



What is the Impact of Foreclosures on Retirement Security?

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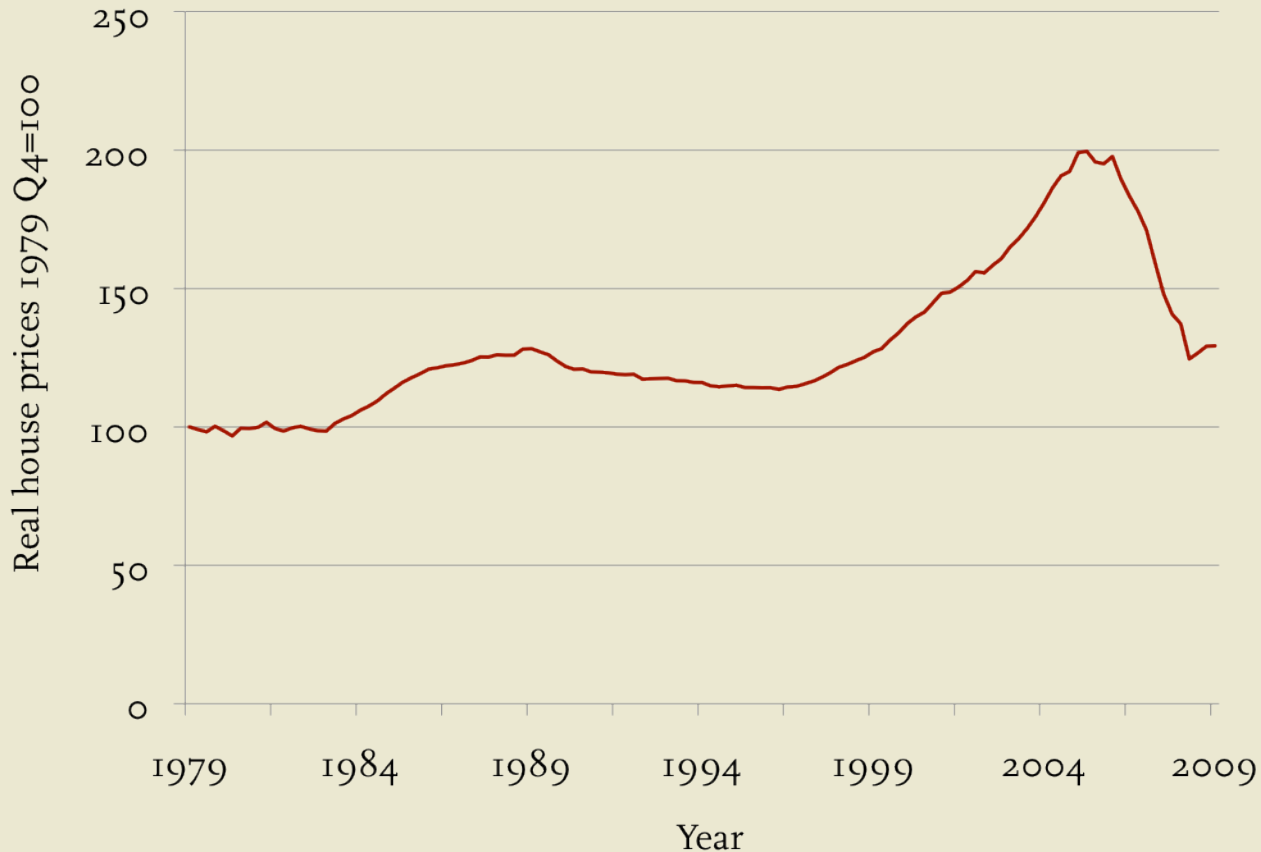
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12th Annual Joint Conference of the Retirement Research Consortium
Washington, D.C.
August 5-6, 2010

Unprecedented decline in real house prices

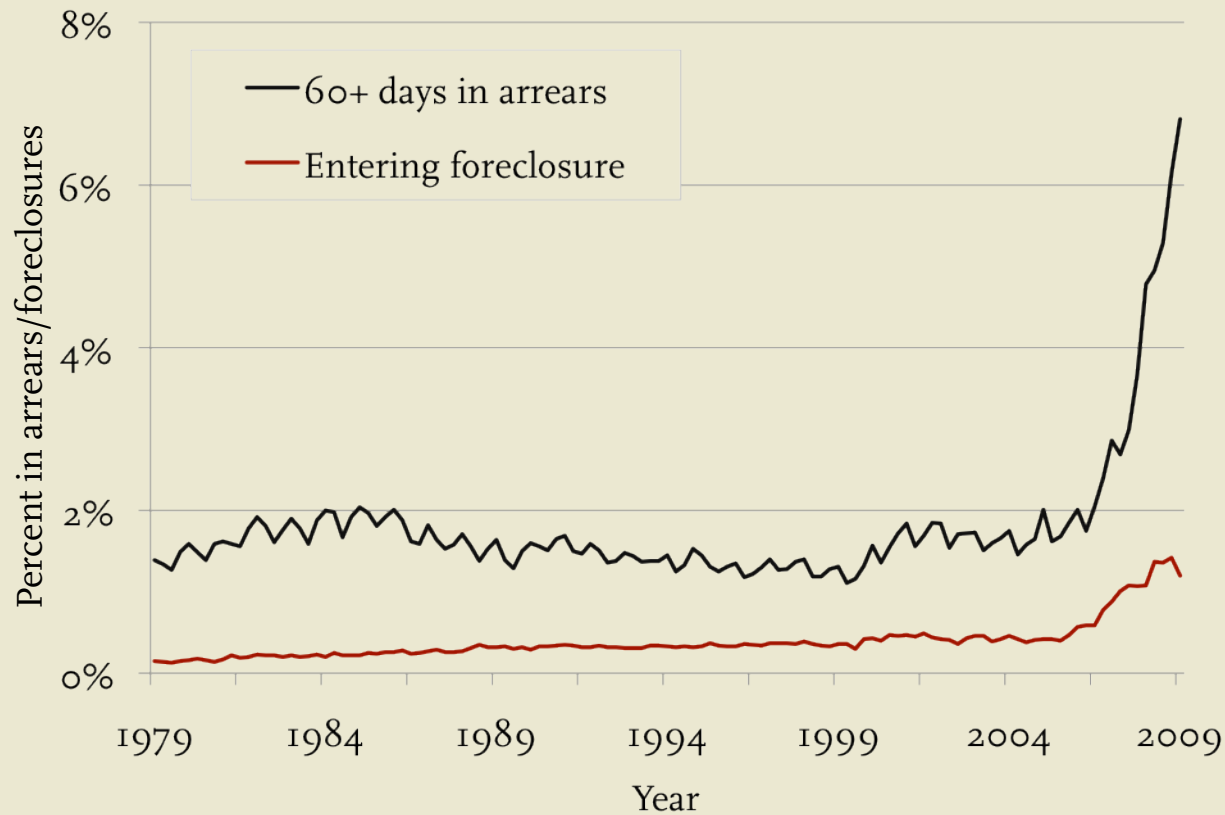
Real House Prices, Q4 1979 – Q1 2010



Source: Authors' calculations from the Board of Governors of the Federal Reserve System. July 2010. *Flow of Funds Account of the United States*. Washington, D.C.

Unprecedented increase in mortgage arrears and foreclosures

Percent of Loans 60+ Days in Arrears/Entered Foreclosures in Quarter, Q4 1979 – Q4 2009



Source: Mortgage Bankers Association. 2010. *National Delinquency Survey*. Washington, D.C.

Research questions

- How has the housing crisis affected balance sheets of households nearing retirement?
- How prevalent are arrears, foreclosures among older households?
- What socio-economic factors are associated with being at risk of arrears, foreclosure?
- What fraction of older households will experience arrears, foreclosure in next few years?
- How might housing distress of family members affect older households?

Data sources:

Multiple waves of HRS

Extra housing questions in 2008 HRS

Extra housing questions in 2009 PSID

How has the housing crisis affected household balance sheets?

Housing Wealth of Households Aged 51-56 in 1992, 1998, and 2004

| | 51-56 in 1992 | | 51-56 in 1998 | | 51-56 in 2004 | |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | All | With mortgage | All | With mortgage | All | With mortgage |
| Value of primary residence | 190,428 | 207,104 | 197,212 | 217,595 | 280,362 | 309,797 |
| Mortgage debt | 49,963 | 73,273 | 61,598 | 91,566 | 82,274 | 114,014 |
| Other secured loans | 9,372 | 13,745 | 5,613 | 8,344 | 9,469 | 13,122 |
| Housing equity | 131,093 | 120,087 | 130,001 | 117,685 | 188,619 | 182,661 |
| Unsecured loans | 6,271 | 6,993 | 7,256 | 8,548 | 6,496 | 7,583 |
| 2nd home mortgage | 4,524 | 5,741 | 3,698 | 4,569 | 6,047 | 8,017 |
| Total debt | 70,130 | 99,752 | 78,165 | 113,028 | 104,286 | 142,736 |
| Has credit card debt | 0.41 | 0.46 | 0.40 | 0.44 | 0.43 | 0.48 |
| Has home equity loan | 0.15 | 0.22 | 0.15 | 0.22 | 0.21 | 0.29 |
| Has mortgage debt | 0.63 | 0.92 | 0.62 | 0.92 | 0.66 | 0.91 |
| Mortgage to home value ratio | 0.26 | 0.39 | 0.30 | 0.45 | 0.32 | 0.44 |
| Number of observations | 4,358 | 2,960 | 2,453 | 1,613 | 2,484 | 1,794 |

Source: Authors' tabulations of University of Michigan. *Health and Retirement Study* (HRS). Ann Arbor, MI.

How has the housing crisis affected household balance sheets? (cont'd)

Housing Wealth of Households Aged 57-62 in 1992, 1998, 2004, and 2010

| | 57-62 in 1992 | | 57-62 in 1998 | | 57-62 in 2004 | | 57-62 in 2010 | |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | All | With mortgage | All | With mortgage | All | With mortgage | All | With mortgage |
| Value of primary residence | 175,617 | 200,187 | 220,786 | 263,530 | 268,417 | 298,535 | 213,407 | 235,666 |
| Mortgage debt | 29,823 | 56,088 | 47,117 | 85,120 | 61,084 | 97,956 | 82,953 | 121,595 |
| Other secured loans | 5,661 | 10,646 | 4,773 | 8,624 | 7,017 | 11,253 | 8,644 | 12,671 |
| Housing equity | 140,133 | 133,452 | 168,895 | 169,787 | 200,315 | 189,326 | 128,810 | 101,400 |
| Unsecured loans | 3,502 | 5,033 | 5,257 | 7,113 | 5,282 | 6,448 | 8,395 | 9,125 |
| 2nd home mortgage | 3,616 | 4,148 | 4,093 | 6,183 | 4,058 | 5,365 | 6,090 | 8,149 |
| Total debt | 42,602 | 75,916 | 61,240 | 107,040 | 77,442 | 121,022 | 106,082 | 151,540 |
| Has credit card debt | 0.35 | 0.43 | 0.32 | 0.39 | 0.37 | 0.44 | 0.44 | 0.50 |
| Has home equity loan | 0.13 | 0.24 | 0.14 | 0.25 | 0.17 | 0.27 | 0.21 | 0.30 |
| Has mortgage debt | 0.47 | 0.88 | 0.48 | 0.87 | 0.55 | 0.88 | 0.61 | 0.89 |
| Mortgage to home value ratio | 0.17 | 0.32 | 0.22 | 0.39 | 0.26 | 0.42 | 0.42 | 0.57 |
| Number of observations | 3,534 | 1,900 | 3,886 | 2,138 | 2,534 | 1,506 | 2,394 | 1,605 |

Source: Authors' tabulations of HRS data.

How has the housing crisis affected household balance sheets? (cont'd)

- Housing equity back to 1992 levels
- Modest increase in percent of households with mortgages
- But those with mortgages are carrying larger balances into retirement

How prevalent are arrears and foreclosures?

Among all households

- 4.3% in arrears, 3.3% in foreclosures (Mortgage Bankers Association, 2009)
VS.
- 3.1% in arrears, 0.9% in foreclosures (PSID, 2009)

Among older households

- 3.4% in arrears, 1.1% in foreclosures (HRS, 2008)
VS.
- 2.3% in arrears, 0.9% in foreclosures (PSID, 2009 for households with head aged 53+)

What socio-economic factors are associated with being at risk of arrears and foreclosure?

2006 Characteristics of Households with Mortgages in 2006 by Whether Facing Foreclosure in 2008

| | No arrears | | | Two or more months' arrears | | | |
|------------------------|------------|-----------------------------|--|-----------------------------|----------------|-------------|---------------------------|
| | All | Does not anticipate arrears | Arrears somewhat or very likely in next 6 months | All | No foreclosure | Foreclosure | Foreclosure and lost home |
| <i>Race/ethnicity</i> | | | | | | | |
| White | 0.83 | 0.84 | 0.65 | 0.55 | 0.55 | 0.56 | 0.73 |
| Black | 0.08 | 0.07 | 0.17 | 0.26 | 0.28 | 0.22 | 0.27 |
| Hispanic | 0.06 | 0.06 | 0.11 | 0.13 | 0.12 | 0.14 | 0 |
| Other | 0.03 | 0.03 | 0.07 | 0.06 | 0.06 | 0.08 | 0 |
| <i>Education</i> | | | | | | | |
| Less than high school | 0.11 | 0.07 | 0.17 | 0.18 | 0.17 | 0.20 | 0.11 |
| High school | 0.30 | 0.28 | 0.33 | 0.38 | 0.42 | 0.28 | 0.30 |
| Some college | 0.27 | 0.27 | 0.31 | 0.31 | 0.27 | 0.41 | 0.34 |
| College graduate | 0.33 | 0.38 | 0.18 | 0.13 | 0.14 | 0.12 | 0.25 |
| Number of observations | 2,749 | 1,918 | 120 | 98 | 68 | 30 | 14 |

Source: Authors' tabulations of HRS data.

What socio-economic factors are associated with being at risk of arrears and foreclosure? (cont'd)

2006 Characteristics of Households with Mortgages in 2006 by Whether Facing Foreclosures in 2008

| | No arrears | | | Two or more months' arrears | | | |
|------------------------|------------|-----------------------------|--|-----------------------------|----------------|-------------|---------------------------|
| | All | Does not anticipate arrears | Arrears somewhat or very likely in next 6 months | All | No foreclosure | Foreclosure | Foreclosure and lost home |
| Log of HH income, 2006 | 10.95 | 11.13 | 10.7 | 10.6 | 10.8 | 10.1 | 10.4 |
| Laid off, 2004-2008 | 0.11 | 0.10 | 0.24 | 0.20 | 0.21 | 0.15 | 0.19 |
| Working, 2006 | 0.55 | 0.63 | 0.61 | 0.59 | 0.60 | 0.58 | 0.68 |
| Married, 2006 | 0.69 | 0.73 | 0.79 | 0.61 | 0.67 | 0.44 | 0.29 |
| Age 60 or less, 2006 | 0.54 | 0.59 | 0.73 | 0.71 | – | 0.68 | 0.82 |
| Number of observations | 2,749 | 1,918 | 120 | 98 | 68 | 30 | 14 |

Source: Authors' tabulations of HRS data.

What socio-economic factors are associated with being at risk of arrears and foreclosure?

(cont'd)

2006 Characteristics of Households with Mortgages in 2006 by Whether Facing Foreclosure in 2008

| | No past arrears | | | Two or more months' arrears | | | |
|--|-----------------|-----------------------------|--|-----------------------------|----------------|-------------|---------------------------|
| | All | Does not anticipate arrears | Arrears somewhat or very likely in next 6 months | All | No foreclosure | Foreclosure | Foreclosure and lost home |
| Has health insurance 2006 | 0.96 | 0.97 | 0.91 | 0.94 | 0.96 | 0.89 | 0.76 |
| Household member in fair/poor health 2006 | 0.28 | 0.24 | 0.39 | 0.38 | 0.35 | 0.47 | 0.60 |
| HH report health change for worse between 2006-2008 | 0.33 | 0.30 | 0.42 | 0.37 | 0.38 | 0.35 | 0.61 |
| Health expenditures above 75th percentile in 2006 | 0.33 | 0.34 | 0.26 | 0.39 | 0.39 | 0.40 | 0.60 |
| Reports local housing market as good, very good, or excellent in 2008 | 0.42 | 0.44 | 0.27 | 0.14 | 0.16 | 0.08 | 0.04 |
| Percent of people in same MSA in 2008 rating local housing market as good, very good, or excellent | 0.39 | 0.40 | 0.36 | 0.34 | 0.35 | 0.31 | 0.35 |
| Loan to value ratio in 2006 | 0.34 | 0.39 | 0.50 | 0.62 | 0.65 | 0.51 | 0.60 |
| Number of observations | 2,749 | 1,918 | 120 | 98 | 68 | 30 | 14 |

Source: Authors' tabulations of HRS data.

What socio-economic factors are associated with being at risk of arrears and foreclosure?

(cont'd)

Probit Marginal Effects – Risk of Arrears or Foreclosures

| Independent variables | Marginal effect | Independent variables | Marginal effect |
|--------------------------|-----------------|---|-----------------|
| <i>Race/ethnicity</i> | | HH in fair/poor health in 2006 | 0.020 |
| Non Hispanic black | 0.146 *** | HH health change for worse between 2006-08 | 0.028 * |
| Hispanic | 0.049 ** | Laid-off between 2004-08 | 0.063 *** |
| Other | 0.114 ** | Log of household income in 2006 | -0.009 ** |
| <i>Education</i> | | Health expenditures in 2006 above the 75 th percentile | -0.008 |
| Less than high school | 0.009 | Mean assessment of local market by people in same MSA | -0.032 |
| Some college | -0.010 | Loan to value ratio in 2006 | 0.077 *** |
| College graduate | -0.044 ** | Married in 2006 | 0.015 |
| Age less than 60 in 2006 | 0.041 ** | | |
| Working in 2006 | -0.004 | | |
| Number of observations | 1,926 | | |
| Obs. P | 0.093 | | |

* Statistically significant at the 10 percent level; ** Statistically significant at the 5 percent level; *** Statistically significant at the 1 percent level.

Source: Authors' calculations.

Forecasting mortgage arrears of older households through 2012

- Model can be used to forecast future risk of mortgage arrears
 - Based on probit coefficients, combined with forecasts of house price changes and job loss
 - Risk of arrears or foreclosure will peak at 4.2 percent in 2010 for older households, then decline to 3.2 percent by 2012

Source: Authors' calculations.

How might housing distress of family members affect older households?

- 6.7% of HRS respondents report a family member fell behind on his mortgage payments.
- Of these, 42% report giving help.

Source: Authors' tabulations of HRS data.

How might housing distress of family members affect older households? (cont'd)

2006 Characteristics of Households by Whether Non-Resident Family Members in Mortgage Arrears

| | All | Family did not fall behind | Family fell behind | | |
|------------------------|--------|----------------------------|--------------------|----------------------|------------------------------|
| | | | All | Respondent gave help | Respondent did not give help |
| <i>Race/ethnicity</i> | | | | | |
| White | 0.82 | 0.82 | 0.77 | 0.81 | 0.74 |
| Black | 0.07 | 0.07 | 0.09 | 0.08 | 0.09 |
| Hispanic | 0.08 | 0.08 | 0.03 | 0.08 | 0.14 |
| Other | 0.03 | 0.03 | 0.11 | 0.03 | 0.03 |
| <i>Education</i> | | | | | |
| Less than high school | 0.16 | 0.16 | 0.18 | 0.13 | 0.22 |
| High school | 0.33 | 0.33 | 0.39 | 0.37 | 0.42 |
| Some college | 0.25 | 0.25 | 0.26 | 0.27 | 0.24 |
| College graduate | 0.26 | 0.27 | 0.17 | 0.23 | 0.12 |
| Married in 2006 | 0.72 | 0.72 | 0.74 | 0.79 | 0.70 |
| Age 60 or less in 2006 | 0.44 | 0.44 | 0.51 | 0.47 | 0.54 |
| Working in 2006 | 0.43 | 0.43 | 0.45 | 0.51 | 0.38 |
| Number of observations | 10,494 | 9,791 | 703 | 296 | 399 |

Source: Authors' tabulations of HRS data.

How might housing distress of family members affect older households? (cont'd)

2006 Characteristics of Households by Whether Non-Resident Family Members in Mortgage Arrears

| | All | Family did not fall behind | Family fell behind | | |
|-------------------------------|---------|----------------------------|--------------------|----------------------|------------------------------|
| | | | All | Respondent gave help | Respondent did not give help |
| Has children under age 18 | 0.07 | 0.07 | 0.10 | 0.12 | 0.09 |
| Value of primary residence | 271,533 | 275,375 | 216,626 | 229,021 | 208,395 |
| Total mortgage debt | 50,965 | 50,563 | 56,717 | 52,968 | 59,488 |
| Total HH income | 85,941 | 87,300 | 66,521 | 80,687 | 55,266 |
| Total debt | 66,591 | 66,134 | 73,123 | 72,071 | 73,747 |
| Net value of financial wealth | 195,082 | 203,171 | 79,495 | 84,315 | 75,120 |
| Housing equity | 214,584 | 218,802 | 154,322 | 169,313 | 144,197 |
| Number of observations | 10,494 | 9,791 | 703 | 296 | 399 |

Source: Authors' tabulations of HRS data.

How might housing distress of family members affect older households? (cont'd)

2006 Characteristics of Households by Whether Non-Resident Family Members in Mortgage Arrears

| | All | Family did not fall behind | Family fell behind | | |
|----------------------------------|---------|----------------------------|--------------------|----------------------|------------------------------|
| | | | All | Respondent gave help | Respondent did not give help |
| Social Security wealth at age 62 | 144,009 | 144,520 | 137,448 | 147,685 | 128,393 |
| DB wealth at age 62 | 280,231 | 281,173 | 267,286 | 327,994 | 201,091 |
| Has DB plan | 0.26 | 0.26 | 0.27 | 0.32 | 0.23 |
| Has DC plan | 0.49 | 0.48 | 0.55 | 0.60 | 0.51 |
| Has IRA | 0.58 | 0.59 | 0.51 | 0.60 | 0.44 |
| Number of observations | 10,494 | 9,791 | 703 | 296 | 399 |

Source: Authors' tabulations of HRS data.

How might housing distress of family members affect older households? (cont'd)

Probit Marginal Effects – Probability of Giving Help to Family Member
(Not Including the Respondent) who Fell Behind with Mortgage Payments

| Independent variables | Marginal effect | Independent variables | Marginal effect |
|-----------------------|-----------------|---|-----------------|
| <i>Race/ethnicity</i> | | Working in 2006 | 0.136** |
| Non-Hispanic black | -0.003 | Household member in fair/poor health 2006 | -0.004 |
| Hispanic | -0.057 | Has DB plan | 0.034 |
| Other | -0.085 | Has DC plan | -0.032 |
| <i>Education</i> | | Has IRA | 0.041 |
| Less than High school | -0.034 | Log of total HH income | 0.018 |
| Some college | 0.046 | Log of DB/DC/IRA wealth | 0.006 |
| College graduate | 0.148** | | |
| Married in 2006 | 0.063 | Number of observations | 621 |
| | | Obs.P | 0.449 |

** Statistically significant at the 5 percent level.

Source: Authors' calculations.

Conclusion

- Older households face relatively low risk of arrears, foreclosure.
- However, they are entering retirement with less housing equity, more mortgage debt.
- And there has been no offsetting increase in financial wealth – even before the recent market collapse.