25 min

Predicting the Labor Force Participation of the Older Population

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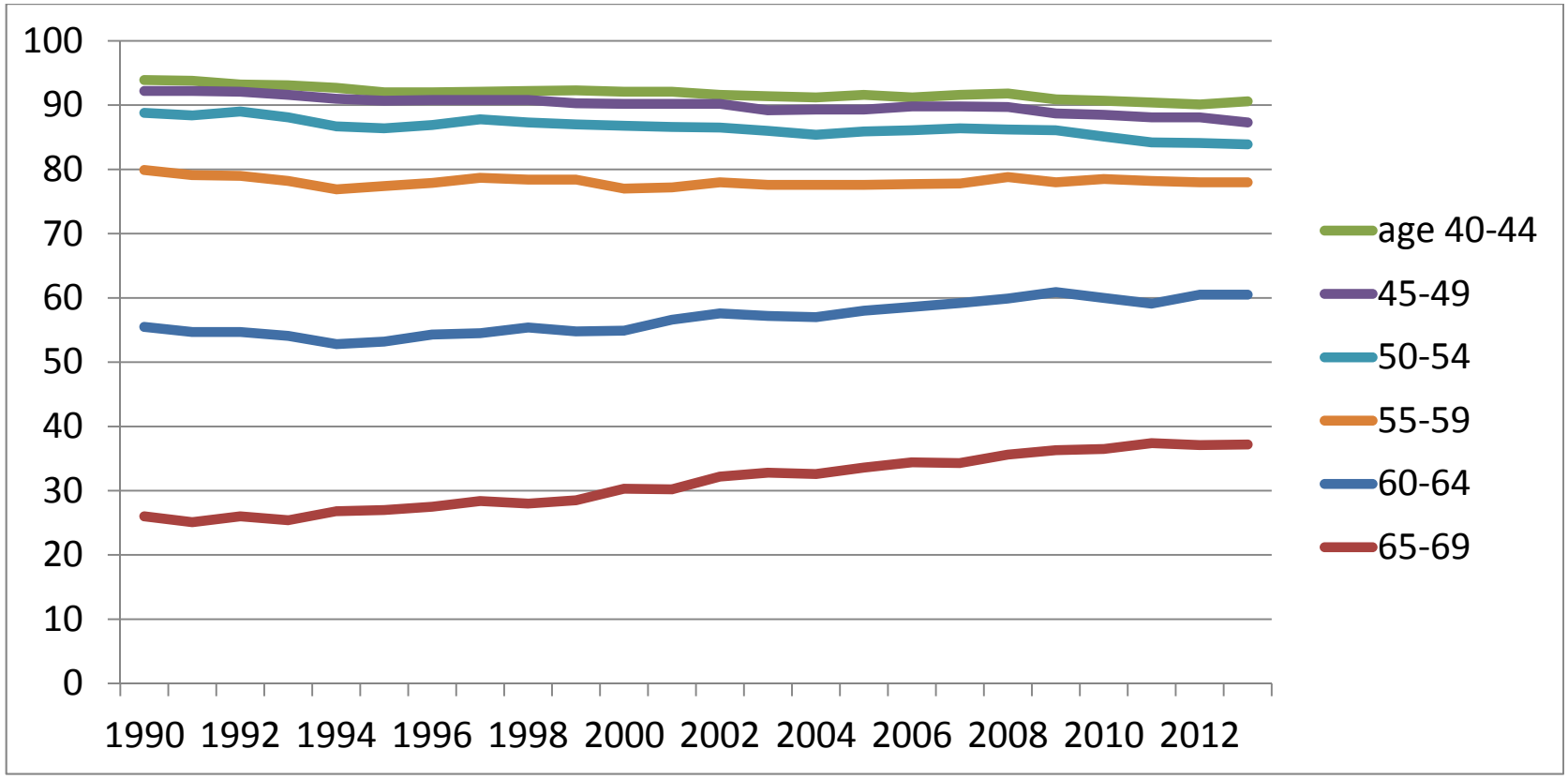
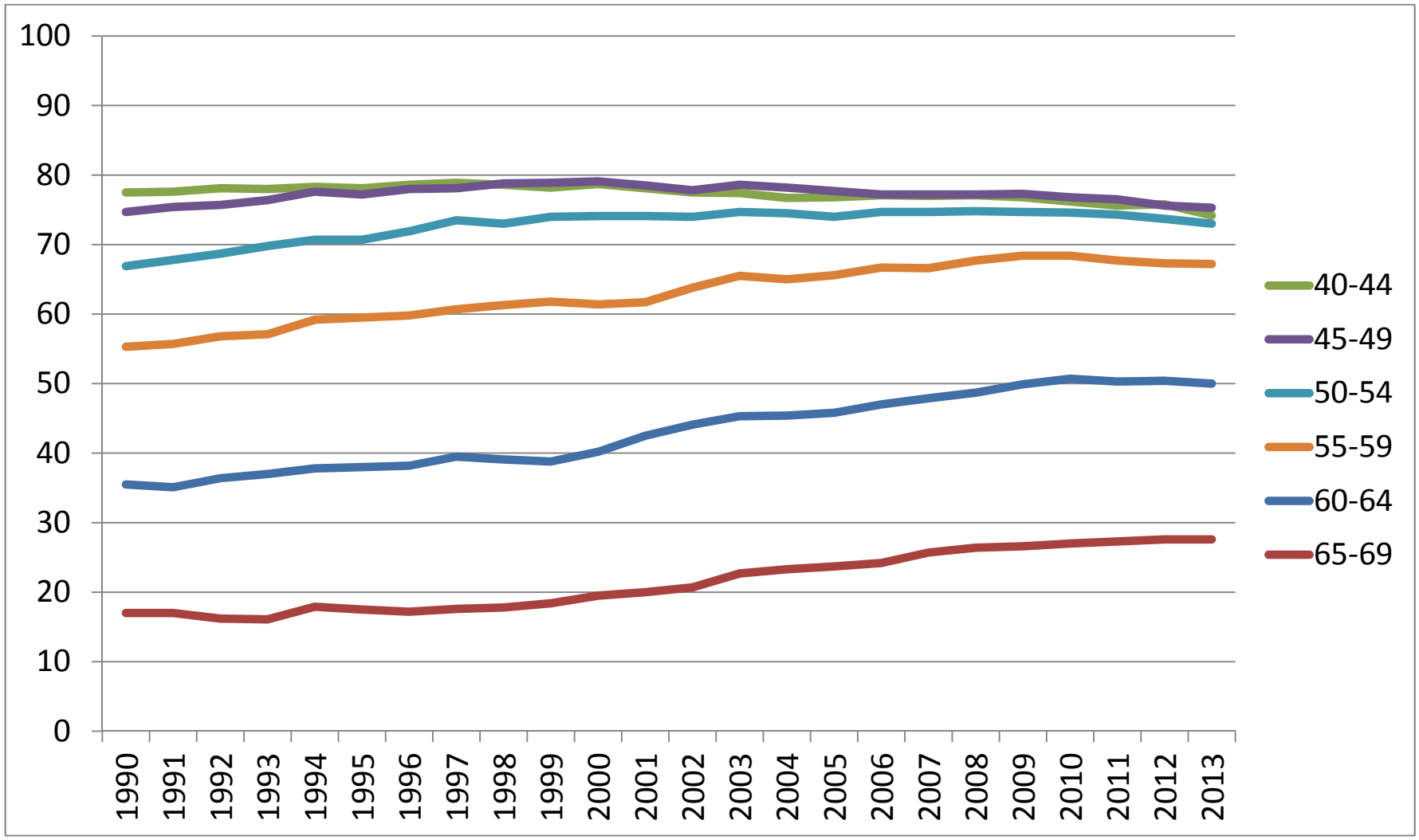
Beginning in early 1990s, labor force participation rates in U.S. increased at older ages…not at younger

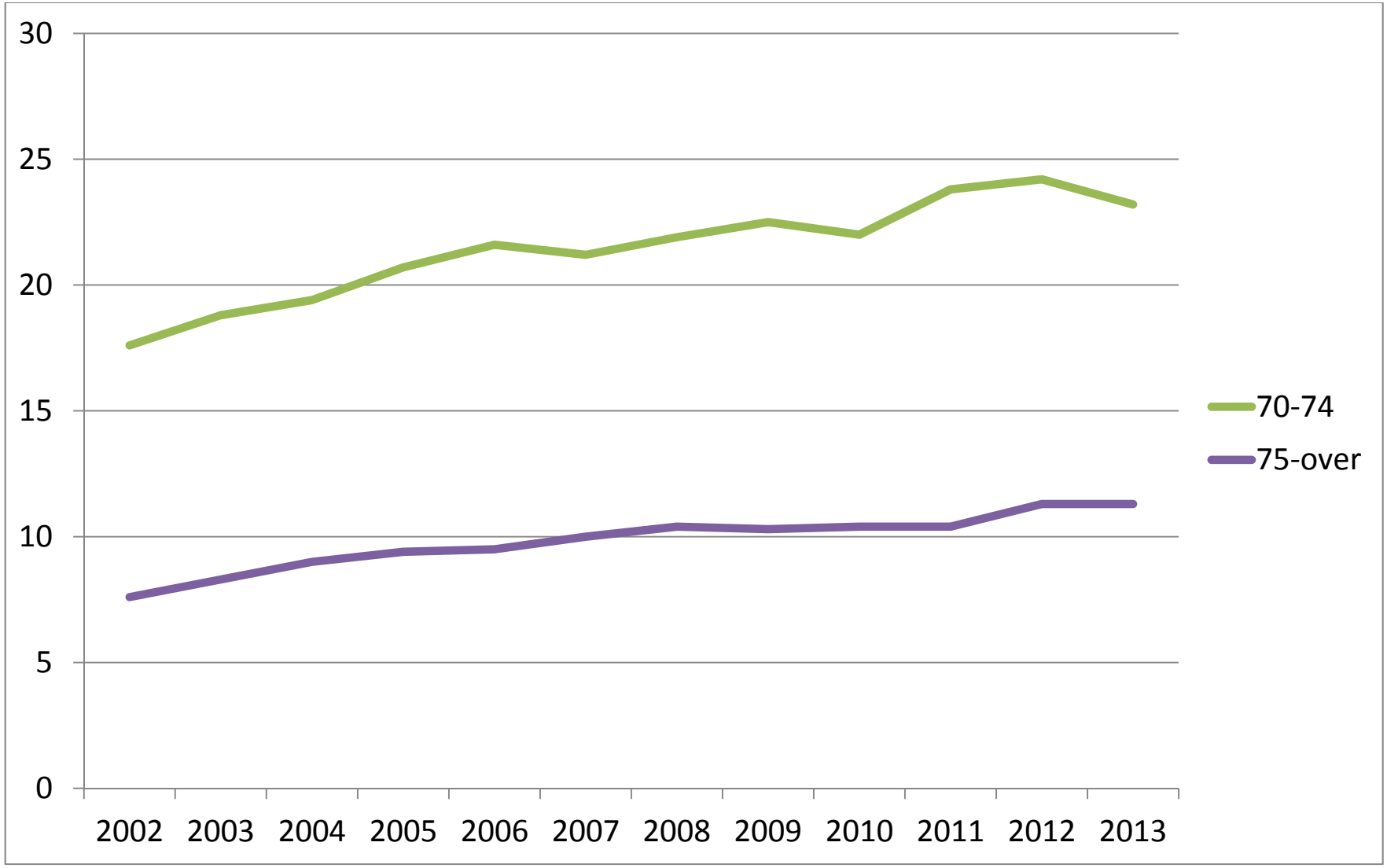
Labor force participation, men



Labor force participation, women



Labor force participation, men, 70-74 and 75+



Will these increases at older ages continue?

Any explanations for trends.

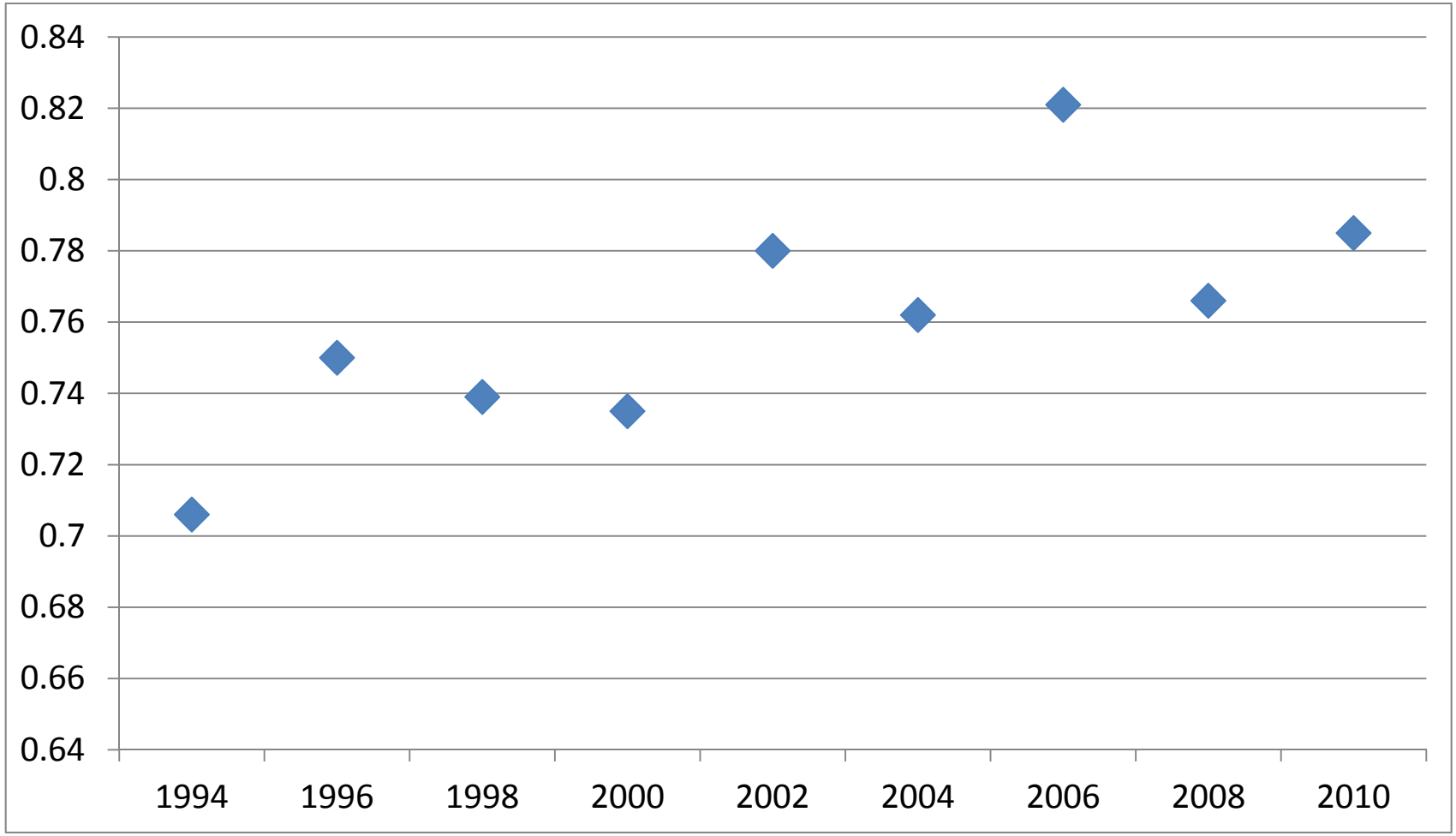
Use Health and Retirement Study (HRS) from 1992 to 2012

1. Trends in retirement hazards or labor force retention rates
    - Isolate retirement hazards from changes in incoming population
    - Ages most affected
2. Subjective probabilities of working
    - Trends
    - Predictive validity
3. Simulations of labor force participation based on two-year labor force transitions

4. Predictions of labor force participation based on two-year labor force transitions and subjective probabilities.

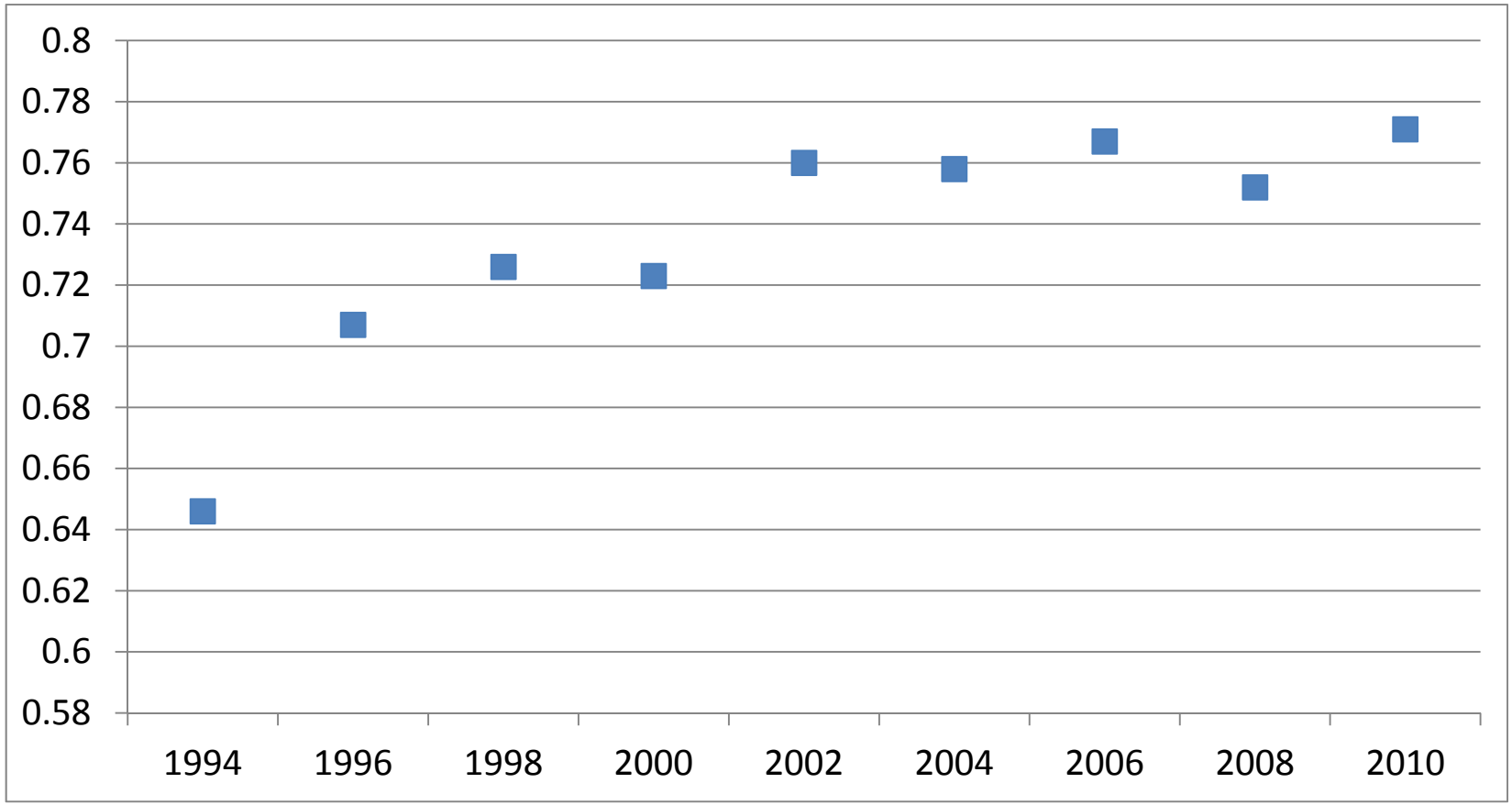
5. Some data to explain past changes

Figure 3. Two-year labor force retention rate, men, initial ages 60-64, panel data. $P(LF_{t+2} \mid LF_t)$



Slope = 0.002 or 0.04 over 20 years 1992 to 2010

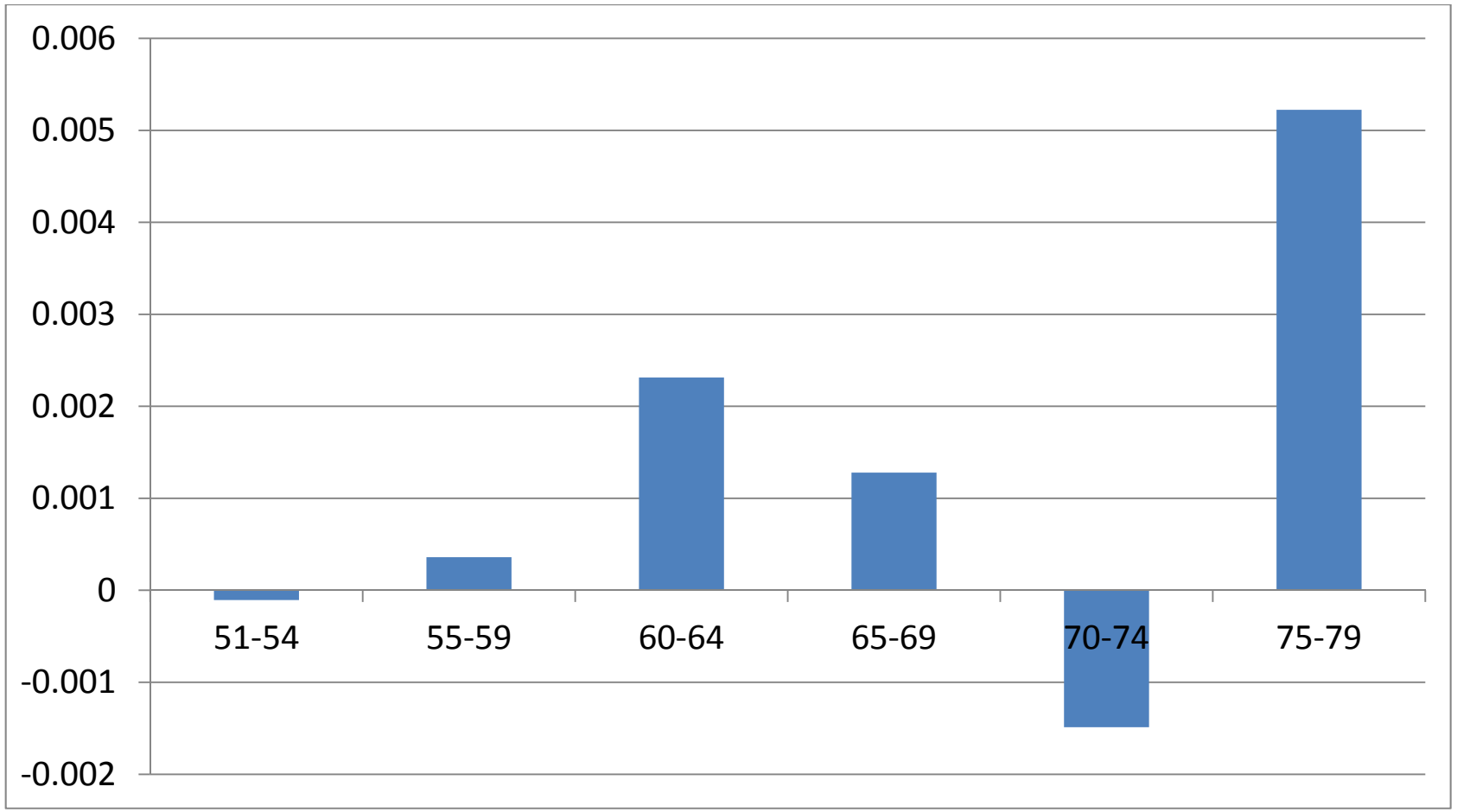
Two-year labor force retention rate, women, initial ages 60-64, panel data



Slope = 0.003 or 0.06 over 20 years

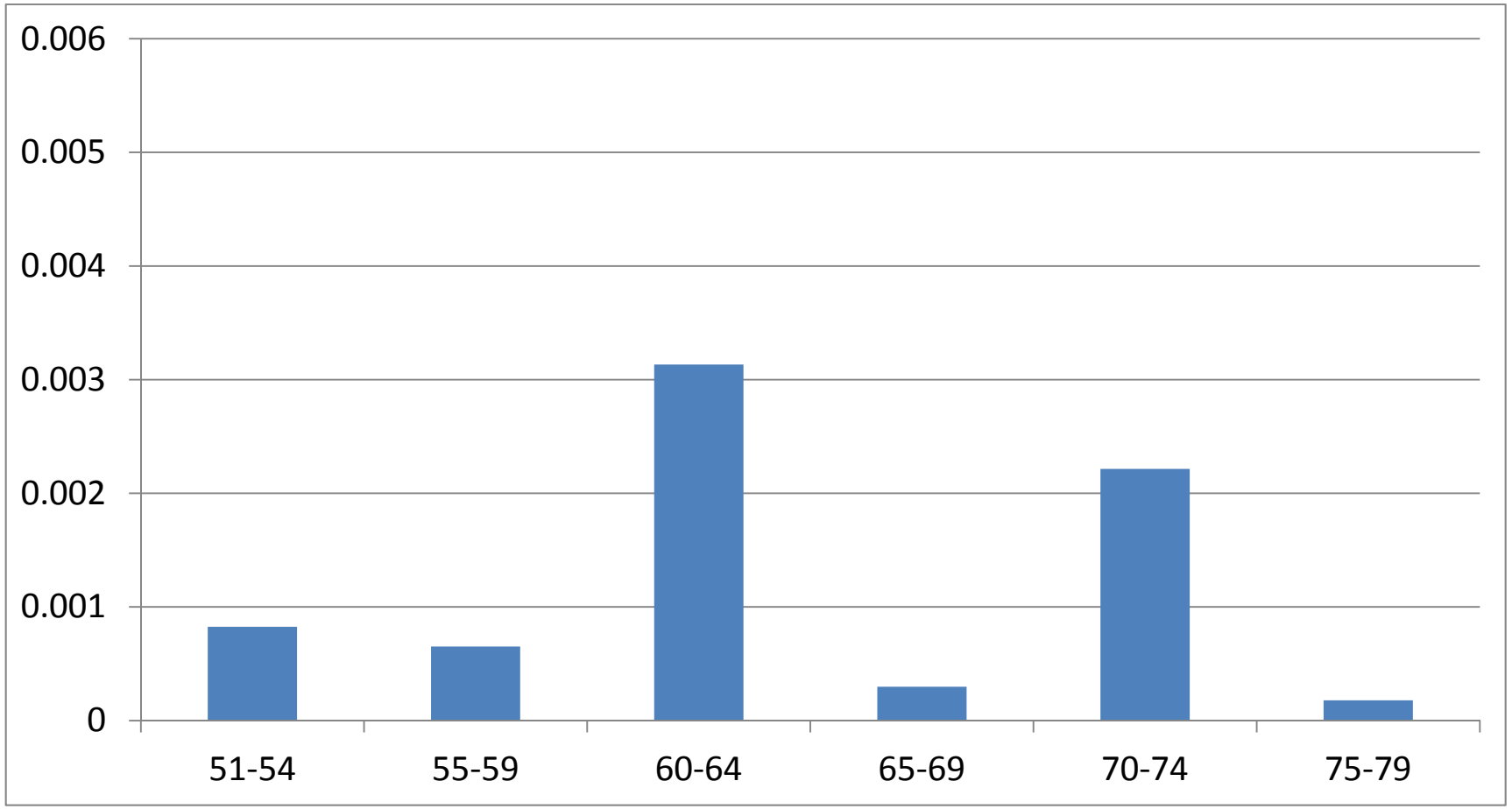
Summary of increases in labor force retention rates

Average annual increase in the two-year retention rate by initial age, men



No trend at younger ages.

Average annual increase in the two-year retention rate by initial age, women

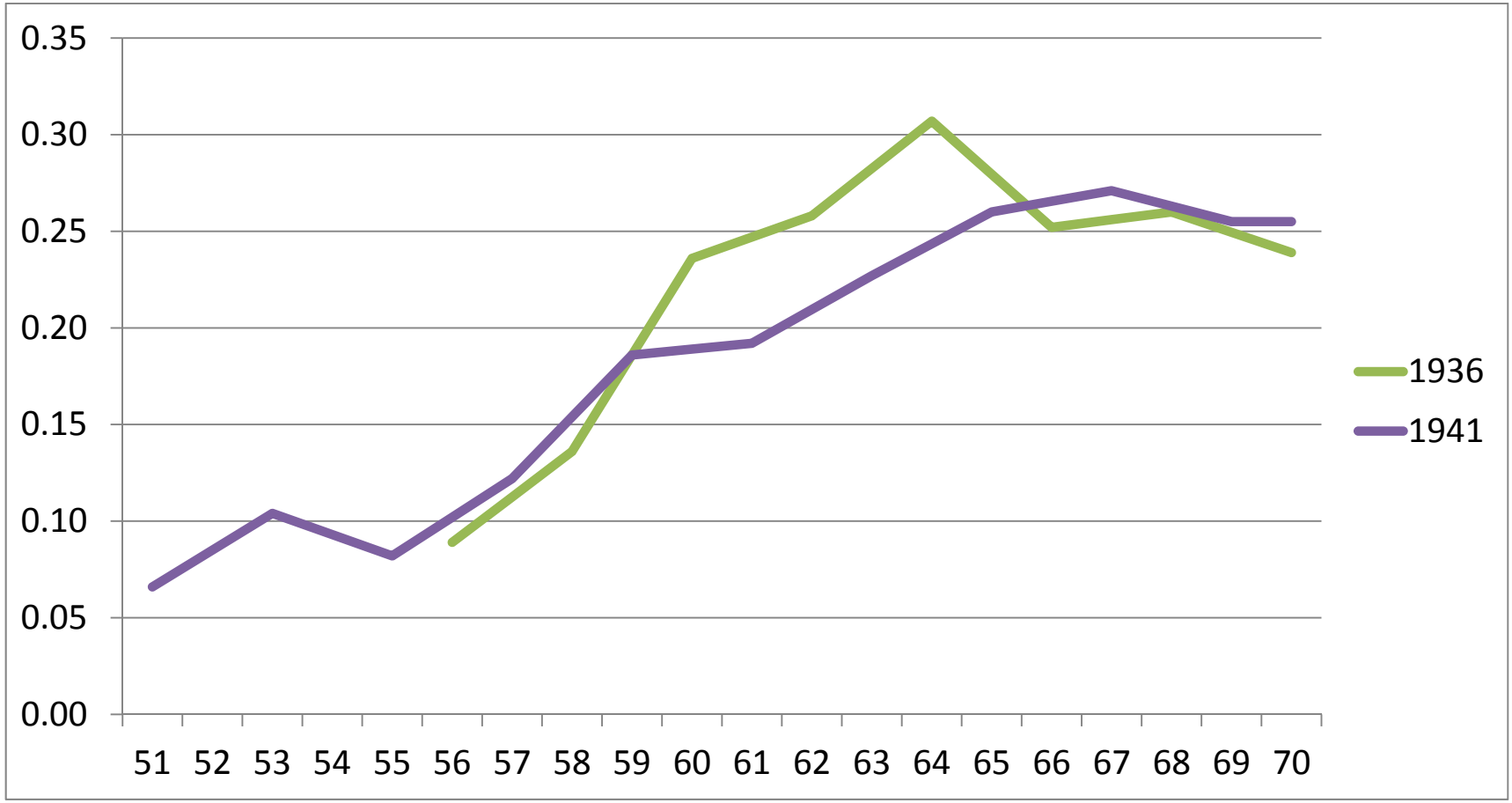


Increasing for women at all ages

These were successive two-year cross sections

Following a cohort in panel gives same pattern

Retirement hazards $P(NLF_{t+2} \mid LF_t)$ estimated in panel.
Birth cohorts 1936 and 1941



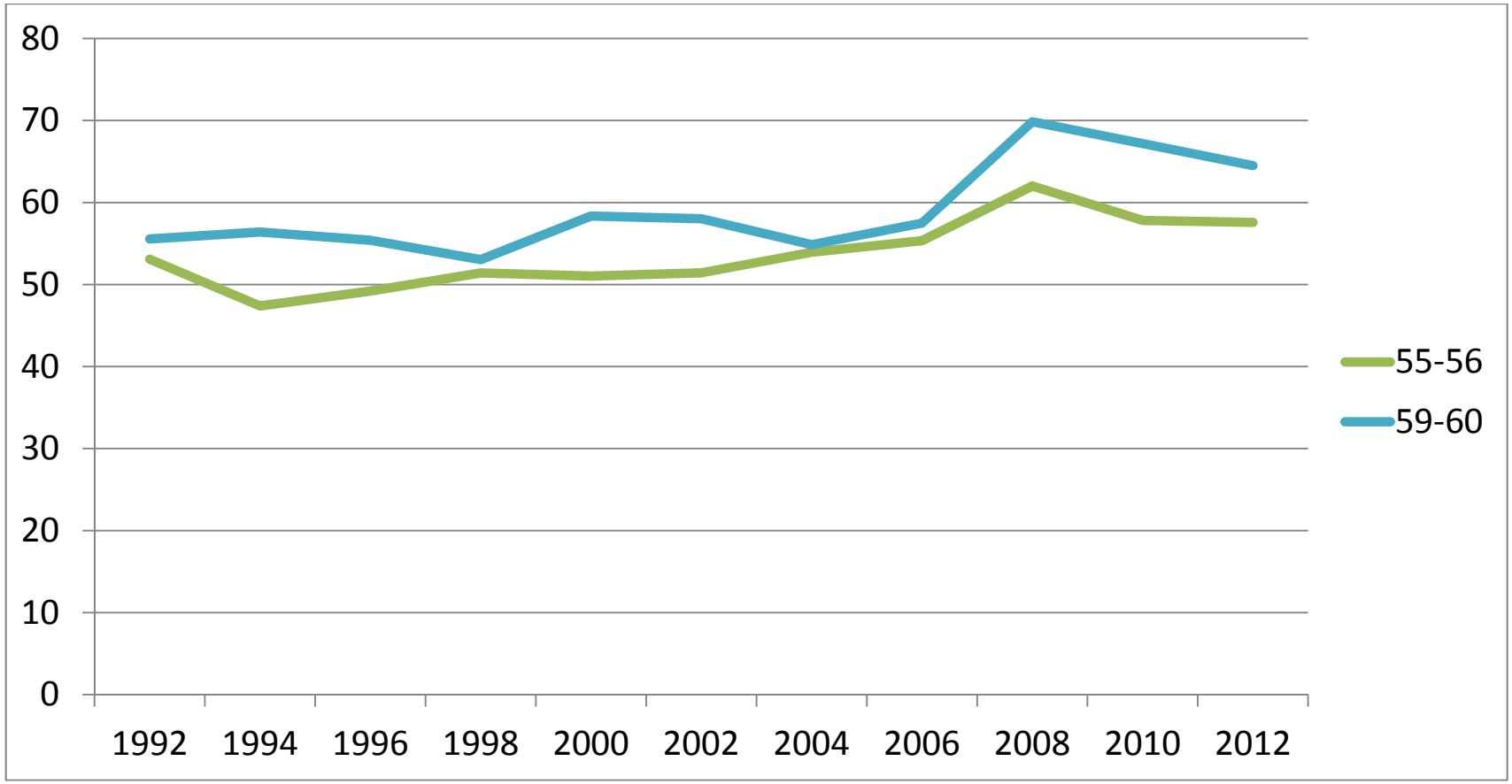
Subjective probability of working

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 62?

P62

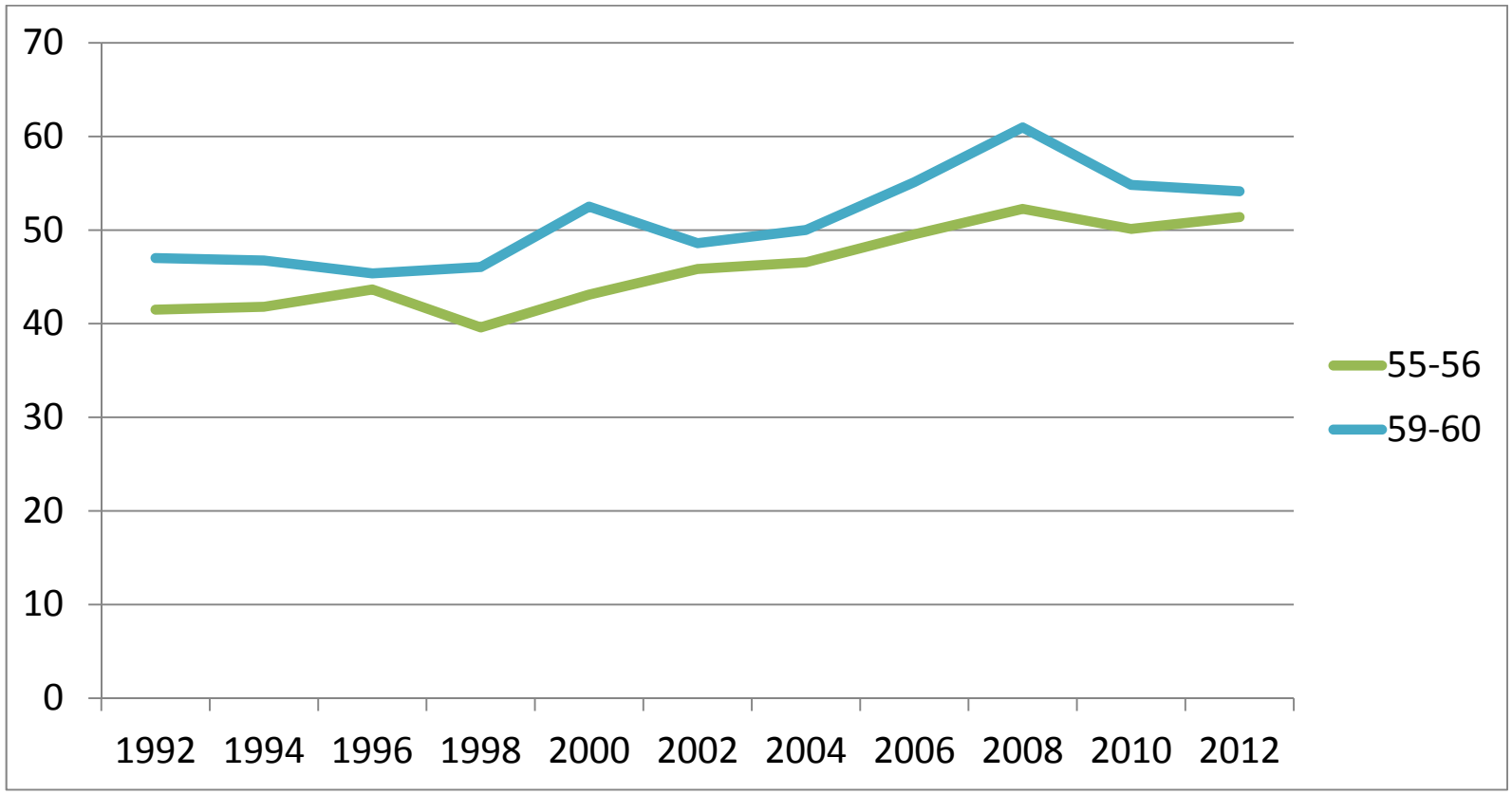
P65

Subjective probability of working past 62 (P62), men



Smallish increased: e.g. age 55-56 from 53% to 58%;

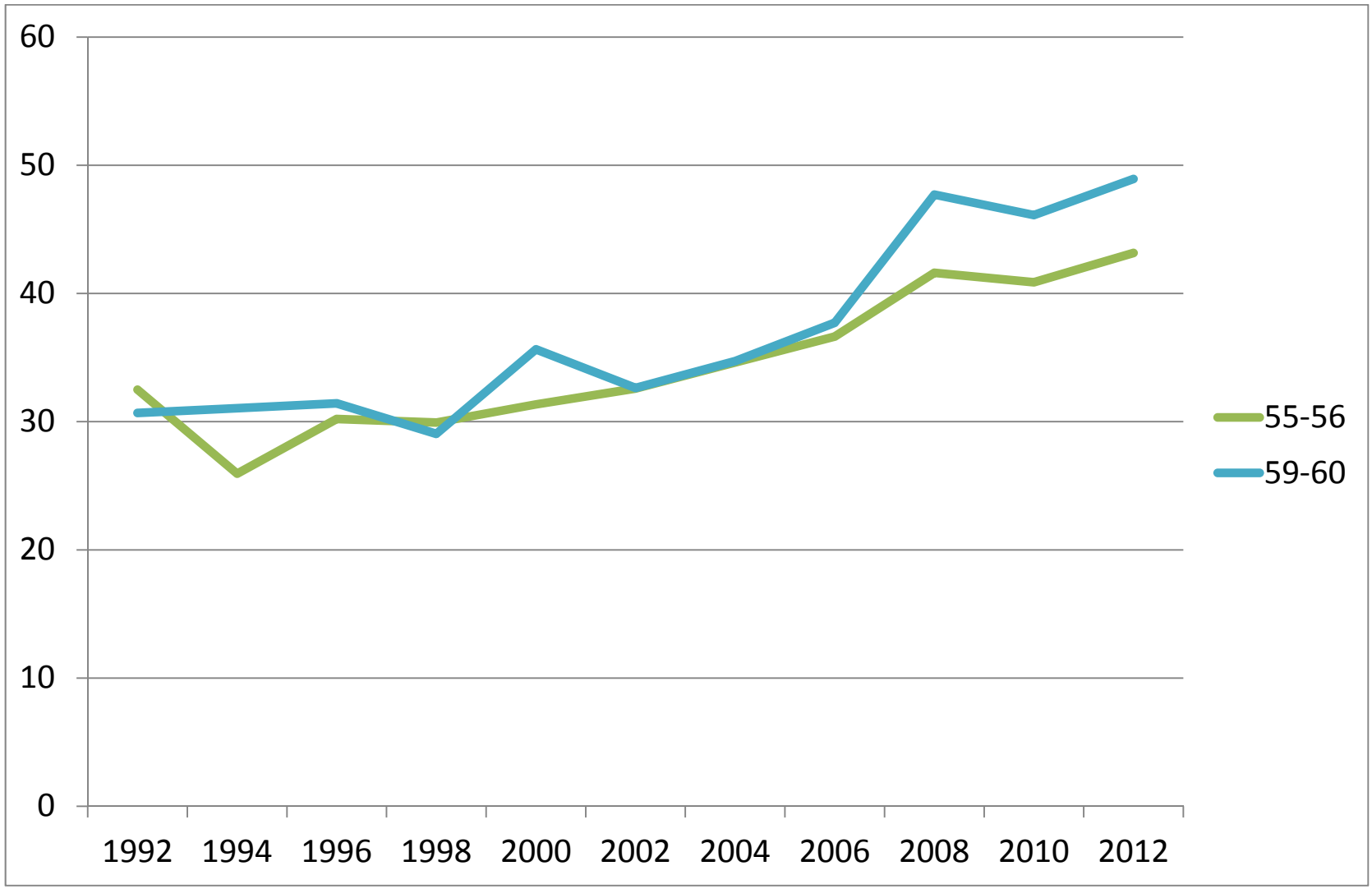
P62, women



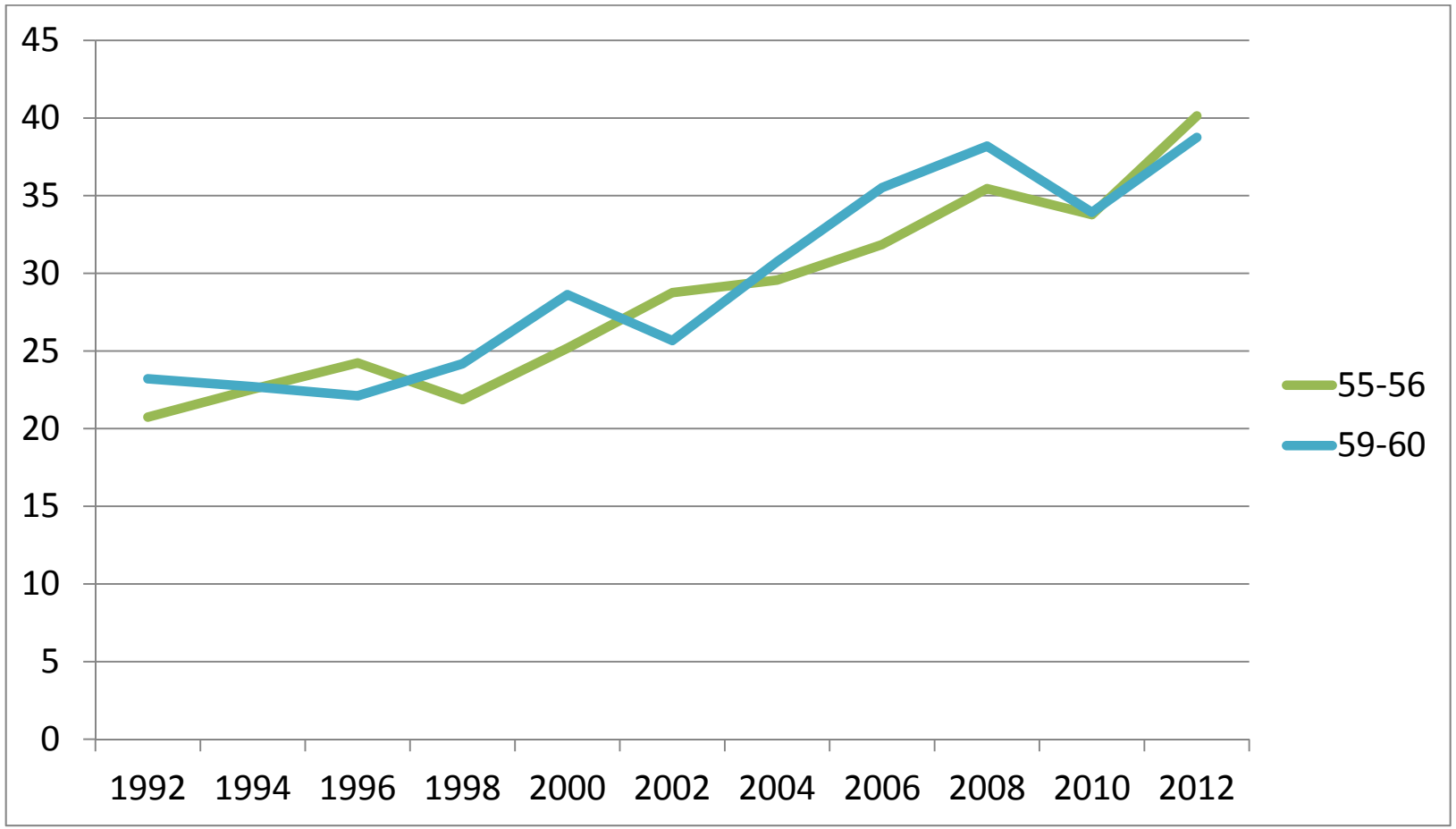
Large increases: e.g. age 55-56 from 42% to 51%

Would predict increase in labor force participation of 9ppts

P65, men


60
50
40
30
20
10
0
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
55-56
59-60

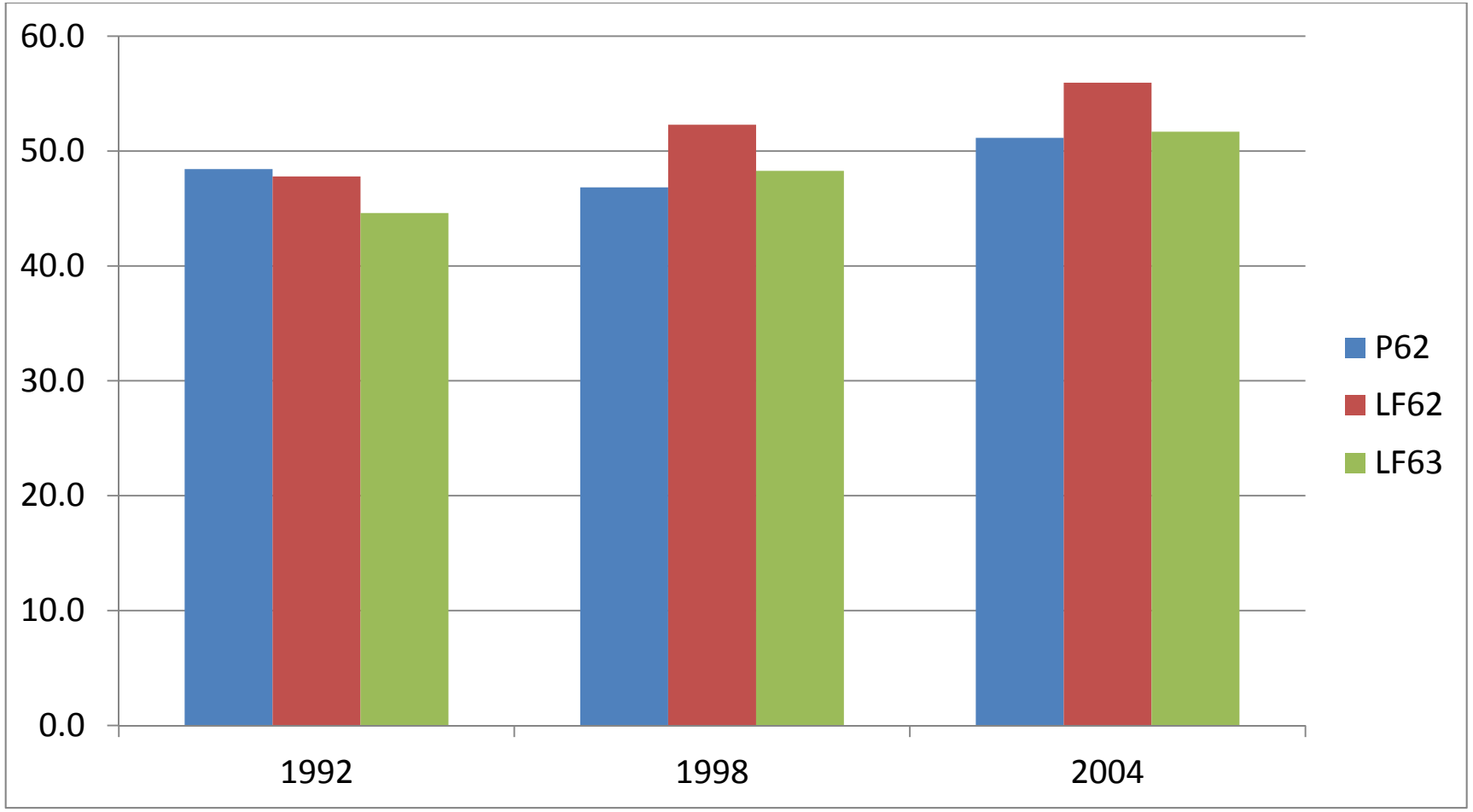
P65, women



Age 55-56 increase from 21% to 40% at age 65

Predictive accuracy in panel

P62 among workers 51-55, labor force participation rates at 62 and 63, men and women combined.



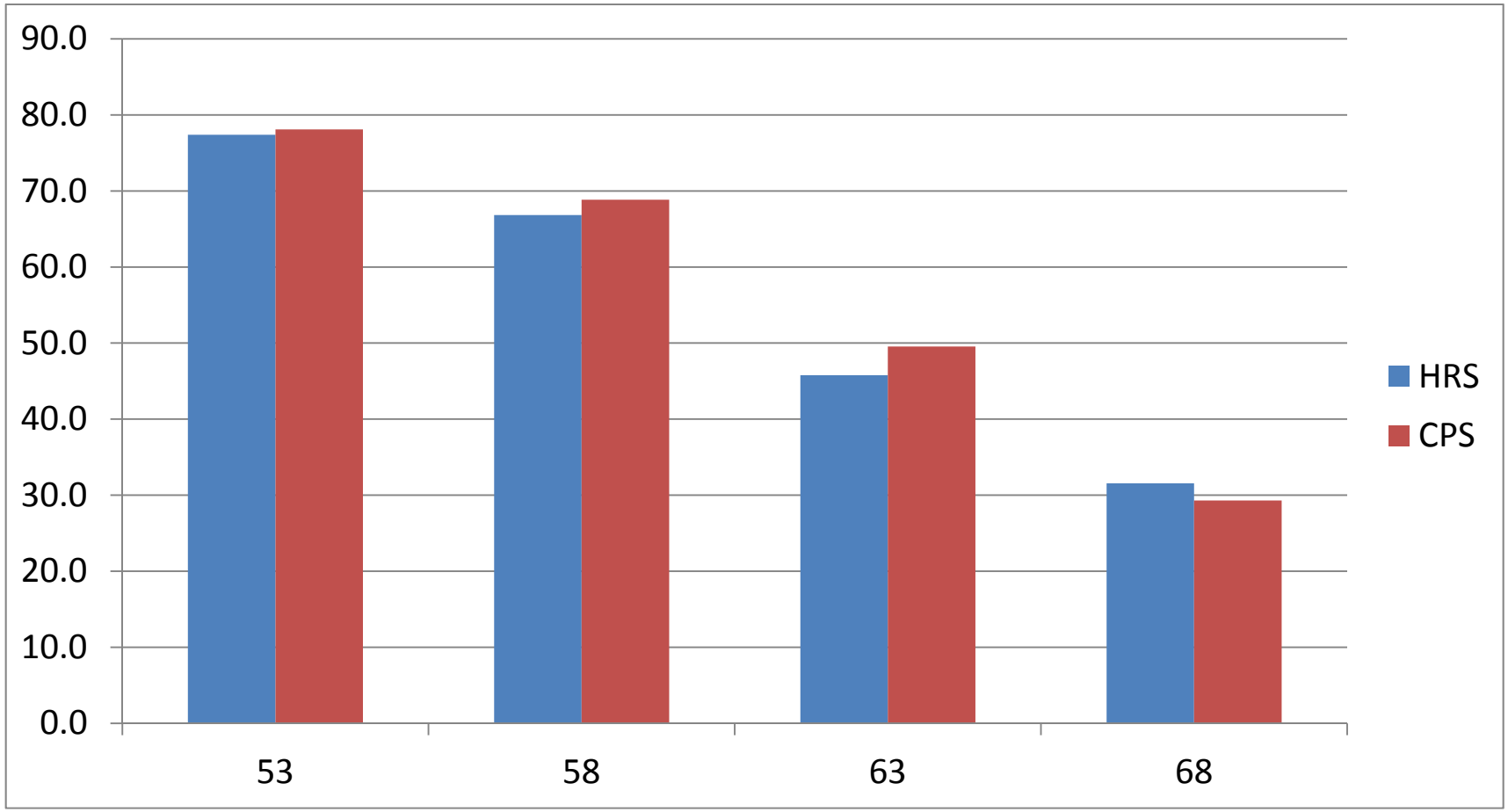
Simulating labor force participation

Begin with observed labor force participation rates by single years of age 51…55

Use HRS labor force participation transition rates $P(LF_{t+2} \mid LF_t)$ and $P(LF_{t+2} \mid NLF_t)$

Simulate out to age 92

Simulated labor force participation in HRS and observed in the CPS, men and women combined. Five-year age bands, centered



Predictions based on P62

1. Calibrate retirement hazards (Cox model) so that simulated labor force participation at ages 62/63 equals P62 as stated at ages 51-55 in 1992.

$$\frac{d \ln s_t}{dt} = -h_t \theta$$

$$s_t = \exp(-\theta \int h_t dt)$$

h_t from HRS data (retirement hazards $P(NLF_{t+2} \mid LF_t)$)

$s_{62} = P62$ average over 51-55 year-olds

θ chosen to satisfy $P62 = \exp(-\theta \int h_t dt)$

θ = Cox factor = 0.98

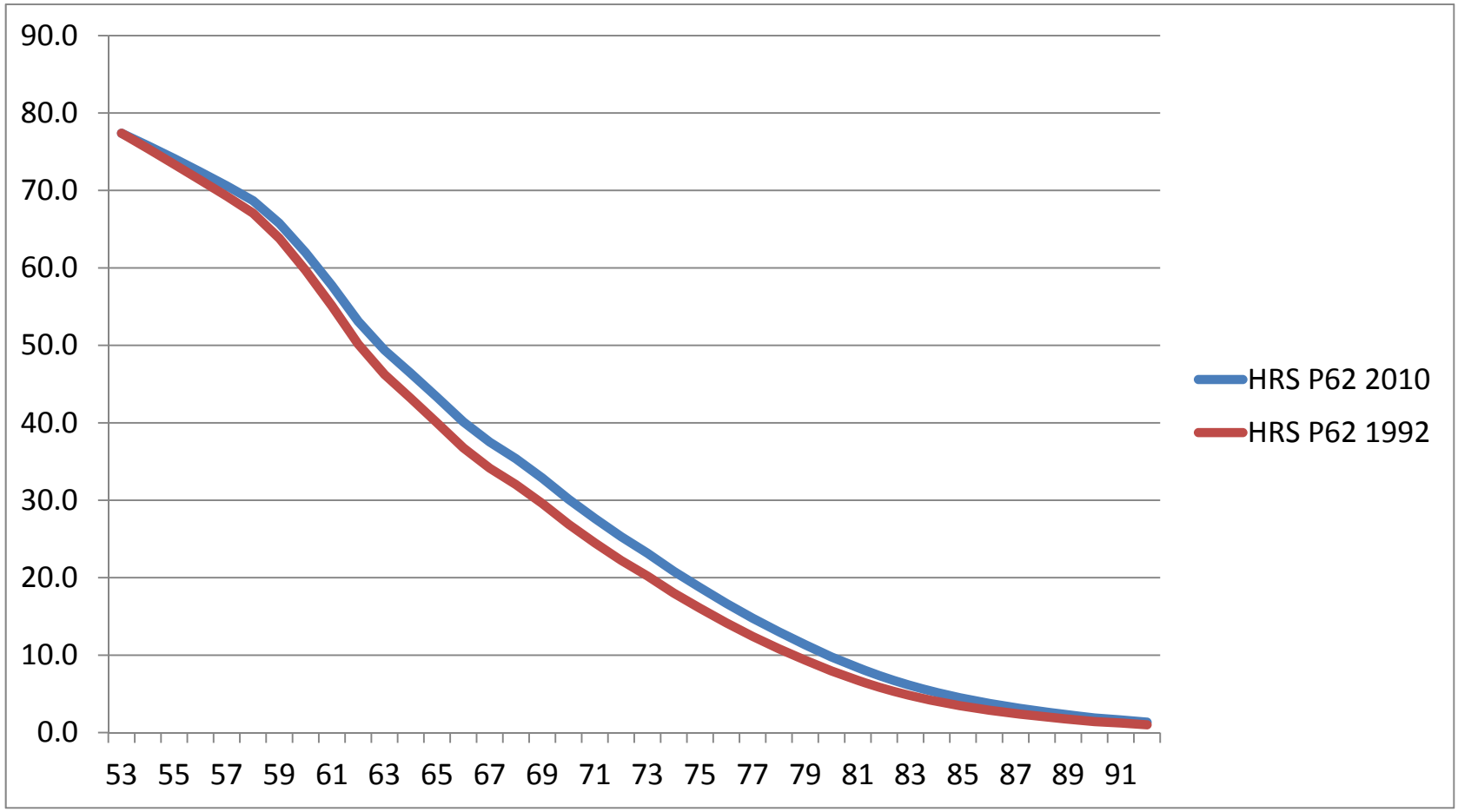
2. Modify Cox factor so that simulated labor force participation at ages 62/63 equals P62 as stated at ages 51-55 in 2010.

Cox factor = 0.90

Retirement hazards reduced by 10%

$P(LF_{t+2} \mid NLF_t)$ unchanged: little trend.

Population labor force rates based on P62 in 1992 and on P62 in 2010, men and women combined.



Age 67, labor force rate increased by 3.4 ppts. Work life from age 53 increased from 11.4 to 12.2 years, about 7%

Alternative to P62 is P65

Much larger increase in P65

P62 ages 51-55:

1992, 48.3%

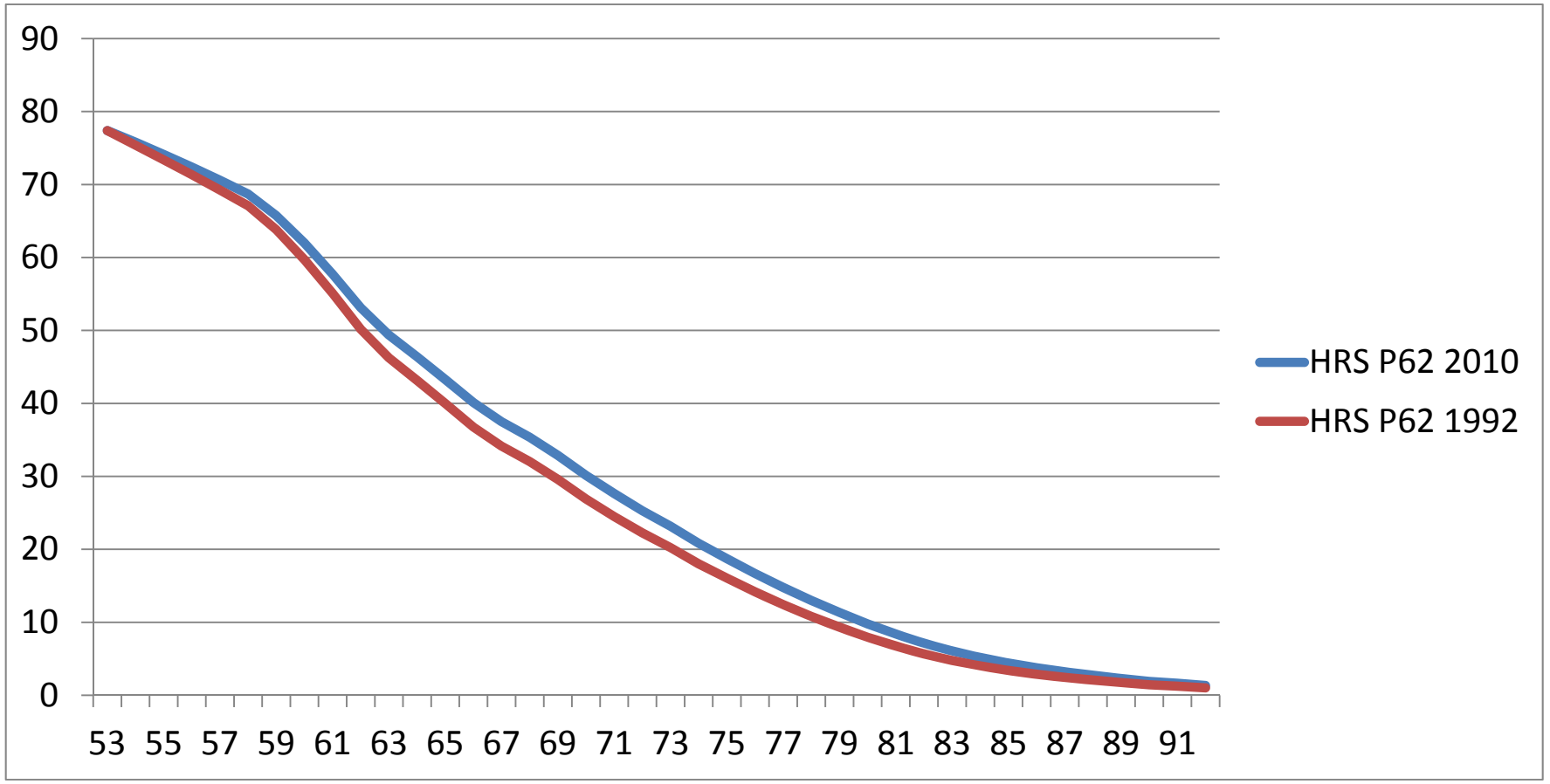
2010, 52.3%, an increase of 3.9 ppts. or 8%

P65 ages 51-55

1992, 26.5%

2010, 36.9%, an increase 10.4 ppts. or 39%

Population labor force rates based on P65 in 1992 and on P65 in 2010, men and women combined.



Labor force participation rate increased by 8.2 percentage points age 66. Work life increased from 10.4 to 12.3 years

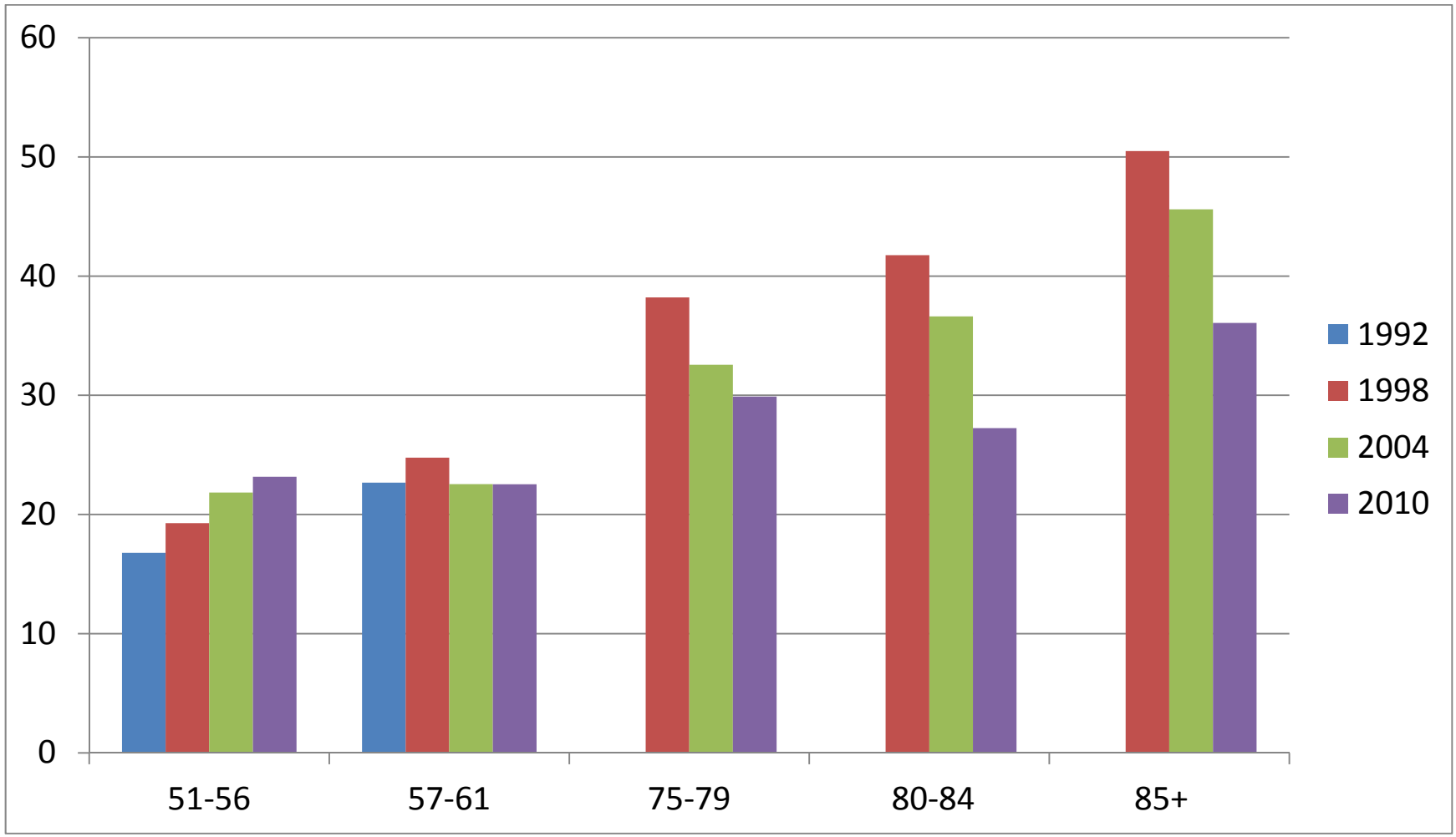
Explanation for trends

- Health
- Survival
- Joint retirement
- Decline of Defined Benefit pensions
- Decline of physical demanding jobs
- Increase in normal retirement age in Social Security
- Expectations of Social Security benefit cuts
- Wealth

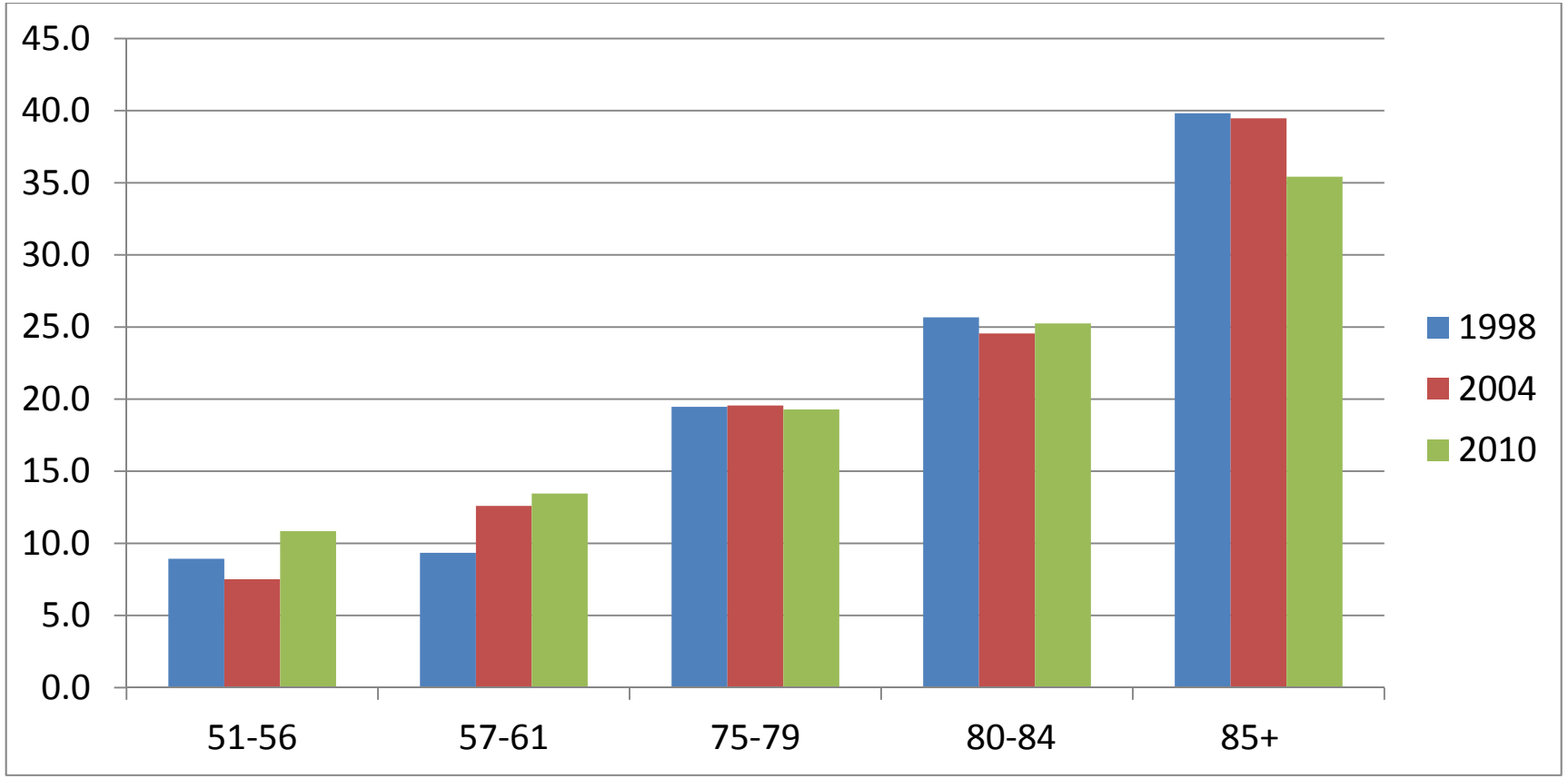
Better health

- Makes work less onerous

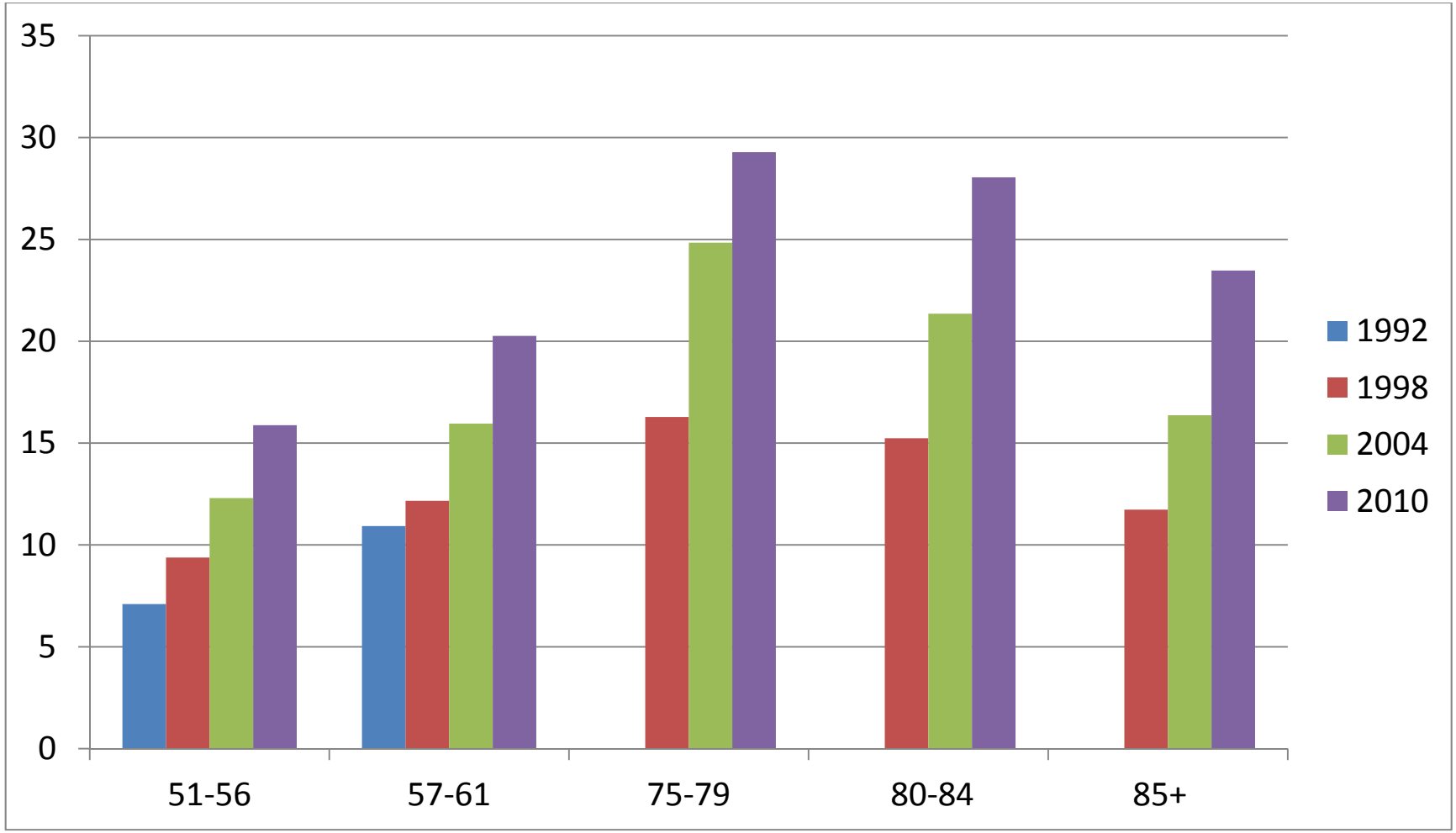
Percent with poor or fair self-rated health



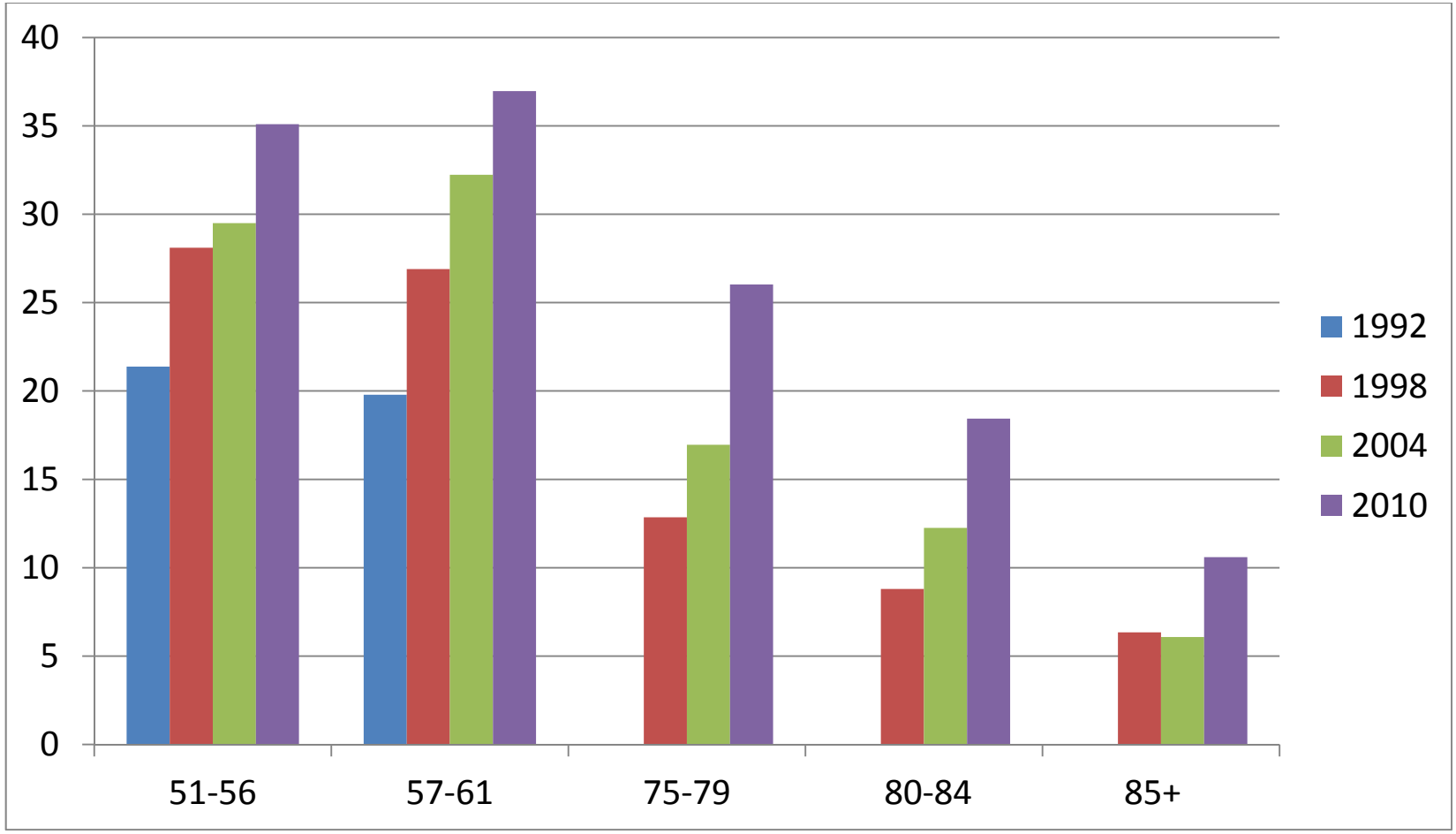
Percent with one or more ADL limitation



Percent with diabetes



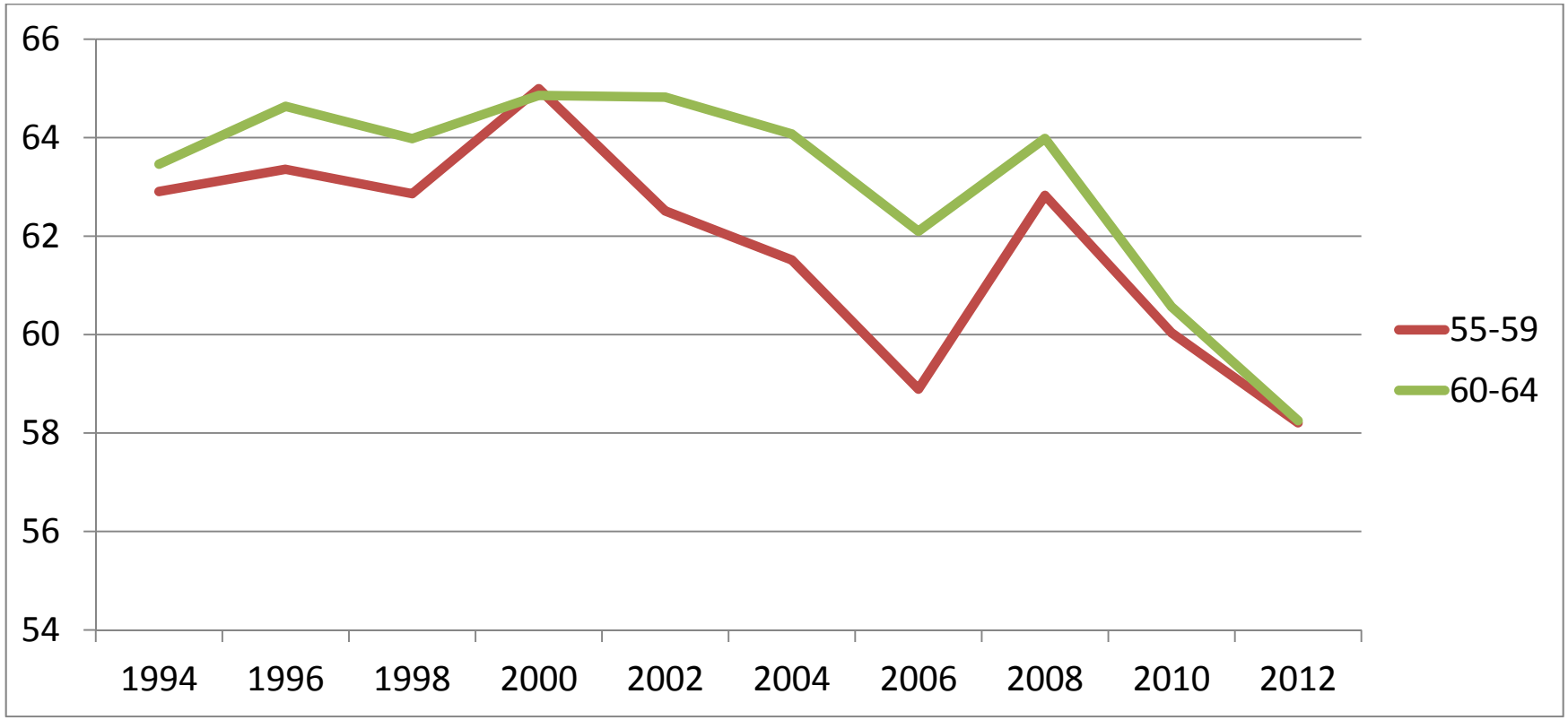
Percent with BMI 30+



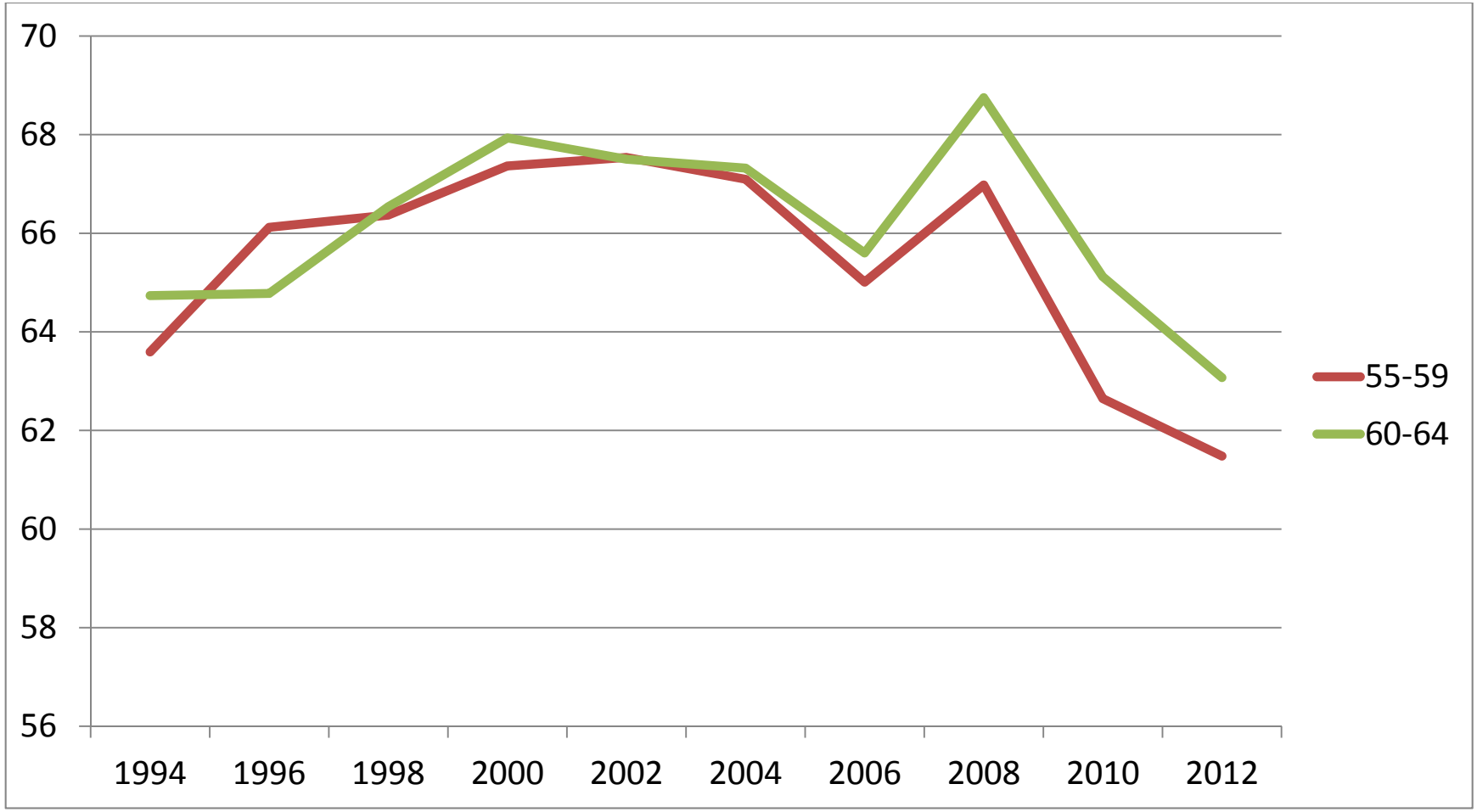
Greater survival prospects

Need more wealth to finance a longer retirement.

Average subjective survival to age 75, males



Average subjective survival to age 75, females



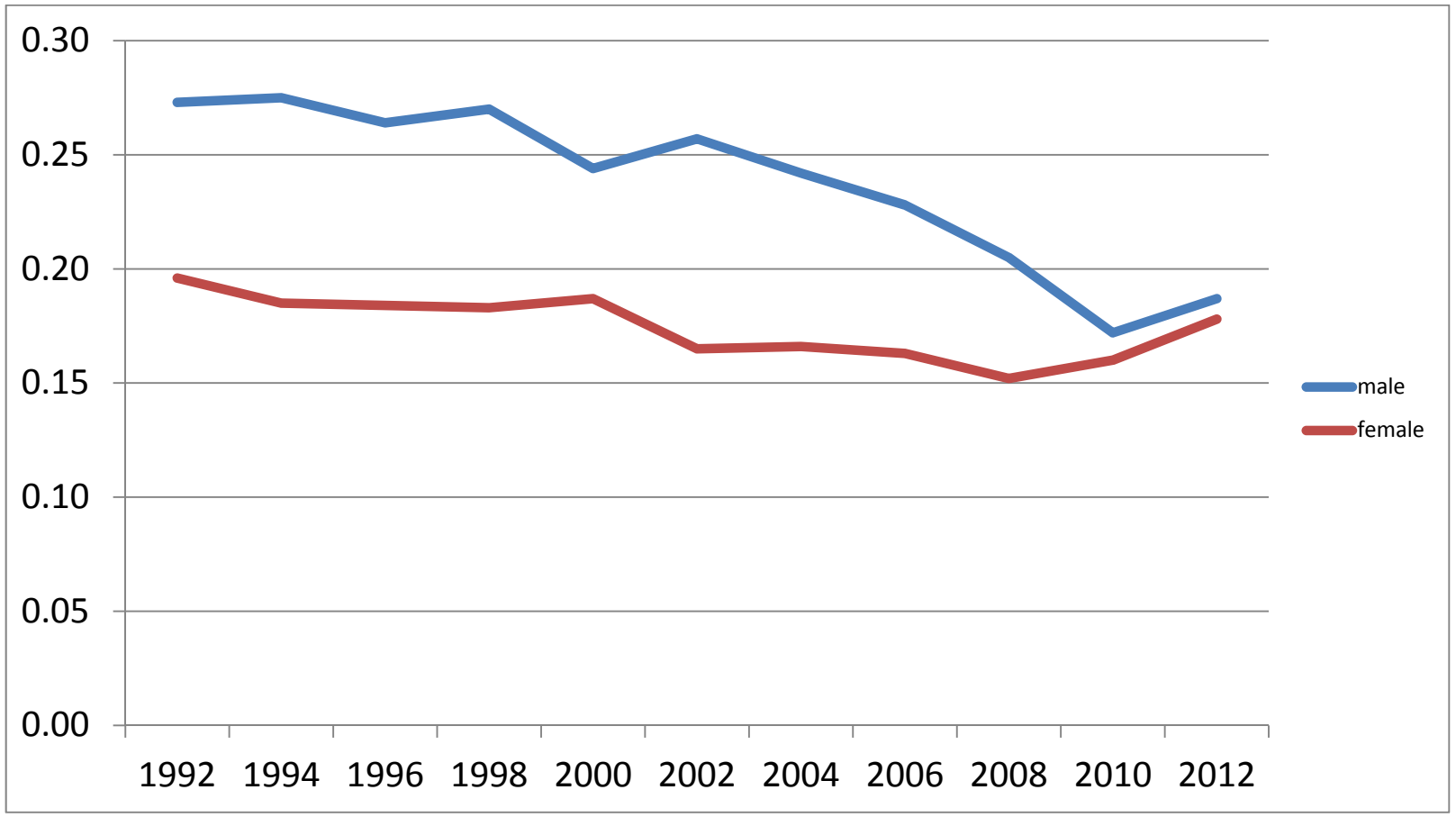
Joint retirement

- Increased labor force participation of wives induced husbands to remain in labor force longer
- But what caused increased labor force participation of wives?

Decline of DB pensions

DB pensions have strong incentives to retire at specific ages, often prior to age 62.

Fraction of worker with DB pension on current job



Fewer physically demanding jobs

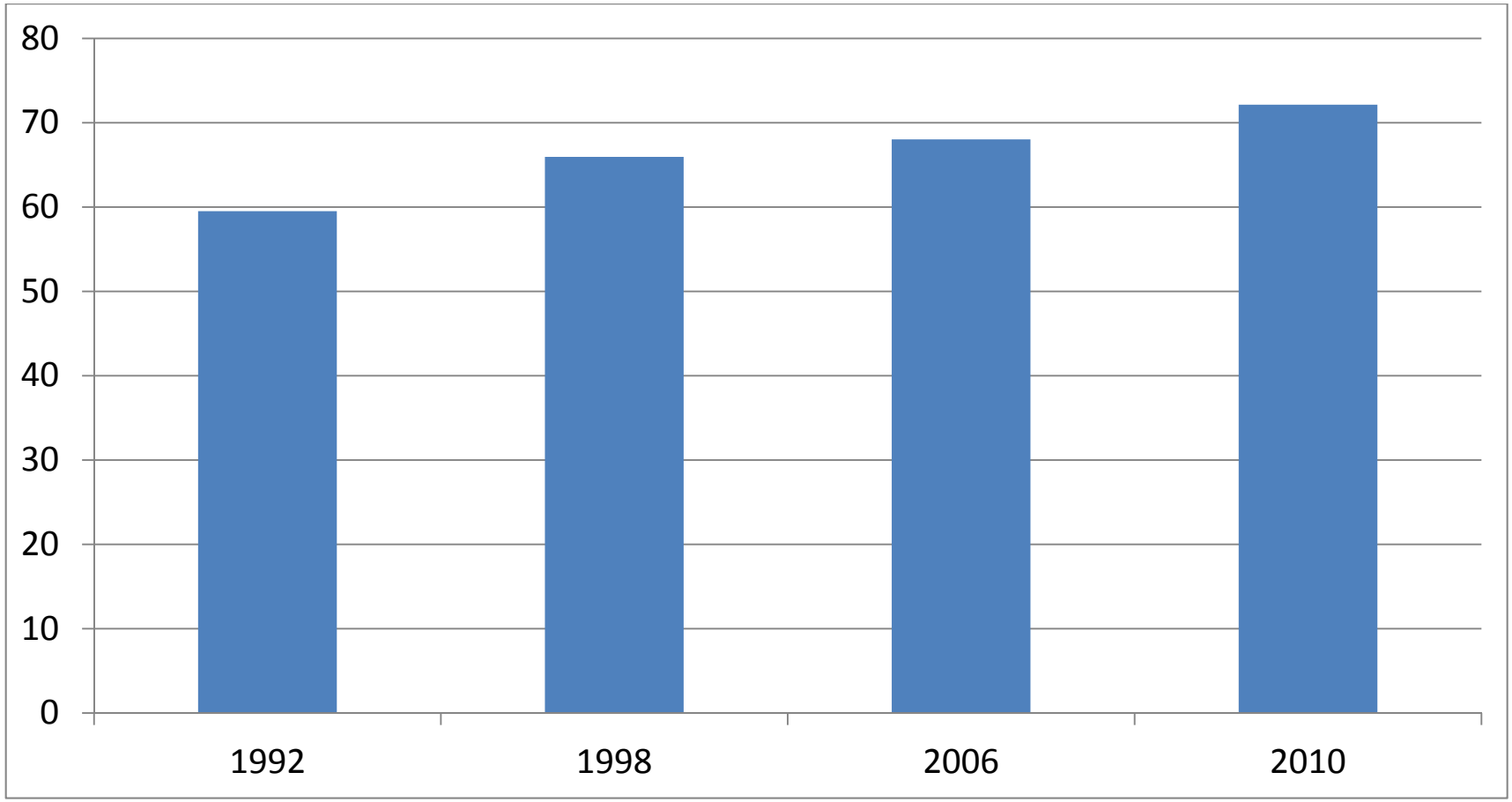
Changes in the Social Security system.

Increase in Full Retirement Age from 65 to 66 which took place over a six year period

But trend began before Social Security change

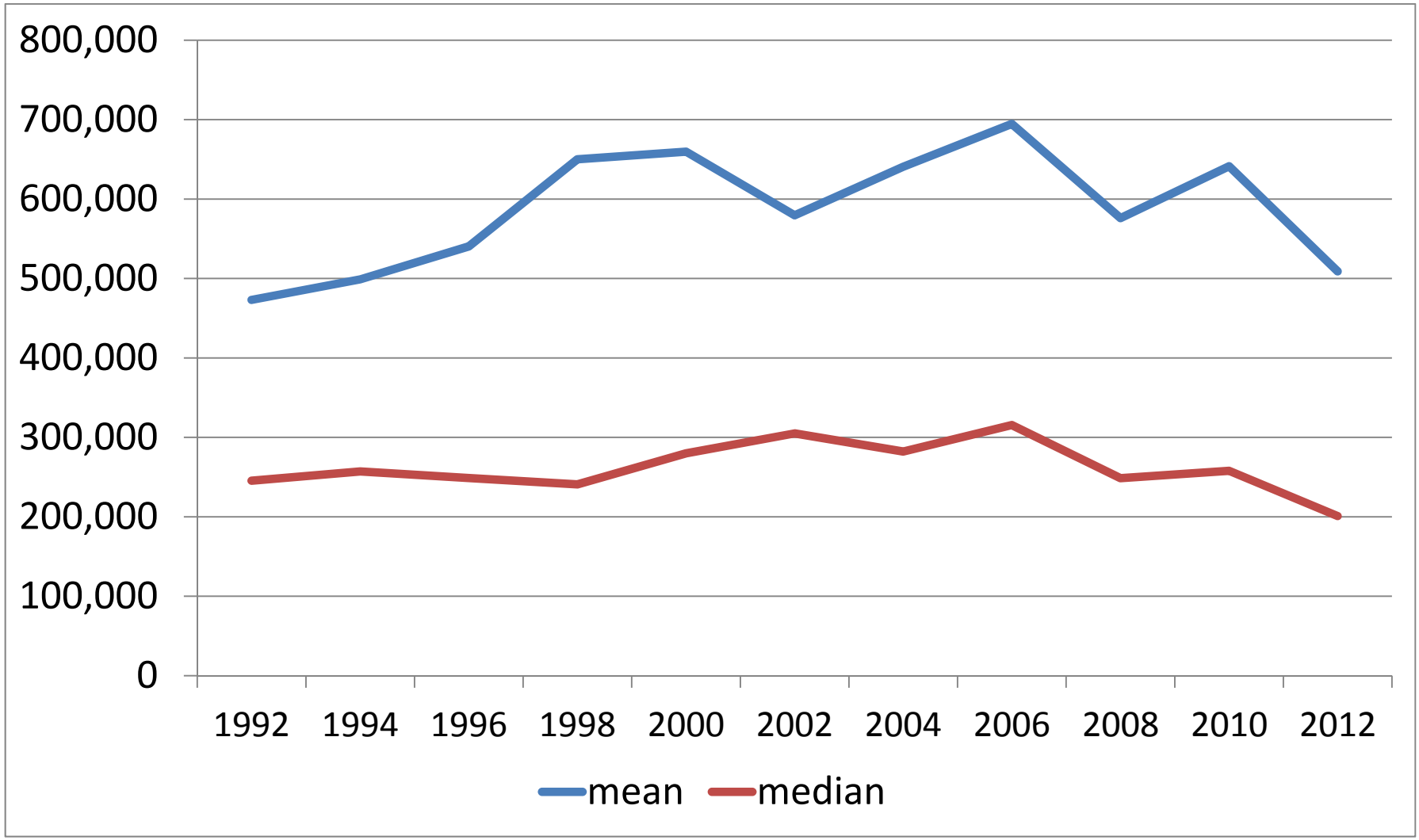
Expectations about future Social Security generosity

Average subjective probability that Social Security will be reduced, 51-56 year-olds

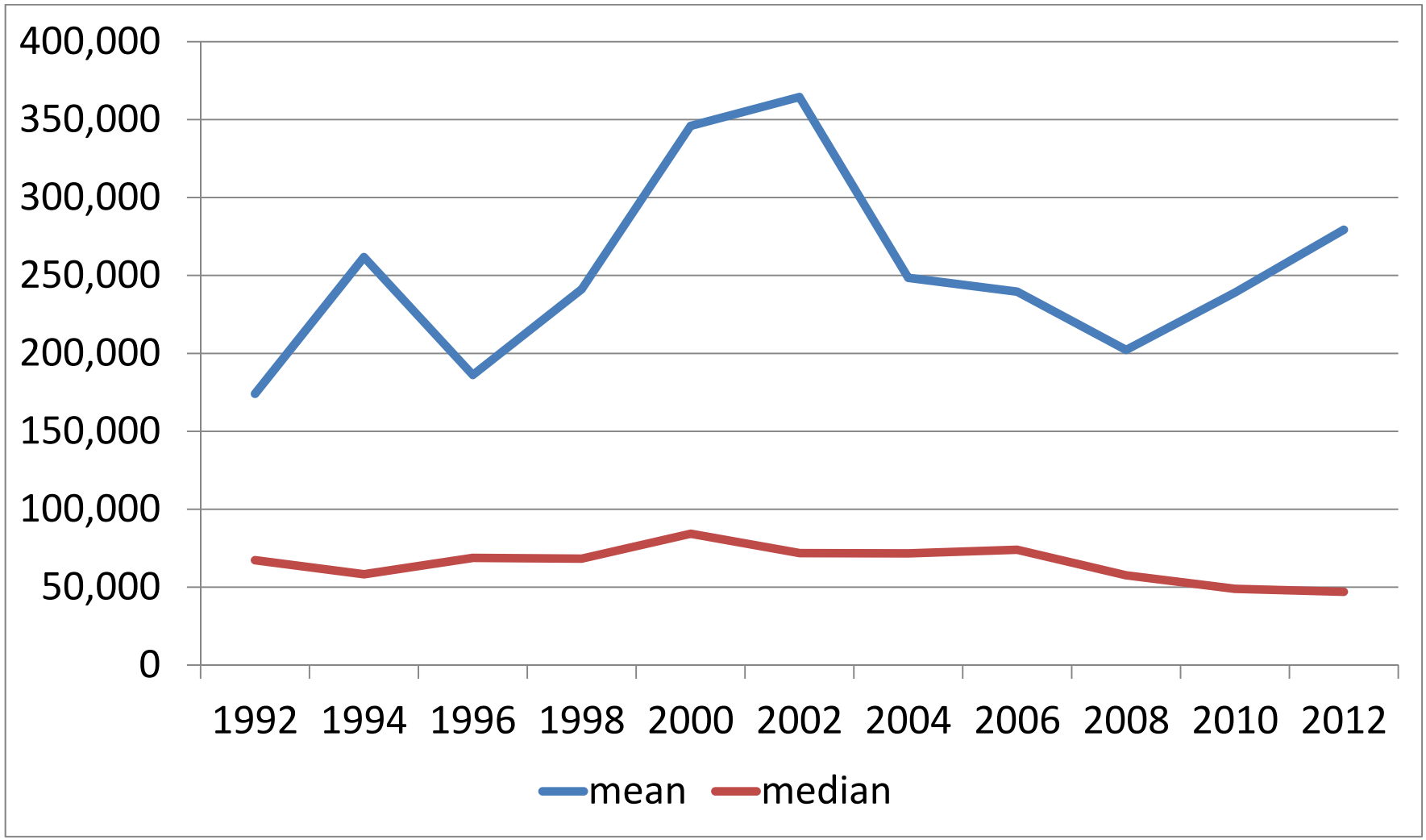


Wealth

Household wealth of couples age 57-60



Household wealth of single persons age 57-60



Summary

Large change in subjective probability of working, especially past age 65.

Using P65, forecast labor force participation in 2023 of 51-55 year-olds in 2010.

Participation predicted to be 8.2 ppts (age 66) higher than participation of those who were 51-55 in 1992 (age 66 in 2005).

Predicted labor force participation rates from simulations

	60-64	65-69
2006	46.7	29.9
2020 or 2025	53.8	38.0
Change	**7.1**	**8.1**

Labor force participation rates from CPS

	60-64	65-69
2006	52.8	29.3
2013	55.3	32.4
Change	**2.5**	**3.1**

But reasons for increase not obvious from broad population trends.

Widespread discussion of “inadequate preparation for retirement”

- Difficult for people to understand whether prepared
- Reliance on media
- Possible reaction by working longer
- But not easy to measure importance of this explanation