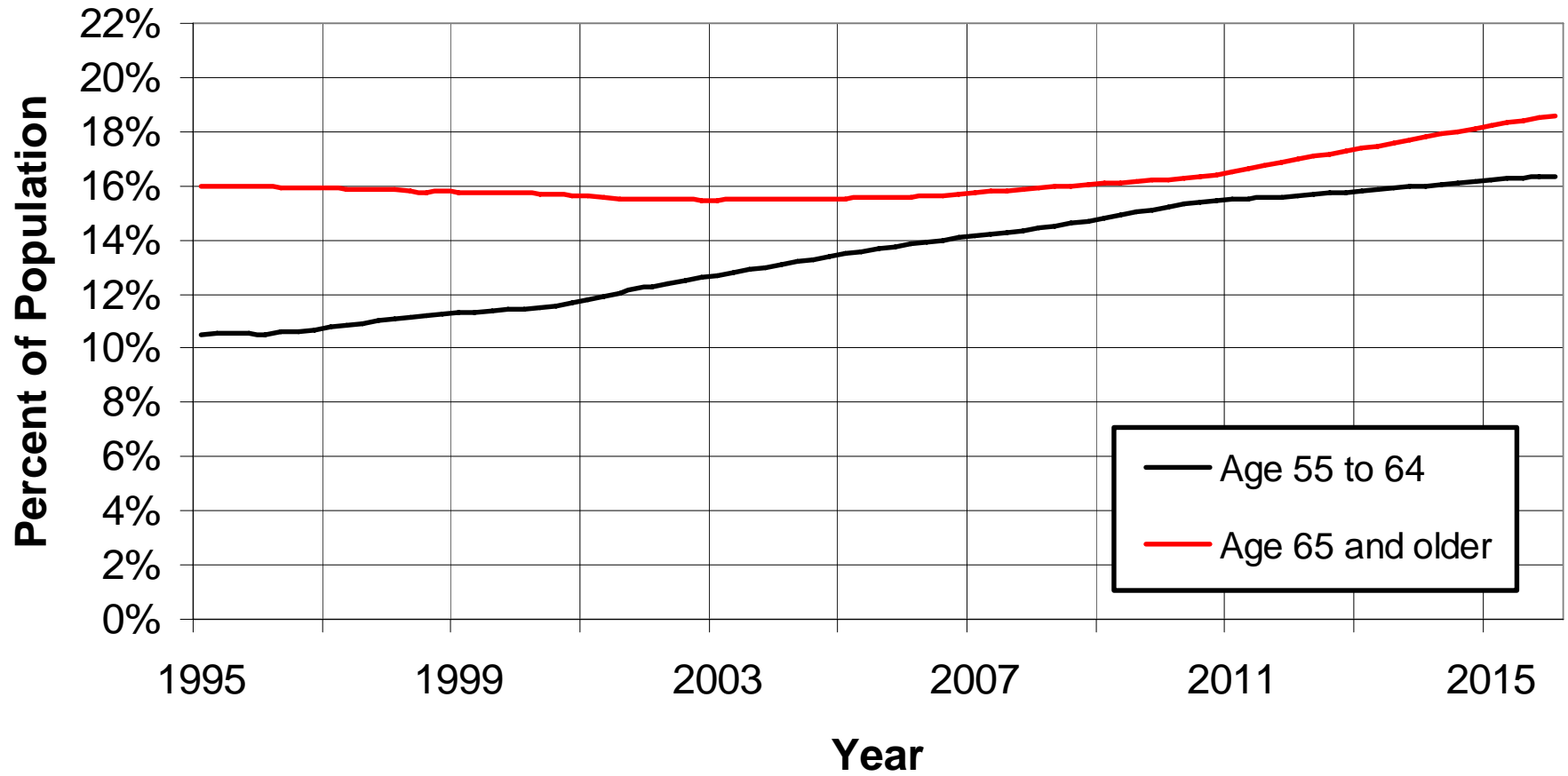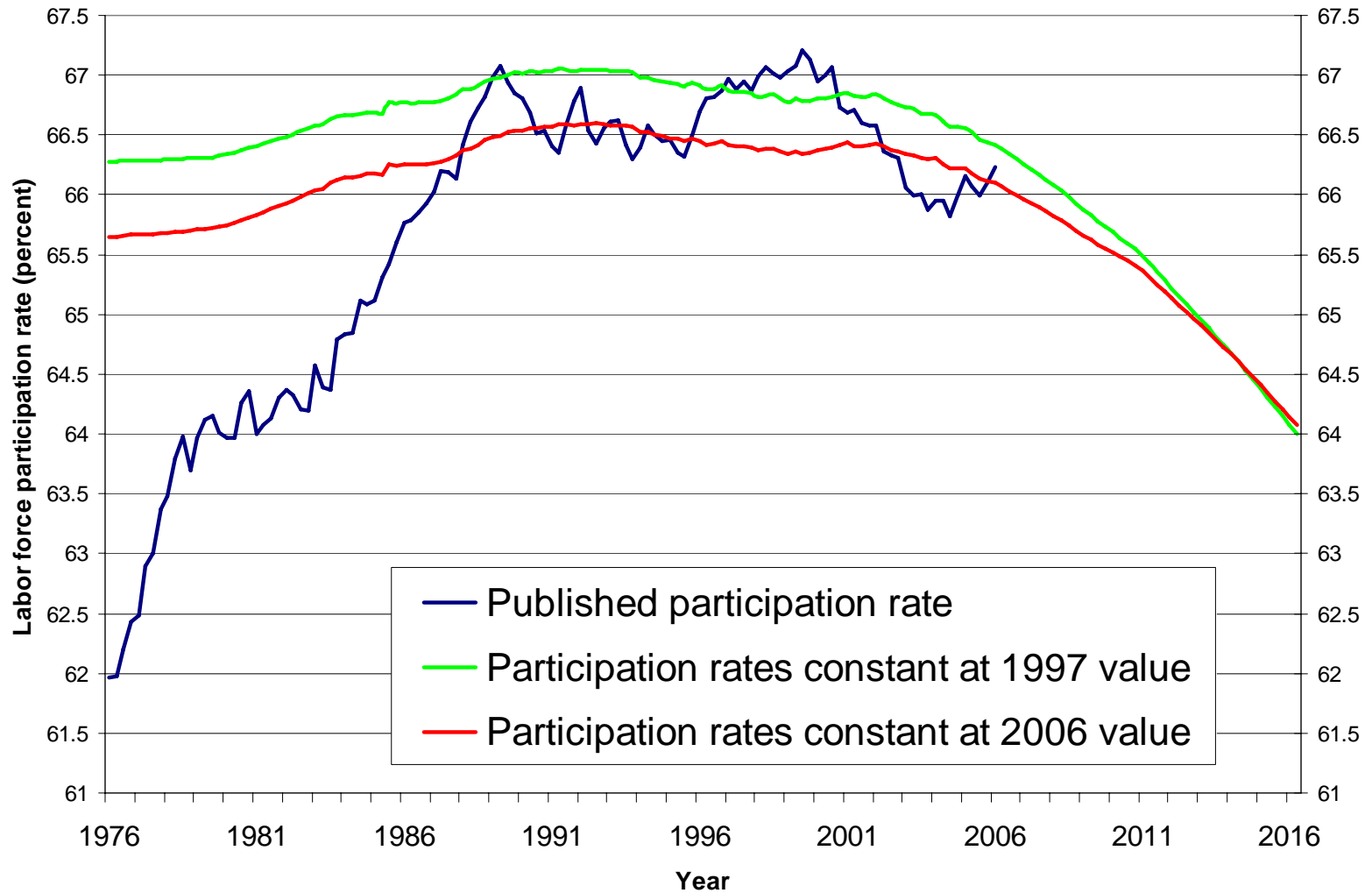# The population is aging …
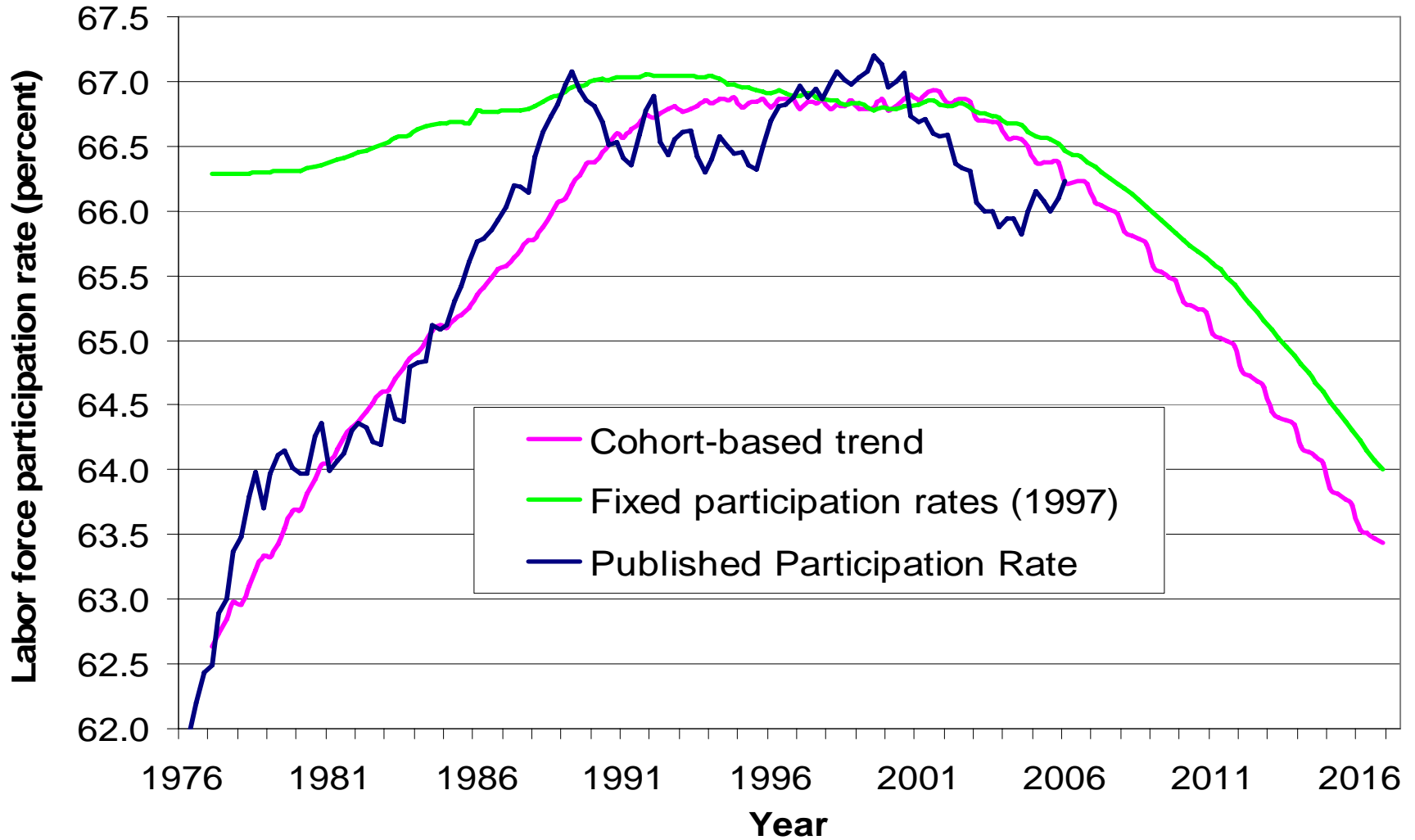
Population shares 1996 to 2016

The aging population will drive down aggregate participation rates. If we hold within-age rates constant …

Our recent work suggests even more downward pressure from demographics

Model-based trend is from the model in FEDS #2007-9, "A Cohort-Based Model of Labor Force Participation," by Bruce Fallick and Jonathan Pingle.

What are the implications of aging for other dimensions of the macro labor market?

- Unemployment Rate
- Worker Flows
- UI Claims
- Hourly Earnings
- Accounting
  - Changes in age distribution
 - Holding constant within-age outcomes

The differences in unemployment rates across age are concentrated at younger ages.
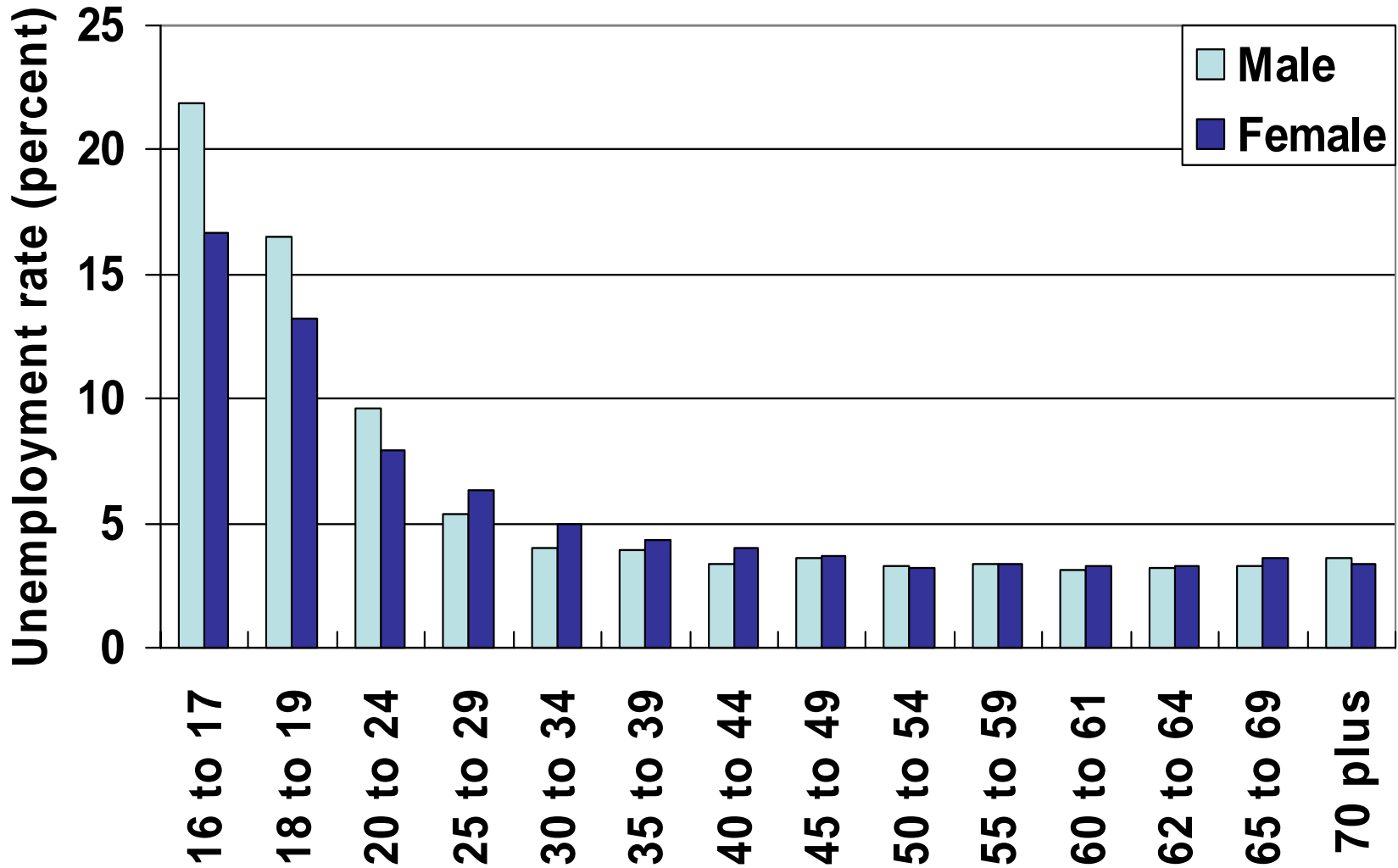
Therefore, aging affected the unemployment rate most in an earlier period when the baby boom was moving through and out of these younger ages.
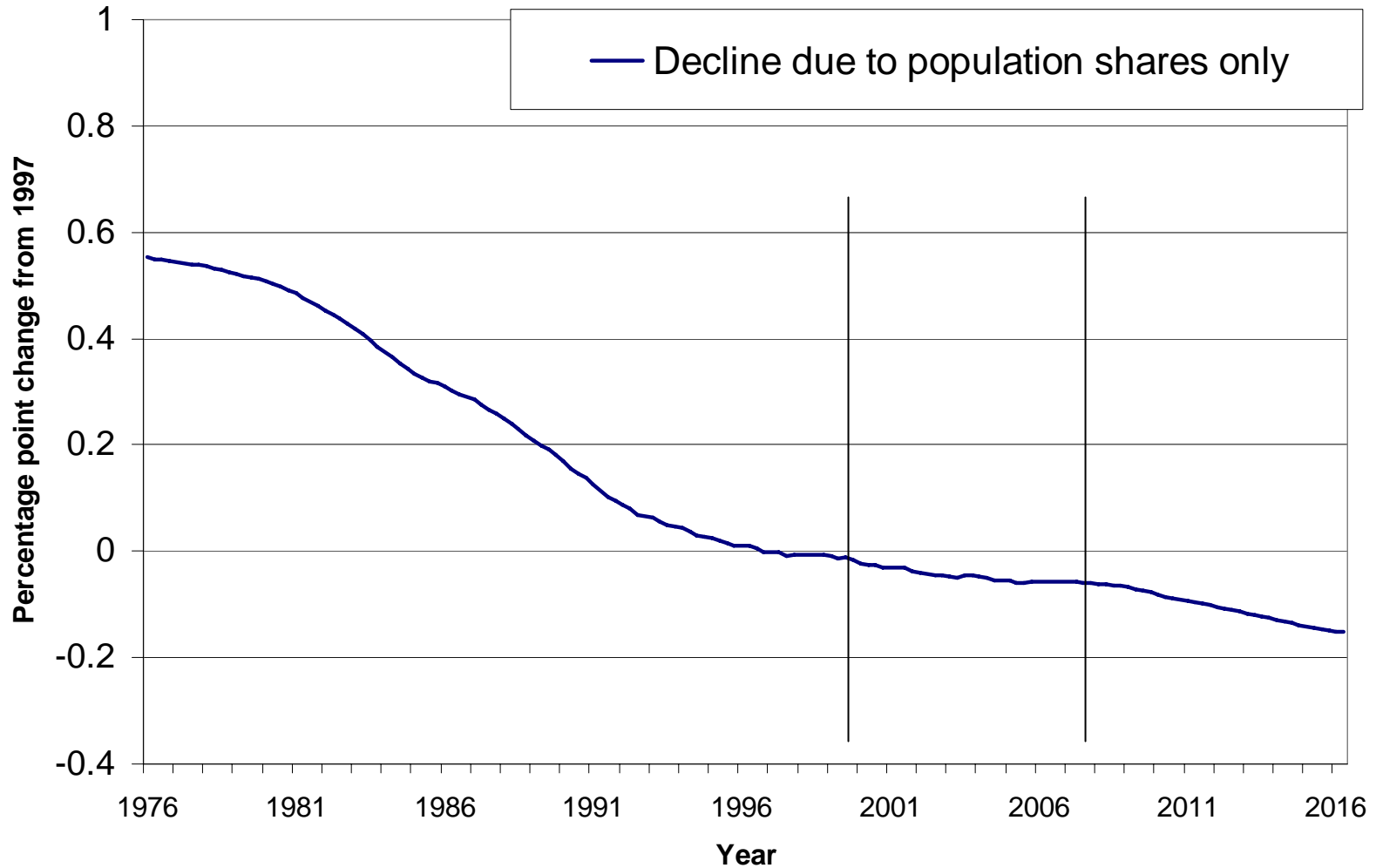
Changes in age-specific LFPRs have made the age distribution of the labor force change more than the age distribution of the population
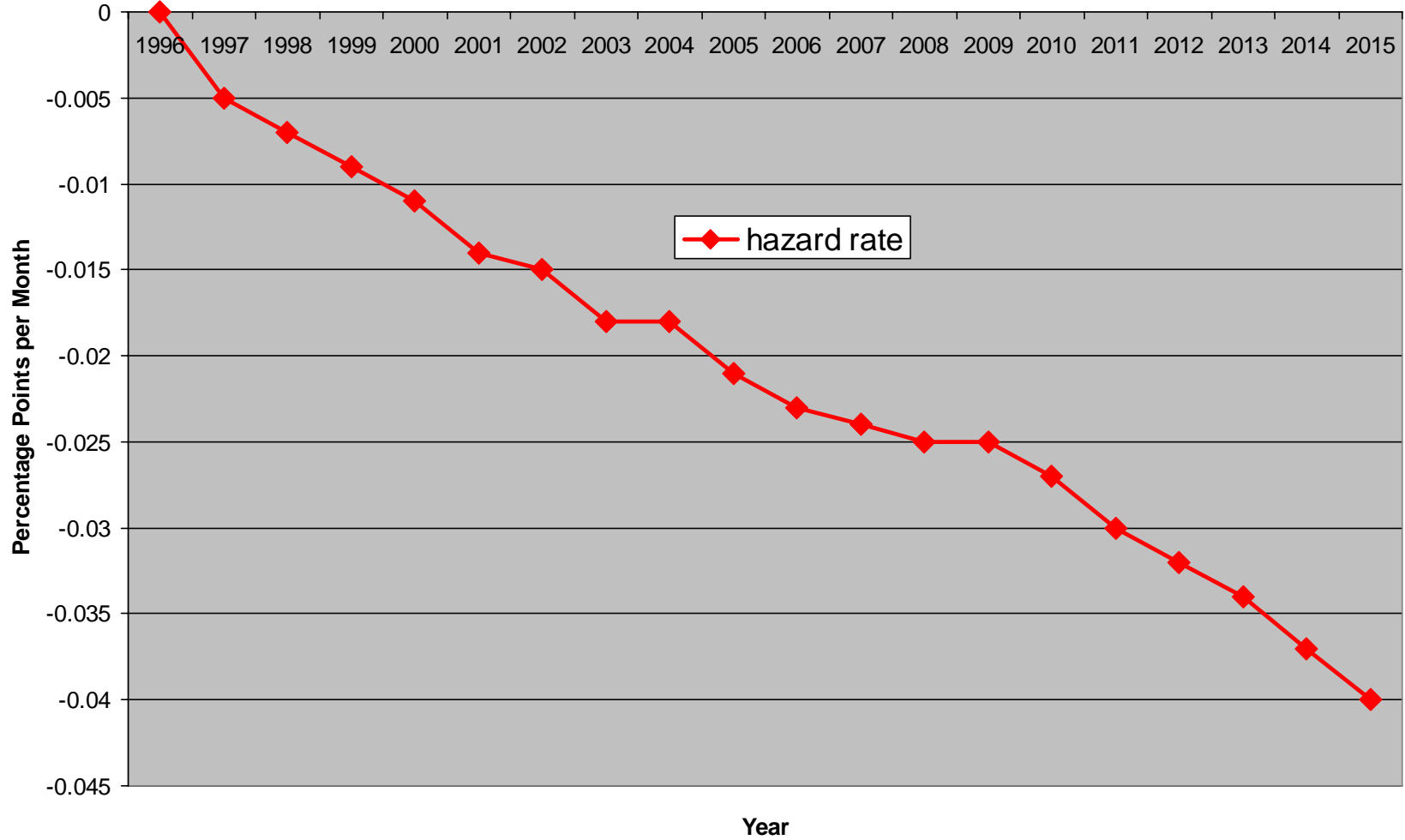
Shares aged 16-24
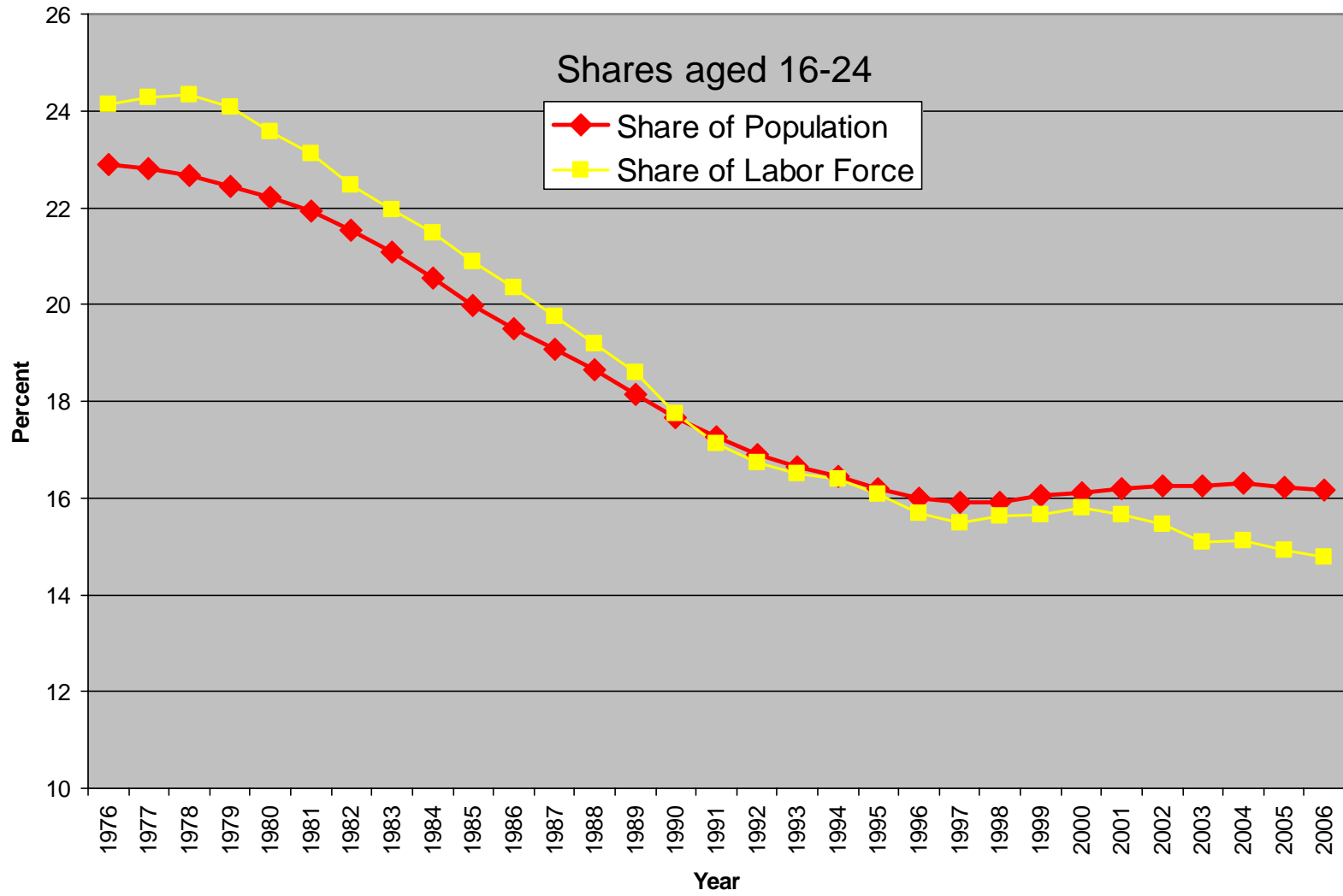
So the aging of the labor force has had a somewhat larger effect on the unemployment rate than has the aging of the population *per se*.
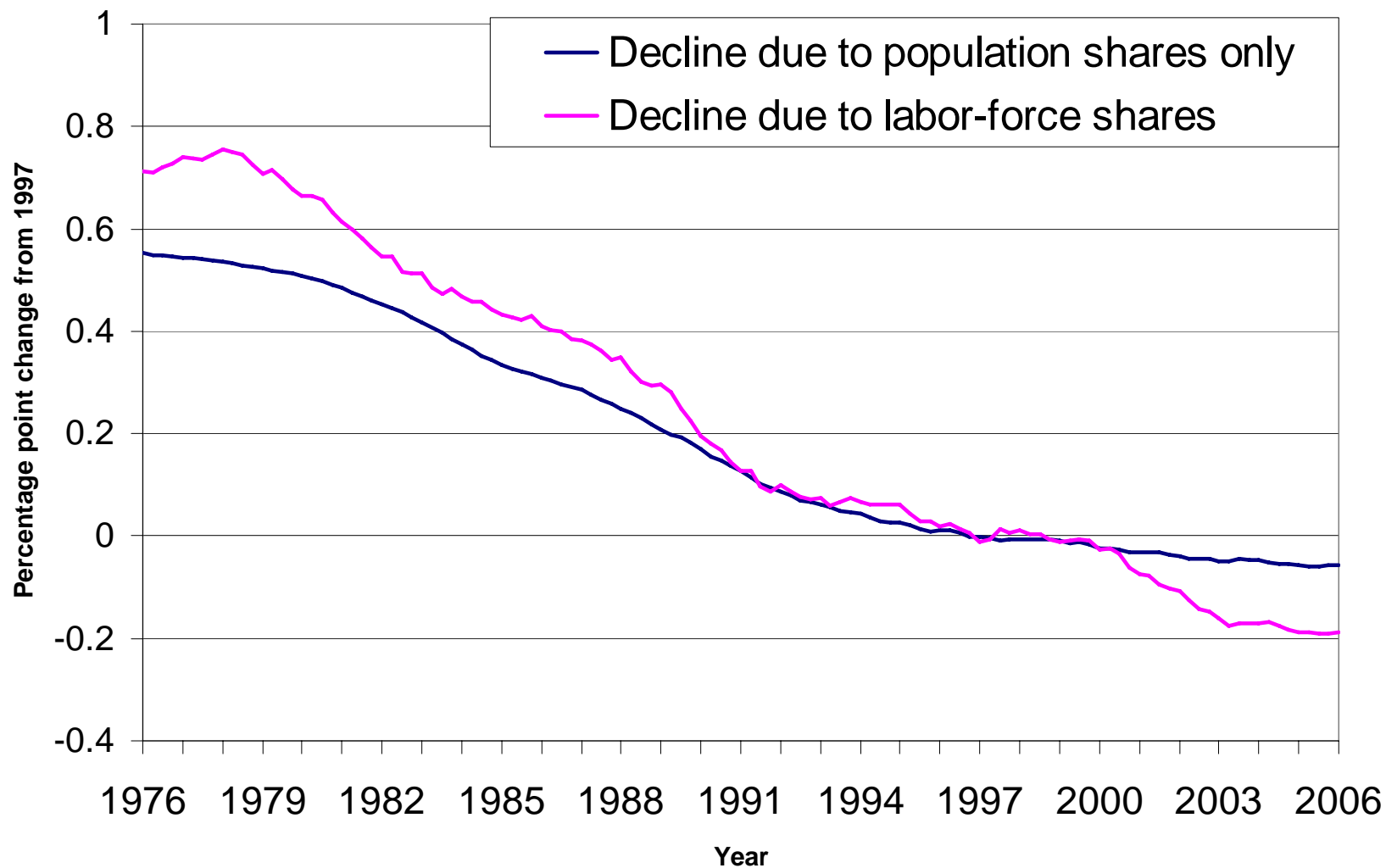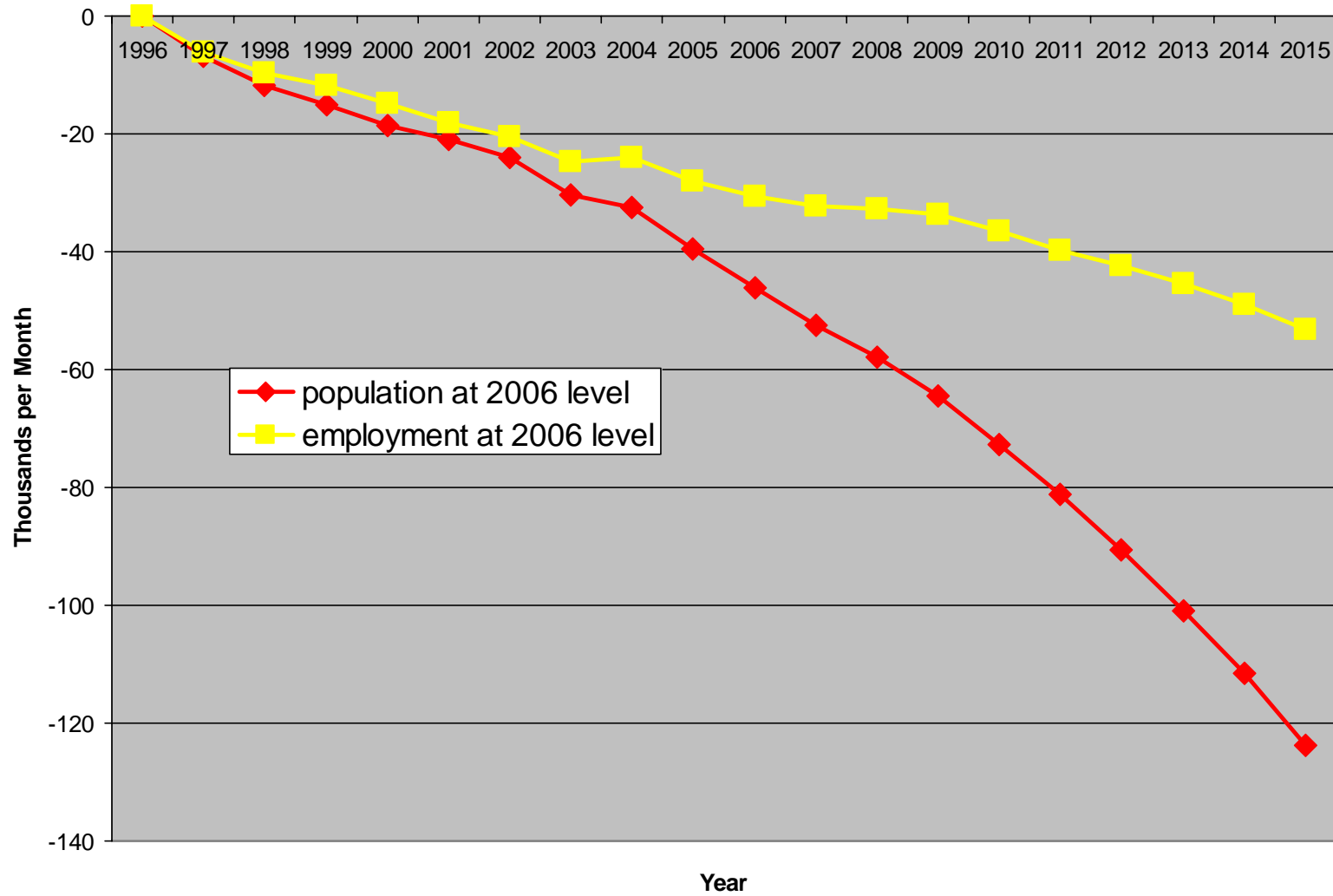
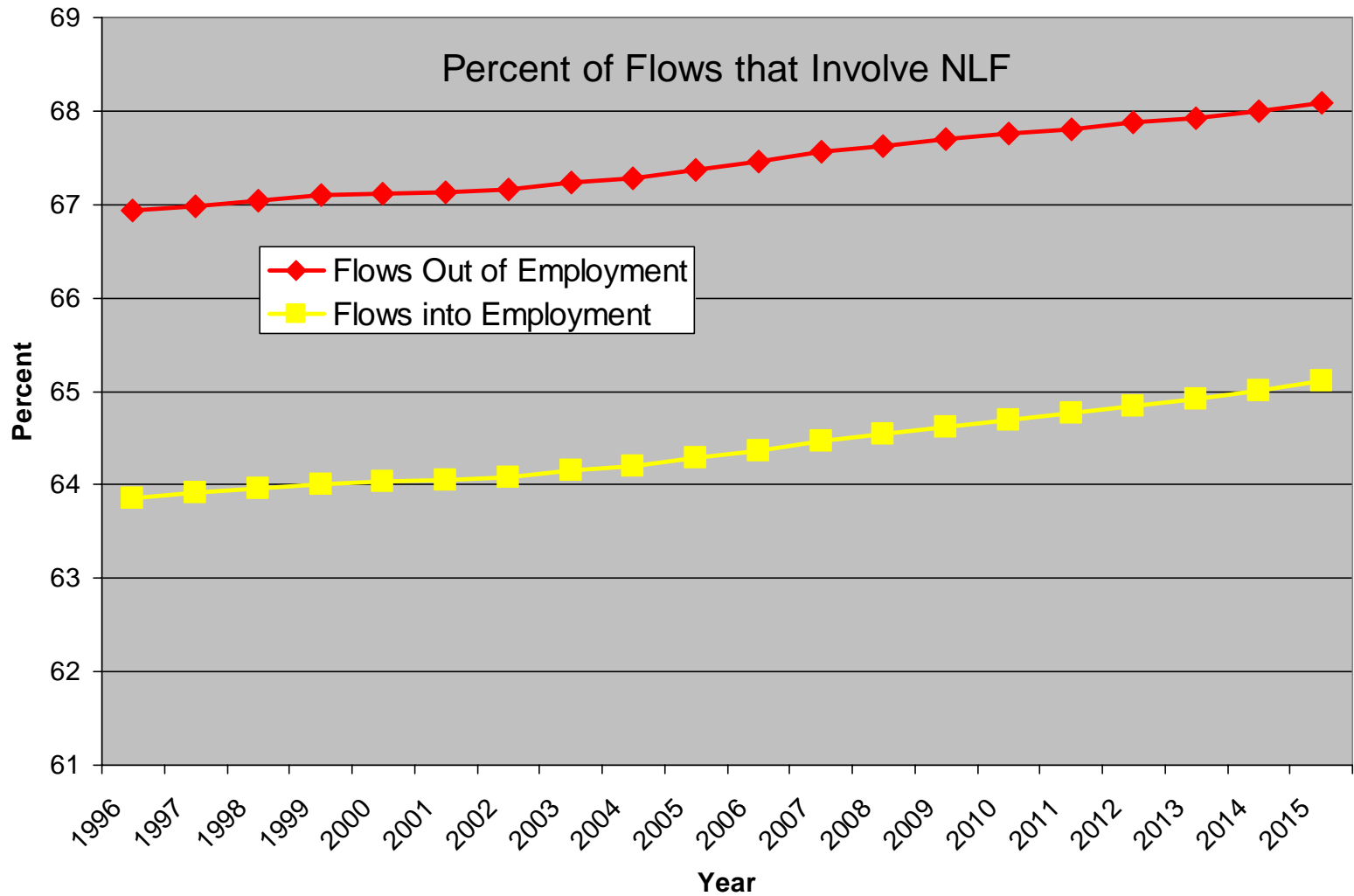How has aging affected worker flows across labor market states?

The accounting effect of aging on the aggregate EU hazard is small.
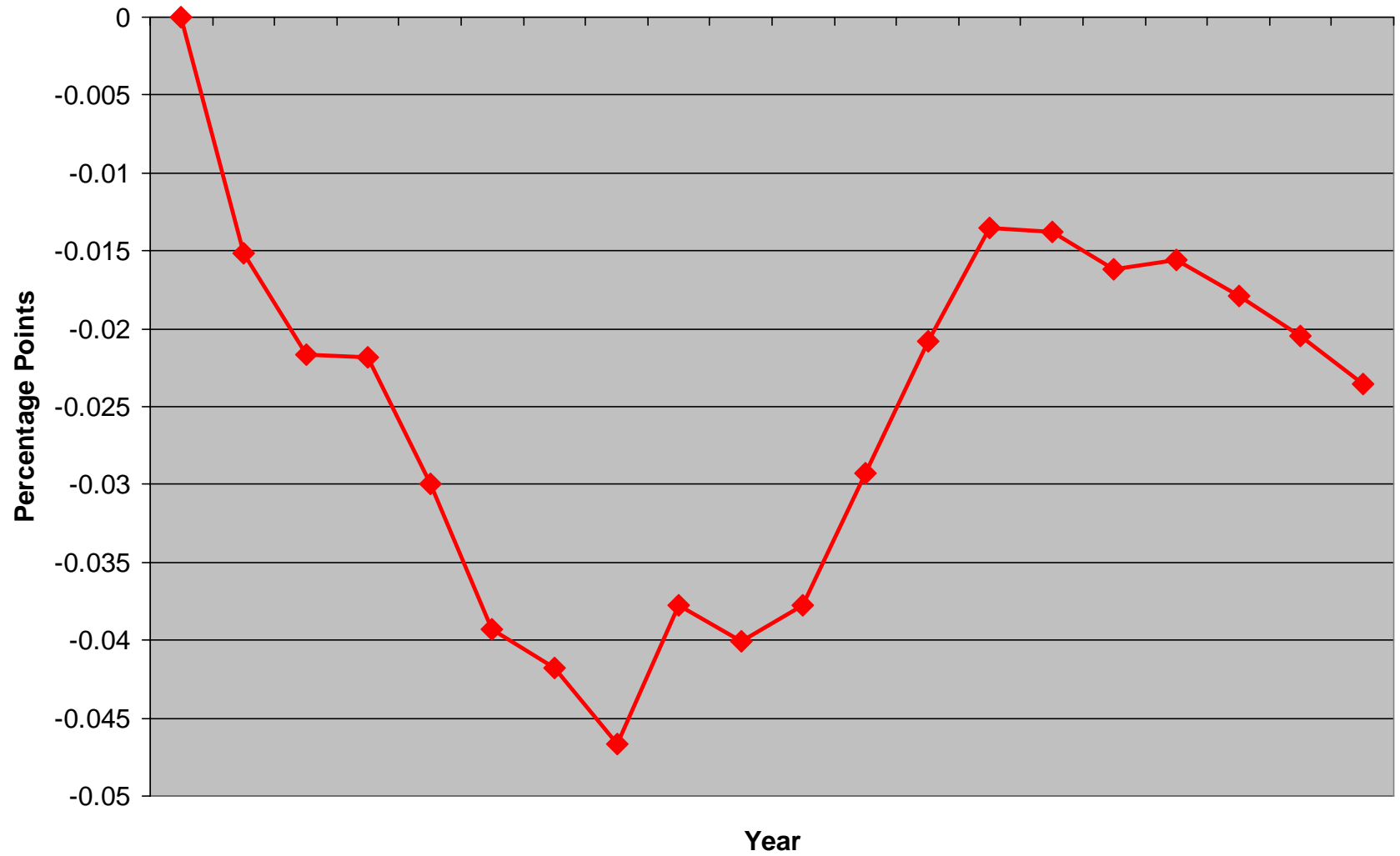(Relative to 1996)

But taking into account the lower levels of employment, the monthly flow will be reduced substantially.

Legend:
- population at 2006 level (red)
- employment at 2006 level (yellow)

Y-axis: Thousands per Month
X-axis: Year

# An increasing proportion of flows into and out of employment will involve NLF instead of unemployment.

Percent of Flows that Involve NLF

Legend:
- Flows Out of Employment
- Flows into Employment

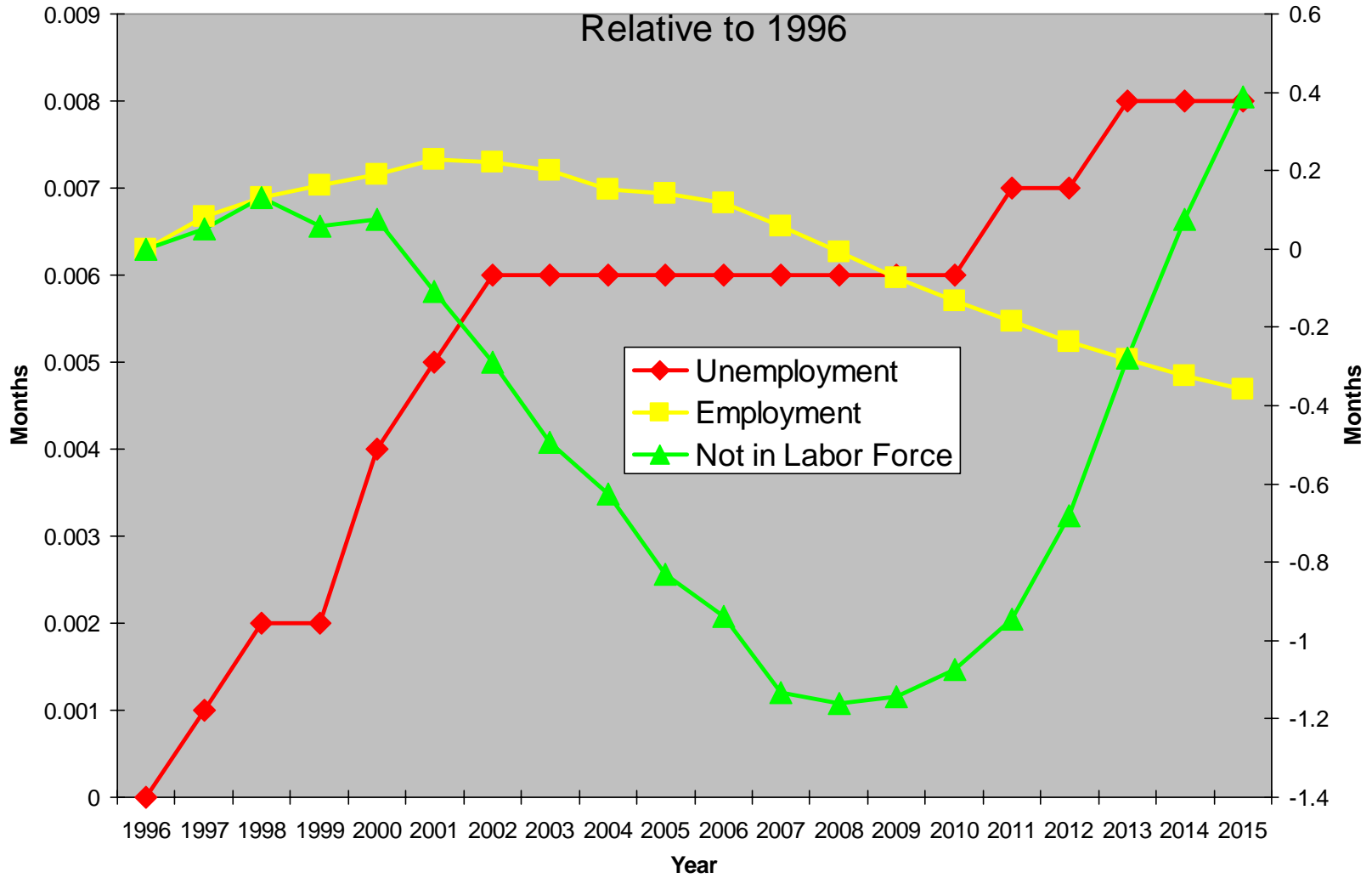X-axis: Year (1996–2015)
Y-axis: Percent (61–69)

The accounting effect of aging on the separation rate is small.

But because the level of employment falls due to aging, the reduction in gross turnover will be larger.
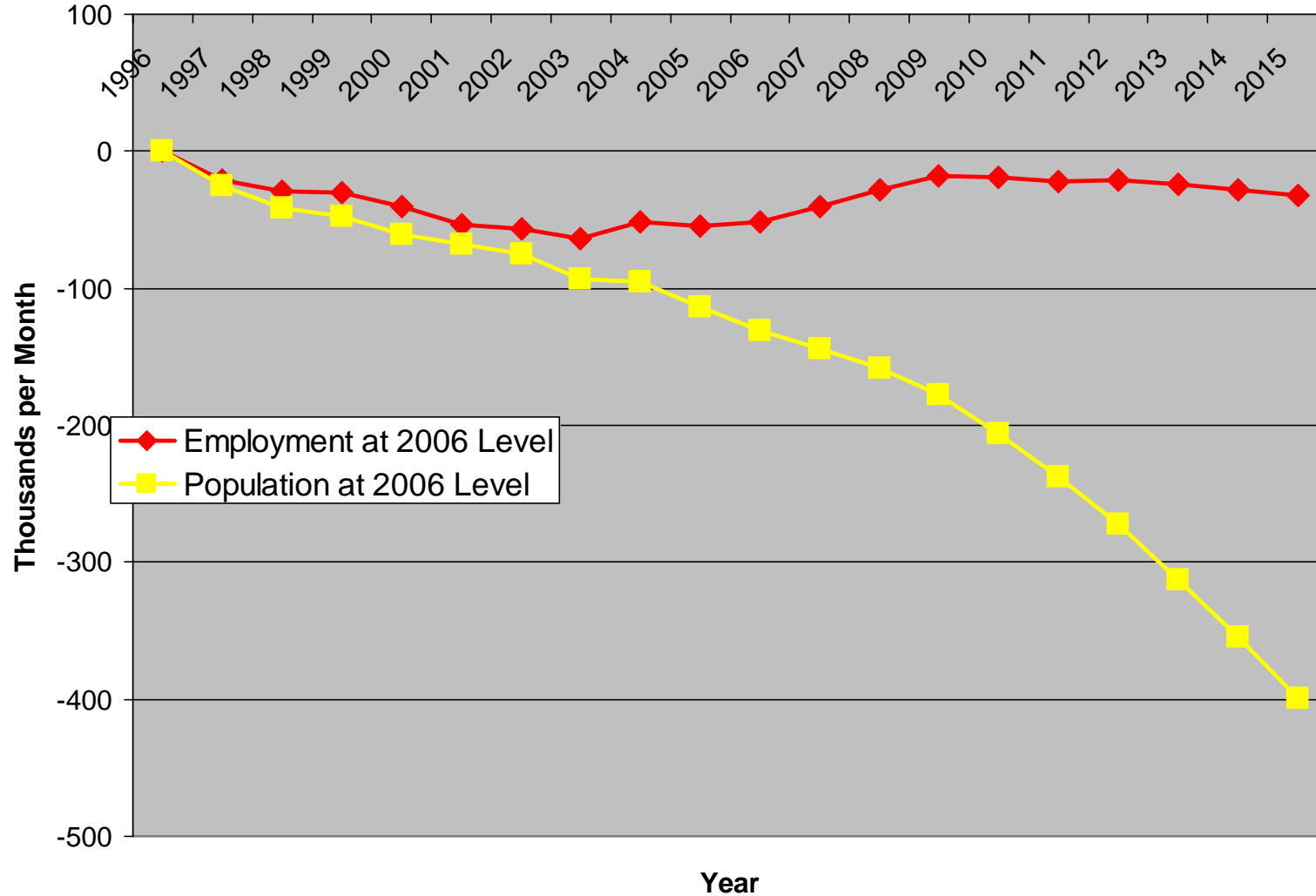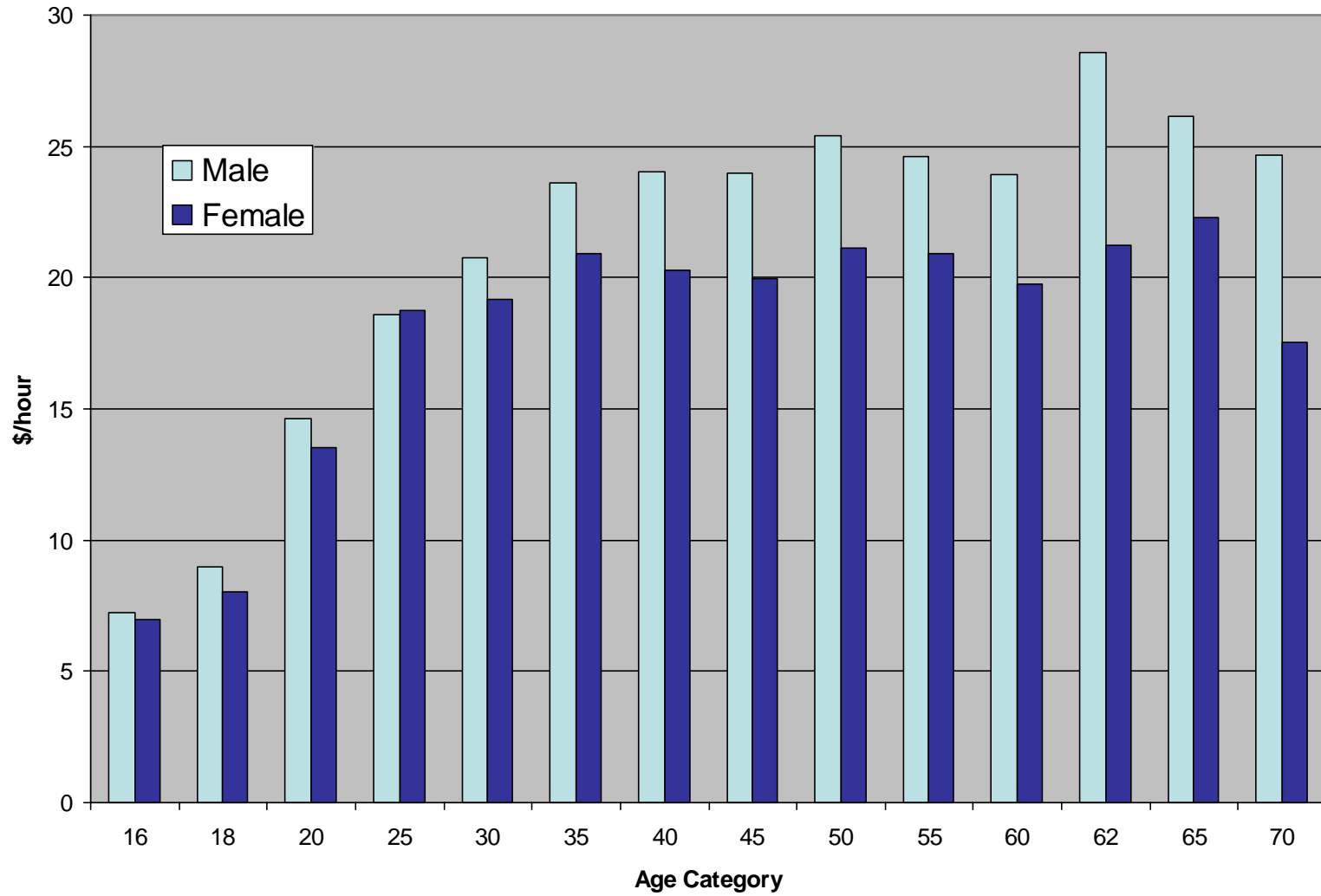
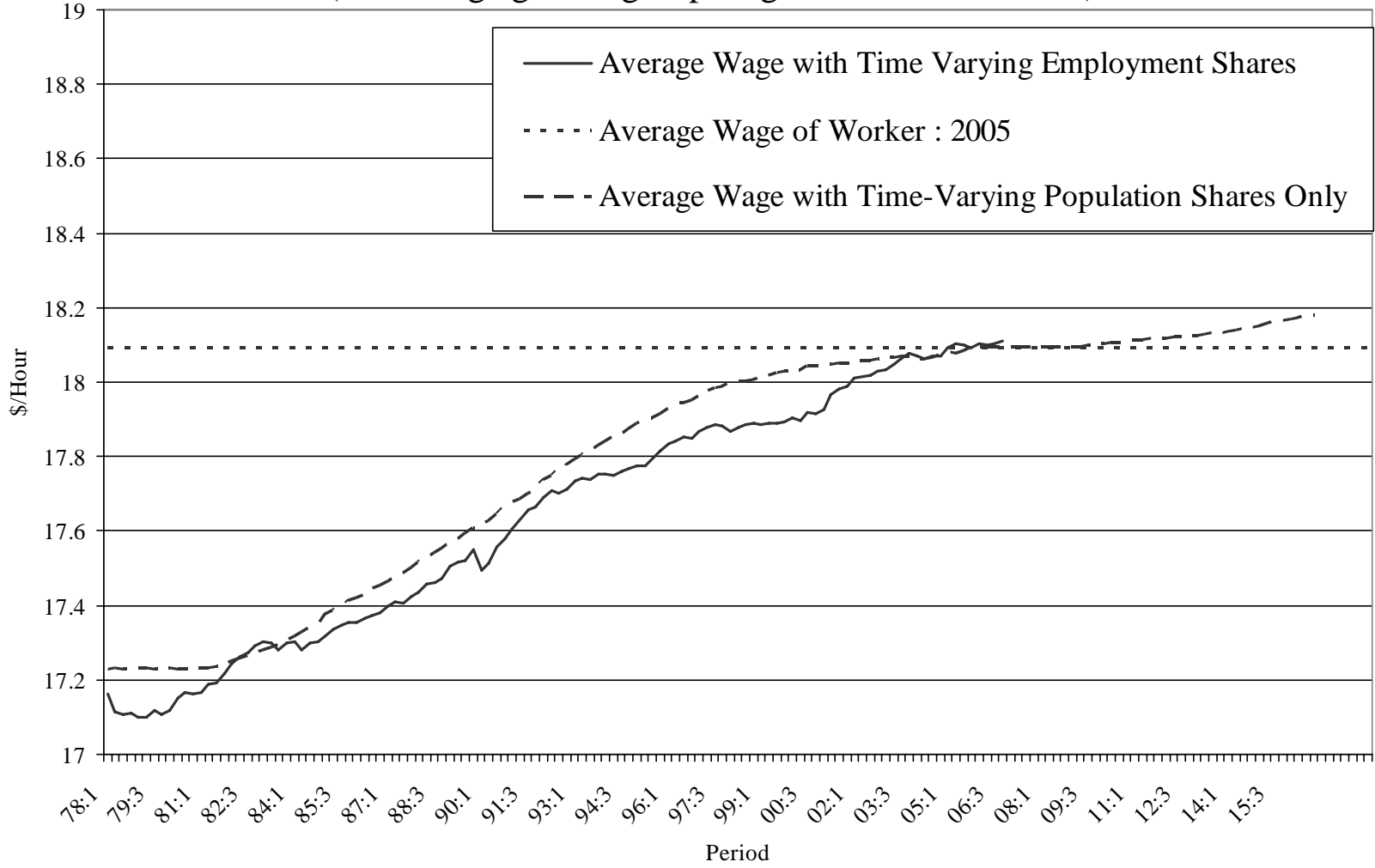Aging has little influence on the expected durations in each state, especially on the duration of unemployment

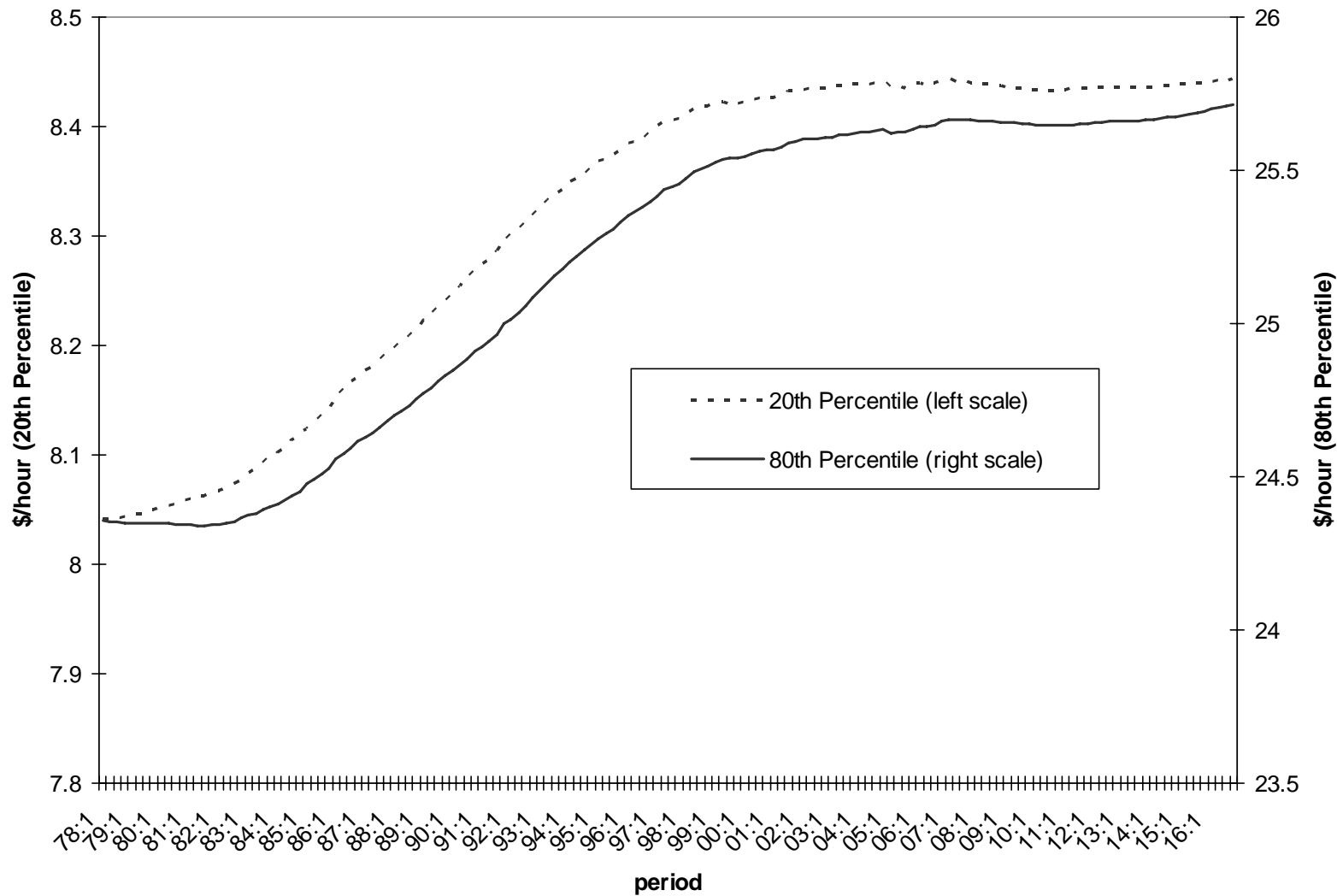# How does aging affect wage rates?

Age Earnings Profile (2005)

Effect of Changing Age Distribution on Mean Wage
(Within age/gender group wages set at 2005 means)

Legend:
- —— Average Wage with Time Varying Employment Shares
- ······ Average Wage of Worker : 2005
- – – – Average Wage with Time-Varying Population Shares Only
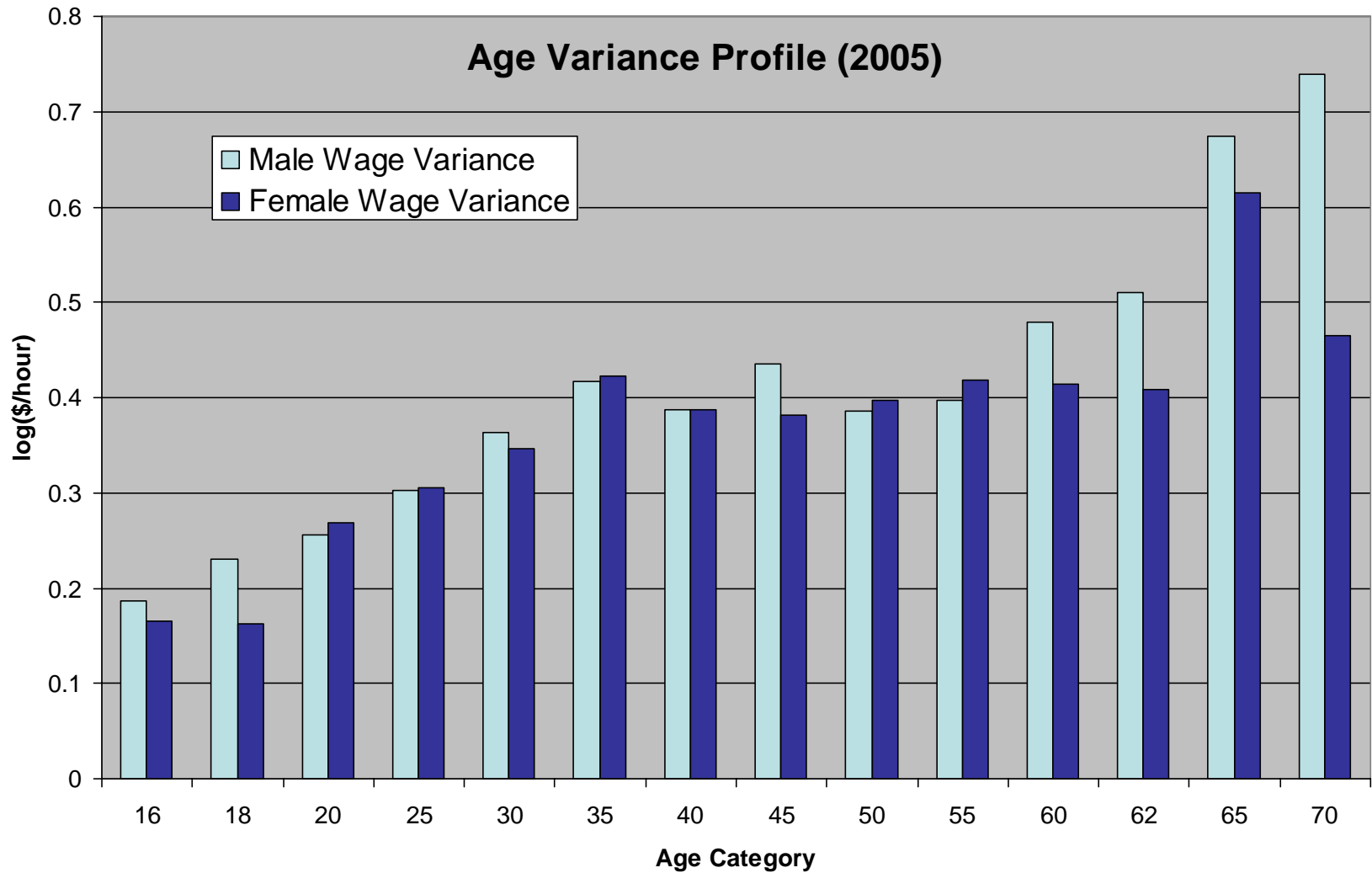
Y-axis: $/Hour (17 to 19)

X-axis: Period (78:1 to 15:3)

Wage Distribution: Effect of Population Aging

Variance

$$Var = \sum_a s_a [(mean_a - grandmean)^2 + \mathrm{var}_a]$$

$$= \sum_a s_a [(mean_a - \sum_a s_a mean_a)^2 + \mathrm{var}_a]$$

$$= \sum_a s_a (mean_a - \sum_a s_a mean_a)^2 + \sum_a s_a \mathrm{var}_a$$

For the most part, the within-group variances rise with age.

Age Variance Profile (2005)

The direct effect of aging on wage dispersion is modest.

Variance of log(wage); Within age/gender group variance set at 2005 values

- – – · Variance with Time-Varying Population Shares
- · · · · Variance : 2005
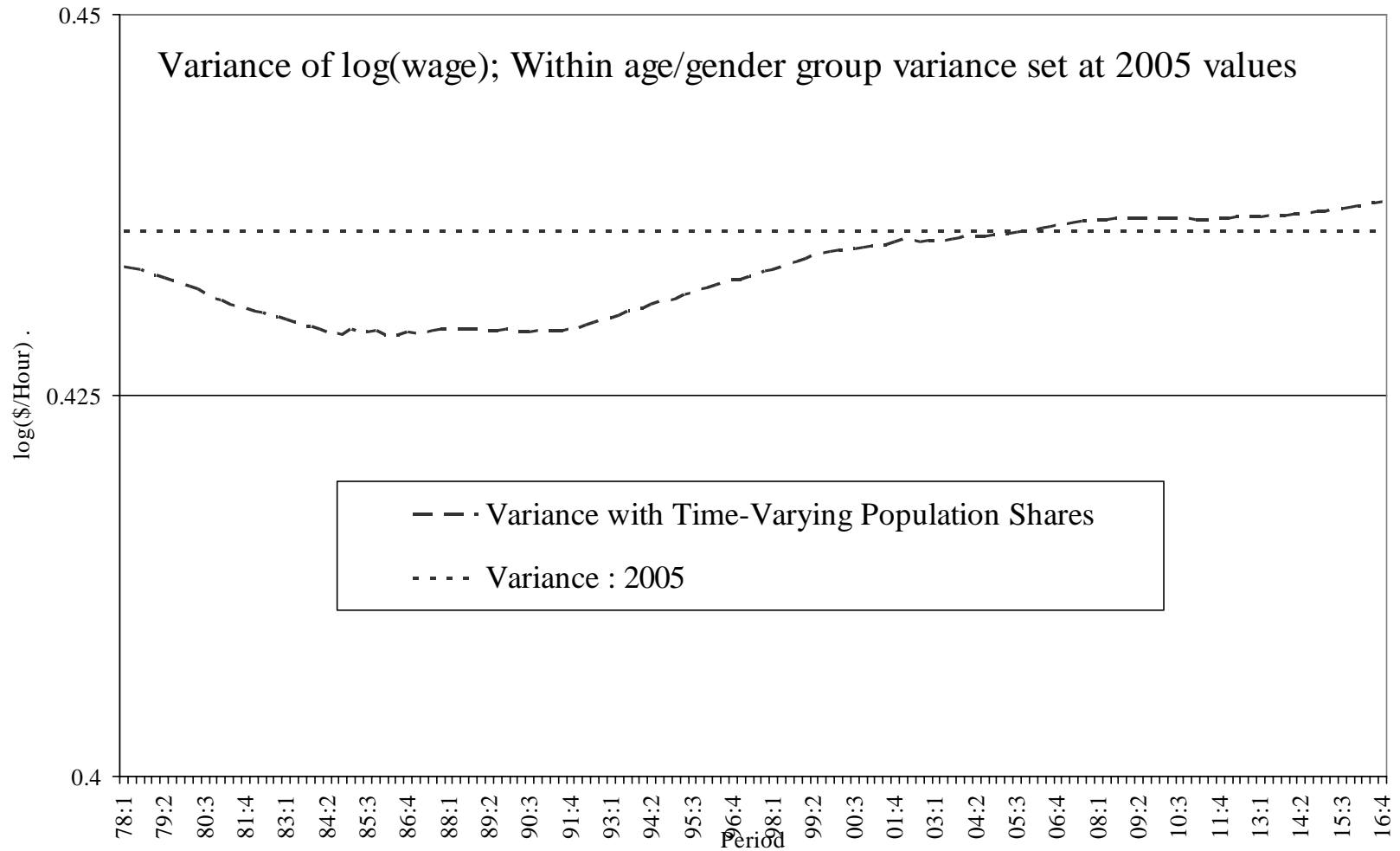
Reflecting offsetting components.