>Net housing wealth (£100s), Real</td>
<td>0.029</td>
<td>0.001</td>
<td>-0.025</td>
<td>0.218</td>
<td>0.125</td>
</tr>
<tr>
<td></td>
<td>(0.049)</td>
<td>(0.021)</td>
<td>(0.023)</td>
<td>(0.206)</td>
<td>(0.123)</td>
</tr>
<tr>
<td>Pension wealth (£100s), Real</td>
<td>0.314</td>
<td>0.153</td>
<td>-0.082</td>
<td>0.536</td>
<td>1.883</td>
</tr>
<tr>
<td></td>
<td>(0.304)</td>
<td>(0.157)</td>
<td>(0.145)</td>
<td>(0.626)</td>
<td>(1.149)</td>
</tr>
<tr>
<td>Net non-pension non-housing wealth (£100s), Real</td>
<td>0.031</td>
<td>-0.013</td>
<td>-0.089</td>
<td>1.174</td>
<td>0.504</td>
</tr>
<tr>
<td></td>
<td>(0.216)</td>
<td>(0.095)</td>
<td>(0.092)</td>
<td>(1.075)</td>
<td>(0.622)</td>
</tr>
<tr>
<td>price of (...) /RPI</td>
<td>32.011***</td>
<td>-19.245***</td>
<td>4.047**</td>
<td>-4.532</td>
<td>-0.329</td>
</tr>
<tr>
<td></td>
<td>(9.024)</td>
<td>(6.845)</td>
<td>(1.858)</td>
<td>(21.885)</td>
<td>(23.473)</td>
</tr>
<tr>
<td>Sample size</td>
<td>5,606</td>
<td>5,679</td>
<td>5,155</td>
<td>5,674</td>
<td>5,036</td>
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</table>
Empirical specification (expectations)

- Consider 2 questions:
  - “[Including property and other valuables that you might own] what are the chances that you will leave an inheritance totalling £150,000 or more?”
    - 2006/7 median expectation = 80%
  - “What are the chances that at some point in the future you will not have enough financial resources to meet your needs?”
    - 2006/7 median expectation = 30%

- Use broadly same specification as for consumption

\[
\Delta \text{Expectation}_{w3w4} = \alpha + \beta \Delta \text{Wealth}_{w3w4} + \varepsilon
\]

\(\Delta \text{Expectation}_{w3w4}\) is change in reported % chance between 2006–07 and 2008–09

\(\Delta \text{Wealth}_{w3w4}\) is change in [nominal/real] wealth between 2006–07 and 2008–09

(Test sensitivity to inclusion of Z vector – makes little difference)
Changes in expectations

... leaving bequest >£150k
... having inadequate resources

Percentage point change between wave 3 and wave 4 in expectation of

-100 to -49 | -50 to -24 | -25 to -1 | No change | 1 to 25 | 26 to 50 | 51 to 100

Percentage of individuals

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Wealth effects on expectations - bequests

- Effect of changes in wealth on the expected chance of leaving a bequest of greater than £150,000

<table>
<thead>
<tr>
<th>Nominal change in (£10,000s):</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total net wealth</td>
<td>0.439**</td>
</tr>
<tr>
<td></td>
<td>(0.205)</td>
</tr>
<tr>
<td>Net housing wealth</td>
<td>0.226***</td>
</tr>
<tr>
<td></td>
<td>(0.075)</td>
</tr>
<tr>
<td>Pension wealth</td>
<td>0.931</td>
</tr>
<tr>
<td></td>
<td>(0.501)</td>
</tr>
<tr>
<td>Net non-pension non-housing wealth</td>
<td>0.109</td>
</tr>
<tr>
<td></td>
<td>(0.245)</td>
</tr>
<tr>
<td>Sample size</td>
<td>4,511</td>
</tr>
</tbody>
</table>
### Wealth effects on expectations - bequests

- **Effect of changes in wealth on the expected chance of leaving a bequest of greater than £150,000**

<table>
<thead>
<tr>
<th>Nominal change in (£10,000s):</th>
<th>All</th>
<th>Aged 50-69</th>
<th>Aged 70+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total net wealth</td>
<td>0.439**</td>
<td>0.296</td>
<td>0.780*</td>
</tr>
<tr>
<td></td>
<td>(0.205)</td>
<td>(0.192)</td>
<td>(0.456)</td>
</tr>
<tr>
<td>Net housing wealth</td>
<td>0.226***</td>
<td>0.143*</td>
<td>0.387**</td>
</tr>
<tr>
<td></td>
<td>(0.075)</td>
<td>(0.078)</td>
<td>(0.158)</td>
</tr>
<tr>
<td>Pension wealth</td>
<td>0.931</td>
<td>0.754*</td>
<td>-0.757</td>
</tr>
<tr>
<td></td>
<td>(0.501)</td>
<td>(0.455)</td>
<td>(1.480)</td>
</tr>
<tr>
<td>Net non-pension non-housing wealth</td>
<td>0.109</td>
<td>-0.109</td>
<td>0.352</td>
</tr>
<tr>
<td></td>
<td>(0.245)</td>
<td>(0.307)</td>
<td>(0.424)</td>
</tr>
<tr>
<td>Sample size</td>
<td>4,511</td>
<td>2,982</td>
<td>1,529</td>
</tr>
</tbody>
</table>
**Wealth effects on expectations – future inadequacy**

- **Effect of changes in wealth on the expected chance of having inadequate resources at some point in the future**

<table>
<thead>
<tr>
<th>Real change in (£10,000s):</th>
<th>All</th>
<th>Aged 50-69</th>
<th>Aged 70+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total net wealth</td>
<td>-0.143</td>
<td>-0.046</td>
<td>-0.324</td>
</tr>
<tr>
<td></td>
<td>(0.152)</td>
<td>(0.142)</td>
<td>(0.466)</td>
</tr>
<tr>
<td>Net housing wealth</td>
<td>-0.016</td>
<td>0.047</td>
<td>-0.642</td>
</tr>
<tr>
<td></td>
<td>(0.067)</td>
<td>(0.093)</td>
<td>(1.949)</td>
</tr>
<tr>
<td>Pension wealth</td>
<td>-0.465</td>
<td>-0.514</td>
<td>-14.533</td>
</tr>
<tr>
<td></td>
<td>(0.463)</td>
<td>(0.402)</td>
<td>(59.09)</td>
</tr>
<tr>
<td>Net non-pension non-housing wealth</td>
<td>0.177</td>
<td>0.417</td>
<td>-1.502</td>
</tr>
<tr>
<td></td>
<td>(0.270)</td>
<td>(0.462)</td>
<td>(5.18)</td>
</tr>
<tr>
<td>Sample</td>
<td>5,569</td>
<td>3,515</td>
<td>2,054</td>
</tr>
</tbody>
</table>
Conclusions and future directions

Wealth losses:

- Individuals are simulated to have experienced significant wealth shocks due to the financial crisis and resulting asset price changes
- Wealth losses greater among those with higher wealth
  - Typically have greater proportion of wealth held in exposed assets

Responses:

- Results suggest a marginal propensity to consume out of wealth shocks towards the low end of the range suggested by theory and past literature
- Small effect of wealth shocks on probability of leaving a moderately large bequest - arising largely from housing wealth shocks
- No evidence of an effect on perceived ‘adequacy’ of future resources
Conclusions and future directions

Potential explanations for small effects:
- Marginal propensity to consume out of wealth shocks greater for other luxuries?
- Cut off for expected bequests of £150,000 not that relevant?
  - mean 2006/07 net housing wealth ~ £200,000. Mean peak-to-trough loss of housing wealth £33,000 and w3 to w4 losses smaller.
- Individuals believing the asset price shocks are not permanent (Christelis et al., 2011)?

Next work on:
- Health and wellbeing effects
- Incorporating wave 5 to track through on-going economic slowdown
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