

The Role of Pension Wealth in the Start-up Decision of New Self-employed: Evidence from a Pension Policy Reform

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- Compensate self-employed the lack of collective pension income after retirement?

Literature in wealth & shift into self-employment

- Positive correlation in self-employment & wealth → liquidity constraints:

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- Small effect of financial wealth & positive correlation only exists in extremely wealthy households:
(Dunn et al. (2000) and Hurst et al. (2004))
- Endogeneity in wealth
- Exogenous wealth shocks, e.g winning a lottery, receiving an unexpected bequest:
(Lindh and Ohlsson (1996), Imbens et al. (2001) and Taylor (2001), Brown et al. (2010))

Literature in pension wealth & labor supply

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- Pension coverage reduces the likelihood to enter self-employment:
Zissimopoulos and Karoly (2007)

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- Exogenous shocks in pension wealth

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- A wage-employee, birth year = 1950, started working year = 1975, continuous participation, average wage from employment = 60000 euro/year,
the **retirement replacement rate: 67% → 63%**.

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- From 1996 to 2011: no other comprehensive nationwide systemic reforms of the pension system

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 - No household wealth shocks: receiving bequest, winning lottery
 - No education level, health condition, other personal characteristics
 - Cannot distinguish: entrepreneurs, solo consultants, farmers, farm owners and so on

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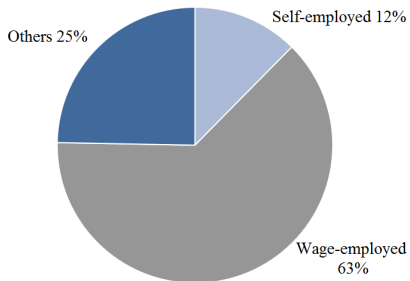
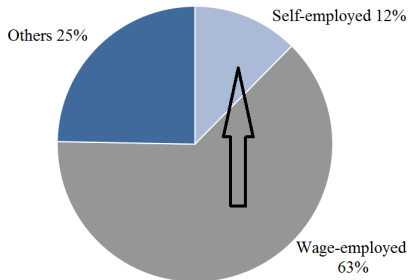


Figure : Proportion of self-employment and wage-employment in 2011

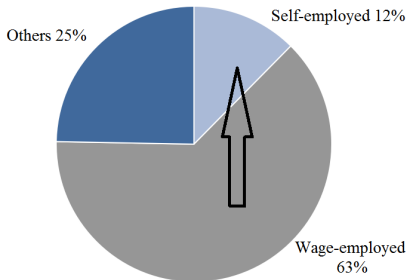
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- Keep wage-employed whose yearly wage $>$ 27000 euro

Self-employment transition rates

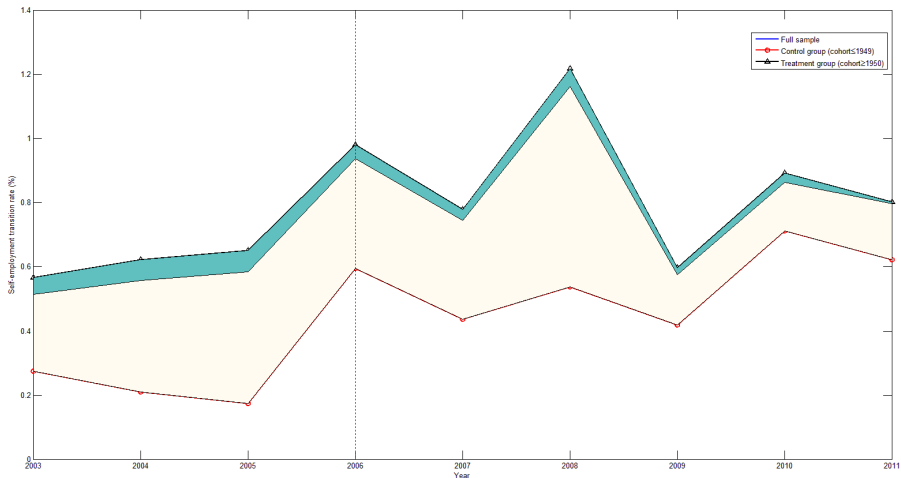


Figure : Self-employment transition rates of treatment group and control group

Mean-comparison tests, treatment group

Treatment group: cohort \geq 1950			
	Year 2006	Year 2005	p-value
	Mean	Mean	
Self-employment transition rate	0.92%	0.55%	0.000
Reduction in replacement rate due to reform	0.0275	0.000	0.000
Reduction in expected total pension wealth / 10^5	0.324	0.000	0.000
Lag income from wage-employment	48515	47167	0.015
Age	44.0	43.1	0.000
Tenure	16.9	15.9	0.000
Household size	3.559	3.574	0.257
Number of persons with income in a household	2.108	2.107	0.890
Indicator for relocation	0.051	0.052	0.417
Indicator for living in high urbanization	0.124	0.124	0.989
Indicator for immigrant	0.123	0.124	0.756
Indicator for unmarried	0.150	0.151	0.791
Indicator for married	0.787	0.788	0.799
Indicator for widowed	0.004	0.004	0.996
Indicator for divorced	0.059	0.057	0.393
Number of observations	17763	18002	

Table : Treatment group: Mean-comparison tests, year 2005 (before the reform) and year 2006 (after the reform)

Mean-comparison tests, control group

Control group: cohort \leq 1949			
	Year 2006	Year 2005	p-value
	Mean	Mean	
Self-employment transition rate	0.53%	0.19%	0.045
Reduction in replacement rate due to reform	0	0	/
Reduction in expected total pension wealth / 10^5	0	0	/
Lag income from wage-employment	52072	51973	0.315
Age	59.2	58.5	0.000
Tenure	25.5	24.8	0.008
Household size	2.329	2.381	0.034
Number of persons with income in a household	1.947	1.989	0.063
Indicator for relocation	0.023	0.029	0.161
Indicator for living in high urbanization	0.124	0.124	0.946
Indicator for immigrant	0.118	0.117	0.903
Indicator for unmarried	0.056	0.055	0.924
Indicator for married	0.839	0.836	0.715
Indicator for widowed	0.014	0.018	0.328
Indicator for divorced	0.094	0.088	0.412
Number of observations	2887	3001	

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Estimation Results (1)

- $y_{it} = \alpha_i + \beta_1 * \mathbf{TD}_{it} + \beta_2 * D_{\text{cohort} \leq 1949} + \beta_3 * D_{\text{year} \geq 2006} + \gamma * \mathbf{X}_{it} + u_{it}$,
where $t = 2003, \dots, 2011$
- \mathbf{TD}_{it} : treatment dummy. $\mathbf{TD}_{it}=1$ if $\text{cohort} \geq 1950$ & $\text{year} \geq 2006$

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Treatment dummy	OLS Estimate	Fixed-effects Estimate
Self-employed (se income \neq 0)	-0.0006	-0.0024*
Full-time self-employed (se income \neq 0 & wage income=0)	-0.0010**	-0.0010**

Note: Total number of observations is 213409.

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- Pr(shift into full-time SE): 0.12% (avg. in 2005) \rightarrow
0.12%-0.10%=0.02%

Estimation Results (2)

- $y_{it} = \alpha_i + \beta_1 * \text{Reduction in Replacement Rate}_{it} + \beta_2 * \dots\dots\dots$,
where $t = 2003, \dots, 2011$
- **Reduction in Replacement Rate**_{it}: instrumented by dummy for treatment

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	OLS	IV
Reduction in replacement rate	Estimate	Estimate
Self-employed (se income $\neq 0$)	-0.0861***	-0.0226
Full-time self-employed (se income $\neq 0$ & wage income=0)	-0.0260**	-0.0354**

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- Reduction in replacement rate in 2006: 0.03
- Pr(shift into full-time SE): 0.12% (avg. in 2005) \rightarrow
0.12%-2.6%*0.03=0.04%.

Estimation Results (3)

- $y_{it} = \alpha_i + \beta_1 * \text{Total Pension Wealth Reduction}_{it} + \beta_2 * \dots\dots\dots$,
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	OLS Estimate	IV Estimate
Total Pension Wealth Reduction / 10 ⁵		
Self-employed (se income ≠ 0)	-0.0070**	-0.0035
Full-time self-employed (se income ≠ 0 & wage income=0)	-0.0027**	-0.0054**

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- For reduction in 100,000 euro, Pr(shift into full-time SE) decreases by 0.54% percentage point (avg. in 2005: 0.55%)

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- Robustness check:
 - Weak evidence that anticipation effects exist only in 2005 (announced in July 2005)
 - No evidence for placebo effect

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- When pension wealth drops, wage-employed tend to stay longer in wage-employment to accrue that back