Online Appendix to article in the Journal of Population Economics

The Impact of Pension Reform on Employment, Retirement, and Disability Insurance Claims

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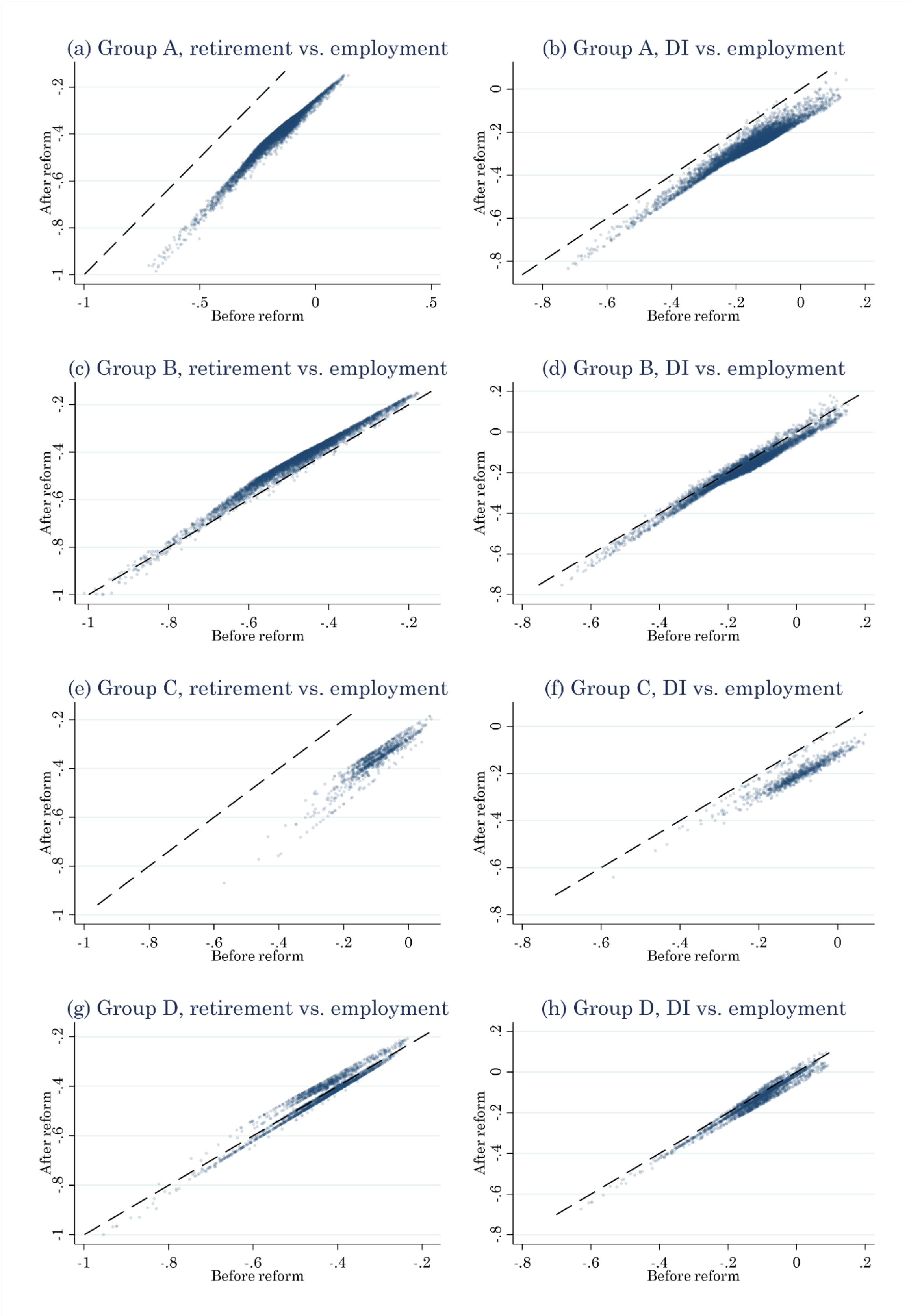

Figure A1. Economic incentives. Differences in log(net predicted present values of the income streams) between retirement and employment (to the left) and DI and employment (to the right) before and after the reform.
Note: The 45-degree lines correspond to no reform-generated incentive change. The cross-plots are based on a 15% random sample.

Table A1. Descriptive statistics

	Group A		Group B		Group C		Group D	
	1945–1947	1949–1951	1945–1947	1949–1951	1945–1947	1949–1951	1945–1947	1949–1951
Women (%)	19.2	22	15.7	18.3	91	87.7	84.2	80.9
Marital status (%)								
Married/ partner	74.9	71.5	75	72.4	74.2	74.2	72.9	71.9
Divorced	18.1	20	19.1	20.7	22.8	21.6	22.6	21.9
Never married	7	8.6	6	6.9	3	4.2	4.6	6.2
Education (%)								
Compulsory only	19.3	16.2	14.7	12.6	35	32.3	23.8	21.1
High school	62.4	65.1	57.6	55.9	60.7	62	62.3	60.7
Bachelor	13.4	14	18.6	21.3	3.5	4.2	11.7	13.9
Master or above	5	4.7	9.1	10.2	0.8	1.5	2.2	4.3
Av. gross earnings age 30–59 (€1,000)	72	72.4	78.5	79.8	29.1	28.5	30.3	29.8
Bank deposits at age 60 (€1,000)	46.2	46.6	62.6	58.3	29.2	28.4	30.6	33.2
Fraction with bank deposits above €32,700	35.8	34.9	38.3	37.4	29	26.6	26.1	27.5
Years with paid sick leave age 55–59 (%)								
None	85.4	85.8	85.2	84.6	64.4	62.9	75.9	76.9
1–2	8.7	8.5	9.8	10.3	19.2	20.8	15.5	15
All 5	5.9	5.7	5	5.1	16.5	16.3	8.6	8
Predicted annualized remaining lifetime income by state at age 63 (€1,000)								
Employment	30.1	33.5	30.7	32	20.3	21.6	20.8	21.1
Retirement	24.7	21.9	18.6	20.1	17.7	15.2	13.2	13.3
DI program	24.1	23.8	24.9	24.6	17.7	17.7	18.2	18.2
Outcome age 63 (%)								
Employment	58.9	75.7	76.8	80.4	54.9	74.8	74.5	77.4
Retirement	34.1	19	14	12.8	34.3	7.4	12.1	10.2
DI program	7	5.3	9.2	6.8	10.8	17.9	13.4	12.4
Number of observations	25,247	26,385	18,200	18,693	3,564	2,631	7,513	6,806

Table A2. Estimation results for M8 by financial and marital status (standard errors in parentheses)

	By size of deposits (age 60)				By earnings (age 30–59)		By marital status (age 60)		
	All	Low	High	Very high	Low	High	Married	Divorced	Never married
Predicted state income (NPI actual)	3.314 (0.119)	3.405 (0.150)	3.169 (0.197)	3.111 (0.338)	3.257 (0.162)	3.550 (0.178)	3.380 (0.140)	3.281 (0.274)	3.303 (0.424)
<u>Retirement</u> Access to own pension wealth	0.013 (0.035)	0.041 (0.045)	−0.032 (0.057)	−0.015 (0.095)	0.274 (0.050)	−0.288 (0.053)	0.031 (0.041)	−0.070 (0.082)	−0.102 (0.134)
<u>DI program</u> Access to own pension wealth	−0.272 (0.037)	−0.293 (0.045)	−0.222 (0.069)	−0.168 (0.121)	−0.354 (0.047)	0.041 (0.068)	−0.288 (0.045)	−0.240 (0.077)	−0.245 (0.163)
Log likelihood	−77238.9	−50624.2	−26540.7	−8792.2	−41703.0	−35330.2	−56052.9	−15433.9	−5536.3
Observations	109,039	71,253	37,786	12,625	54,519	54,520	79,899	21,745	7,395

Note: High deposits are defined as deposits above 3 BA, approx. half of average annual full-time earnings (34.6 % of the observations). Very high deposits are defined as deposits above 10 BA High earnings are defined as earnings above the median (11.6 % of the observations). All models include cohort-fixed effects (with 1947=1949), group-fixed effects, and the variables listed in Table A1 related to gender, marital status, education, past earnings, sickness absence, bank deposits, and pre-reform and post-reform state-specific NPI (except variables used to construct the respective samples).

Table A3. Estimated marginal effects based on OLS – 1947 cohort

	Group A – M3			All groups – M8		
	Employment	Retirement	DI	Employment	Retirement	DI
Observed 1947-cohort	0.573	0.358	0.068	0.661	0.251	0.088
Predicted by M3/M8	0.573	0.358	0.068	0.664	0.244	0.092
+ 10% employment income	0.684	0.262	0.054	0.772	0.146	0.082
	[+0.111]	[−0.096]	[−0.014]	[+0.107]	[−0.097]	[−0.010]
	(+19.4%)	(−26.8%)	(−20.6%)	(16.1%)	(−39.9%)	(−10.9%)
+ 10% retirement income	0.545	0.397	0.058	0.636	0.275	0.089
	[−0.028]	[+0.039]	[−0.010]	[−0.029]	[+0.032]	[−0.003]
	(−4.9%)	(+10.9%)	(−14.7%)	(−4.4%)	(+13.2%)	(−3.3%)
+ 10% disability income	0.490	0.456	0.093	0.586	0.308	0.106
	[−0.083]	[+0.098]	[+0.025]	[−0.079]	[+0.065]	[+0.014]
	(−14.5%)	(+16.5%)	(+36.8%)	(−11.9%)	(+26.7%)	(+15.2%)
Observed 1947-cohort Group B				0.773	0.135	0.092
Predicted by M8				0.771	0.132	0.098
+ Gain of early access to pension wealth				0.781	0.138	0.081
				[+0.010]	[+0.006]	[−0.017]
				(+1.3%)	(+4.5%)	(−17.3%)
Observed 1947-cohort Group C				0.543	0.347	0.111
Predicted by M8				0.551	0.313	0.136
+ Loss of early access to pension wealth				0.541	0.306	0.153
				[−0.010]	[−0.007]	[+0.017]
				(−1.8%)	(−2.2%)	(+12.5%)

Note: Predictions are based on separate OLS models for each outcome, with explanatory variables as in M3/M8, respectively. Since OLS does not allow covariates that vary with alternatives, all models include two relative incentives variables; that is $\left[\log(NPI_2) - \log(NPI_1)\right]$ and $\left[\log(NPI_3) - \log(NPI_1)\right]$, both in actual and hypothetical (pre- and post-reform) values. Numbers in brackets show estimated marginal effects measured in percentage points, whereas numbers in parentheses show the effects measured in percent.