Is it Bad to be Green in a Greying Firm? An Analysis of the Impact of Postponed Retirements on Younger Workers' Wage Growth

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Prior Research

- The lump of labor conjecture hypothesizes that earlier retirements among older workers create more job opportunities for younger individuals

- Economic theory predicts this is false for the economy as a whole

- Existing empirical evidence has found either no correlation or a positive correlation between having more older workers in the economy and the number of young workers employed in the economy
  - Based on analysis of aggregate labor market data or workforce samples

Our Contribution

- Using German administrative employment data for all workers within the same establishment we show gradual increases in pensionable age introduced in a 1992 reform had highly variable impacts across establishments because of pre-policy differences in worker age distributions.

- This variation serves as the source of identification for examining the influence of delayed retirements on wage growth among their colleagues

- This use of micro data allows us to investigate if there are underlying trends missed by aggregate analysis

Preview of Results

- We find some evidence of a negative impact of postponed retirements on wage growth of younger colleagues

- When comparing the more "prime age workers" and the younger newer entrants into the labor force we find no difference in the level to which their wage growth is effected.

- Raises the possibility of substitutablity in the production process

Data

- Linked-Employer-Employee Data (LIAB) [cross-sectional model 2 1993-2010 (LIAB QM2 9310)] and a custom extract from the Employment History data (BeH) to capture pre-policy establishment age distributions.
- The data include all the workers in each establishment in a given year
- Sample is based on all West German establishments with at least five employees that existed in 1990 and appear in the BeH data.
- The data is also restricted to full-time, regular employees working at their primary job who earn less than the social security threshold

Summary Statistics

Table: Summary Statistics

Variable	Mean	Std. Dev.	N
$share58pls_{jt}$	4.41	3.21	15,027,568
Daily Wage	102.00	29.43	15,027,568
Wage Percent Change	12.4	15.5	15,027,568

- Number of Unique Firms: 13,912
- Number of Unique Individuals: 4,801,418

Pensionable Age

- Before the 1992 Pension reform the official retirement age for men was 65

- However, the effective retirement age before the 1992 reform was 58

- Approximately 45% of men 59-years old self-identified as "retired"

- Only 20% of new pension claimants were age 65

1992 German Pension Reform

- First major reform since 1975

- Binding for first workers by 1996.

- Fast and large increase in pensionable age relative to US reform.

- Minimal private retirement savings in these cohorts

Empirical Strategy: OLS

OLS: $Y_{ijt} = \beta_1 share58_{jt} + \beta_2 X_{ijt} + u_t + \epsilon_{ijt}$

- Y_{ijt}: outcome of interest for individual i working in firm j in year t
  - Daily wage in Euros
  - Percent change in daily wage measured from year t-1 to year t

- $share58_{jt}$: share of individuals in establishment j in year t at least 58 years old

- Controls: industry, inflows, outflows, firm size, schooling, gender, occupational group, experience, year of hire, and state
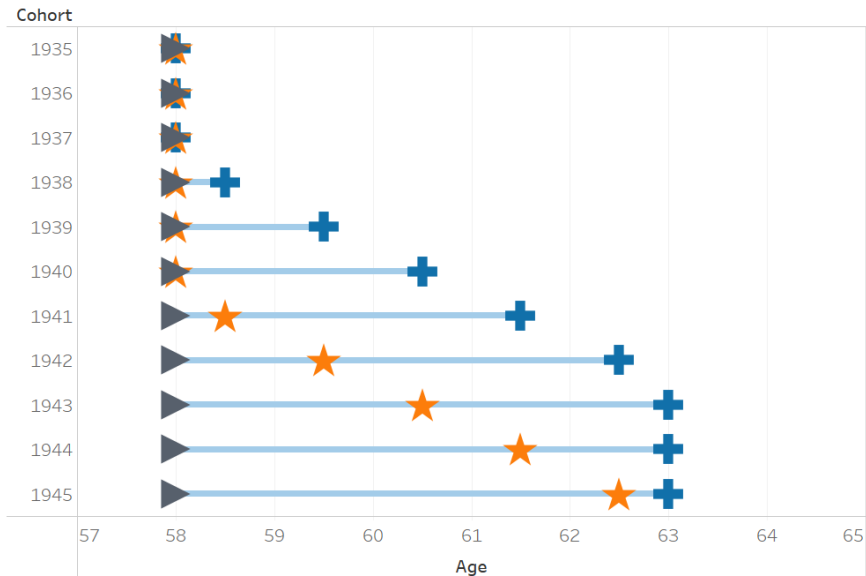
Shift-Share IV: Share

- Two potential sources of bias:
  - High ability younger workers may not apply to or may leave firms with a large share of older workers
  - Firms may have unobserved preferences in age distributions leading to endogeneity in the share of workers 58 and older

- Use the 1990 BeH data to construct a shift-share instrument

- Share: Pre-reform counts of workers in each cohort by sex in each of the establishments in our analytic sample.

- Shift: computed from the fitted values after estimating regressions for entries and exits using 1993-2010 data separately for each of 11 industry sectors by sex
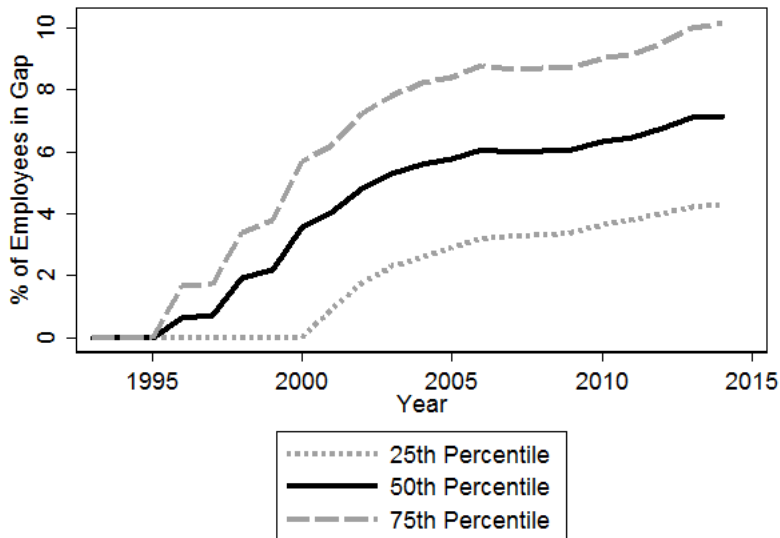
Variation in Instrument: Employment Share Ratios
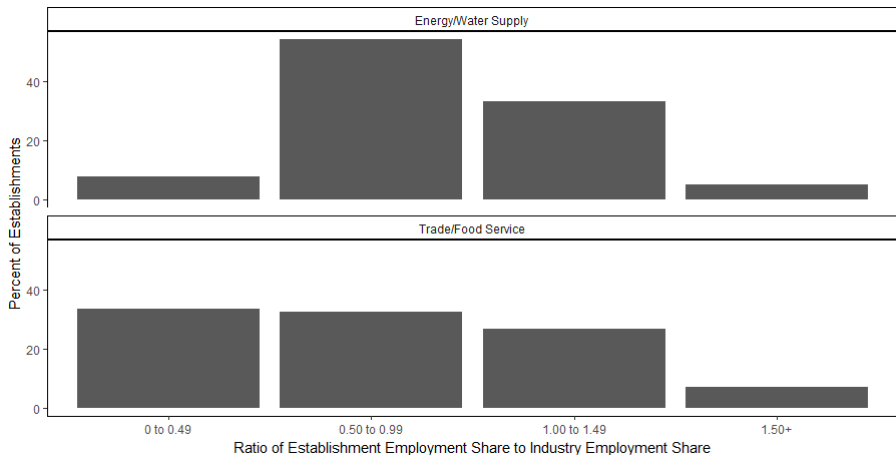
Variation in Instrument: Overall
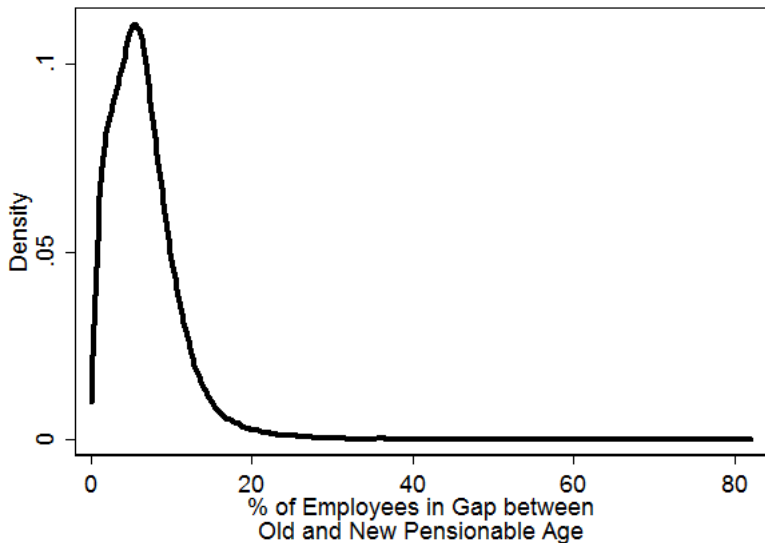
Variation in Instrument: By Year

Results: Continuous Measures

Table: Impact of Older Colleagues on Wages

	Wage[*]		Wage % Change[*]	
	(1)	(2)	(3)	(4)
Model	OLS	IV	OLS	IV
$share58pls_{jt}$	-0.324***	1.413***	0.000	-0.005***
	(0.077)	(0.374)	(0.000)	(0.002)
Mean	102.00		0.124	
SD	29.43		0.155	
N	15,027,568		15,027,568	

[*] Standard errors, clustered at the establishment level, are in parentheses. The unit of observation is person-year. Each regression includes a set of establishment characteristics (industry, inflows, outflow, firmsize, state), individual characteristics (education, sex, occupation, experience) and year dummies as controls. The instrumental variable regressions are estimated by two-stage least squares. One star, two stars, and three stars denote statistical significance at the 10-, 5-, and 1-percent confidence levels, respectively.

Table: Estimated Impact of Share of Older Workers in the Industry

	Wage[*]	Wage % Change[*]
	(1)	(2)
Model	OLS	OLS
$share58pls_{jt}$, Industry	-0.794***	-0.003
	(0.211)	(0.002)
Mean	102.00	0.124
SD	29.43	0.155
N	15,027,568	15,027,568

[*] Standard errors, clustered at the establishment level, are in parentheses. The unit of observation is person-year. Each regression includes a set of establishment characteristics (industry, inflows, outflow, firmsize, state), individual characteristics (education, sex, occupation, experience) and year dummies as controls. The instrumental variable regressions are estimated by two-stage least squares. One star, two stars, and three stars denote statistical significance at the 10-, 5-, and 1-percent confidence levels, respectively.

Results: Binary Measures
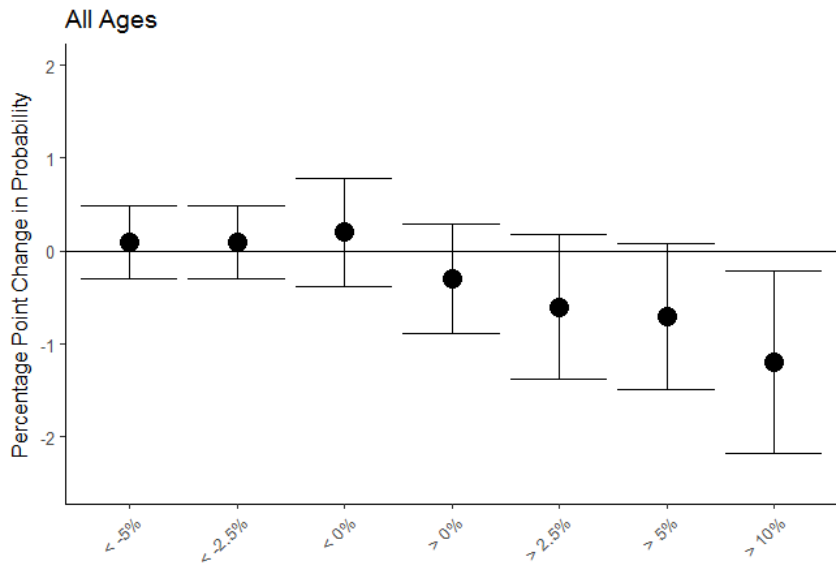
Results: Binary Measures
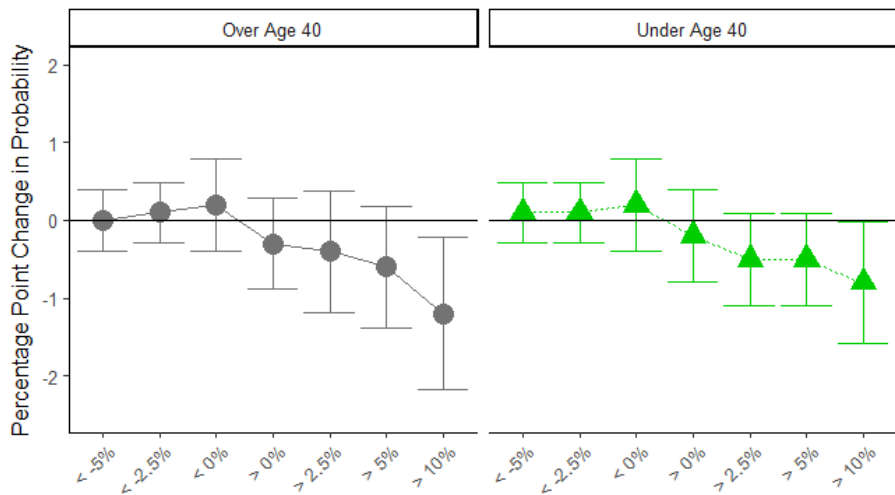
Conclusion

- We find some evidence of a negative impact of postponed retirements on wage growth of younger colleagues

- When comparing the more "prime age workers" and the younger newer entrants into the labor force we find no difference in the level to which their wage growth is effected.

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