SOEP The German Socio-Economic Panel Study
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Private Pension Savings: *Influenced by Risk Aversion?*

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1. Introduction

Riester Pensions

- Since the introduction of private pensions in 2002 people are called on to provide privately for retirement in Germany.
- Riester pensions are part of private pensions along with individual savings by an individual. Riester pensions are a type of insurance subsidized by the state either through direct subsidies or tax relief.
- Besides Riester pension accounts, individuals save in other ways to provide privately for retirement (for example, life insurance, real estate investment opportunities).
- An individual's or household's ability to save affects income levels in old age; moreover, state subsidies financed by all employees during the accumulation phase also leads to inequality during the accumulation phase.

My contribution to the existing literature on savings

- I explain investments in private pensions and monthly retirement savings plans by using psychological measures such as risk aversion to suggest reasons for private savings besides purely economic measures.

2. State of Research

Economic Studies

- Based mostly on the Life Cycle Hypothesis (Modigliani / Brumberg 1956) that estimates savings rates as optimizing the outcome of permanent income, long-term consumption, and general wealth level.

  → has not been tested out empirically very well (Courant/ Gramlich/Laitner 1986)
- People are saving too little in the US (Lusardi 1999) and do not save during retirement in Western Welfare States.
- The savings behavior of private households remains largely a black box (Börsch-Supan / Essig 2007).

Behavioral Economics Approach

- Economic modeling on the basis of psychological experiments and measures.
- Inclusion of the institutional level as well as psychological measures as risk aversion and self control.

3. Risk aversion

Theoretical Convergence

- Risk aversion as one variable for explaining „non-optimal" outcome in decision making processes under conditions of uncertainty.
- Loss aversion: the fear of loss is greater than the desire for profits → people do not take risks.

Measurement in the SOEP

- Self-assed risk taking was measured only once in the SOEP in the year 2004.
- It is an ordinal variable in measuring self-assed risk taking in financial matters using an eleven- point scale.

Dependent variables

- *Riester pension*: dichotomous variable on the individual level (0=did not sign a Riester pension , 1=already signed a Riester pension).
- *Saving*: dichotomous variable at the household level (0= does not save from monthly income, 1=saves every month).

4. Empirical Results

Descriptive

- About 60 percent of households saves a share of its monthly income. Only 6 percent of individuals signed a Riester pension in 2004, whereas this number increased to nearly 20 percent in 2007 (Graph 1).
- Women are more risk averse than men and in general most people are highly risk averse (Graph 2).
- People who are risk-taker sign to a higher percentage a Riester pension than people who are risk averse. This pattern holds for women as well as for men. In all three stages women signed a Riester pension to a higher percentage.

Interpretation Table 1

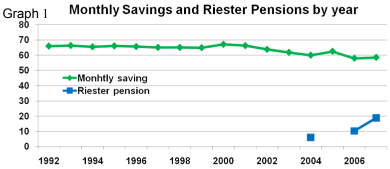
- Only a positive significant effect of self-assessed risk taking in financial matters on the probability to sign a Riester pension for men is estimated. It does not seem to play a role for women.
- The most influential variable is income; the odds of signing a Riester pension increases by about 65 percent compared to those in the highest income group holding all other variables constant.

Table 1: Logistic Estimates of Risk Aversion on Riester Pensions for employees being between 20 and 65 years old

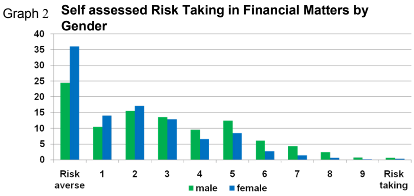
	Percent Change of Odds			
	Men		Women	
	I	II	III	IV
Risk taking in financial matters	5.8**	5.2*	4.4	3.9
Income (reference group: income quintile 4)				
Income quintile 1	65.6**	38.4	40.3**	40.8*
Income quintile 2	52.2**	29.5	40.9**	36.4*
Income quintile 3	5.8	-3.7	15.8	12.1
Age		-2.9**		-2.4**
Marital status (1=married)		86.8**		61.6**
Log likelihood	-1579.8	-1548.0	-1616.5	-1593.1
Pseudo-R-squared	0.01	0.03	0.01	0.02
Observations	4917	4917	4539	4539

Controlled for employment status (full time vs. Part time working), occupational status (employee, worker, civil servant), living in East- or West-Germany and educational status (less than high school, high school, higher than high school).

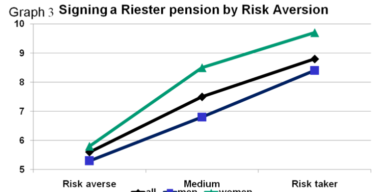
Graph 1 Monthly Savings and Riester Pensions by year



Graph 2 Self assessed Risk Taking in Financial Matters by Gender



Graph 3 Signing a Riester pension by Risk Aversion



Estimation Methods

- Logistic Regression on signing a Riester pension at the individual level.
- Logistic Regression on monthly saving at the household level. Risk aversion is estimated as the mean of wife's and husband's self-assessed risk taking in financial matters. All other individual variables are those of the household head.

Interpretation Table 2

- Model 1 and model 3 are favored over the more differentiated model 2 and 4.
- Risk taking in financial matters has a positive significant effect on monthly saving for couples as well as for singles. Age, employment status, occupational status, region and educational status does not have a significant effect on the decision to save for singles.

Table 2: Logistic Estimates of Risk Aversion on monthly household saving for employees being between 20 and 65 years old

	Singles		Couples	
	I	II	III	IV
Risk in financial matters (household level)	6.9*	5.6	12.8**	12.0**
Income (reference group: income quintile 4)				
Income quintile 1	-91.2**	-86.1**	-88.9**	-87.2**
Income quintile 2	-70.9**	-63.4**	-74**	-70.8**
Income quintile 3	-45.9**	-35.2*	-49.4**	-45.8**
Gender (male=1, female=0)	-12.5	-2.6	19.1*	26.3*
Age	0.2	0.4	-0.4	-0.7**
Employment status (reference: not working)				
Full time working		104.1		129.4**
Part time working		40.3		128.4*
Occupational status (reference: employee)				
Worker		-34.7**		-13.8
Civil Servant		-28.7		47.0*
Region (0=East Germany, 1=West Germany		-11.3		-23.8**
Educational status (reference: more than high school)				
Less than high school		-31.3		-36.7**
High School		-28.5		0.3
BIC	-7361	-7389	-29060	-29073
Log likelihood	-741.4	-730.4	-2185.2	-2162.6
Pseudo-R-squared	0.12	0.13	0.11	0.12
Observations	1251	1251	4035	4035

5. Conclusion and Future Research

Risk taking in financial matters has a positive effect on the decision to sign a Riester pension as well as on the decision to save from monthly income.

- The effect is significant for men in the case of signing a Riester pension but not for women. This might be a problem caused by the low number of people who already signed a Riester pension in 2004.
- The influence of risk taking in the estimation of monthly saving is greater for couples than for singles.
- Future research: Studies mainly in psychology emphasis the difference in risk taking within the couple and its influence on the savings decision of a household as a joint decision making process (Manser/Brown 1980, Qualls 1987, Szybillo 1979). Women are more risk averse than men who tend to invest into more risky assets. Hence the power relation within the household influences the investment behavior. This can be modeled using the SOEP and will be done as next step.