Schmollers Jahrbuch 129 (2009), 321 – 332
Duncker & Humblot, Berlin

The Riester Scheme and Private Savings: An Empirical Analysis based on the German SOEP

By Giacomo Corneo, Matthias Keese, and Carsten Schröder*

Abstract

Since 2002 the German government has promoted private retirement saving plans by means of special subsidies and tax incentives: the Riester scheme. This policy mainly targets low-income households. Using data from the German Socio-economic Panel, we scrutinize the impact of the Riester scheme on private savings. The introduction of the Riester scheme is treated as a natural experiment. Estimation results cast some doubts on the effectiveness of the Riester scheme and call for enhanced efforts to evaluate that policy.

JEL-Classification: D12, D14, H24, H31, I38

1. Introduction

In several OECD countries the government promotes private pension schemes by means of tax exemptions and subsidies. In Germany this has occurred since 2002 in form of so-called Riester contracts. In view of expected demographic changes leading to a dramatic increase of the ratio of retirees to workers, Riester contracts were introduced so as to provide the current working generation with enough disposable income during retirement without increasing future social security contributions.

Simple as it is, the economic rationale for such a policy has been questioned from various perspectives. First, subsidizing retirement plans cannot be Pareto improving since some of the taxes required to finance it are paid by households who do not benefit from those subsidies.[1] Second, like any subsidy, the one associated with Riester contracts distorts relative prices and creates a deadweight loss. Third, entry in the market for Riester contracts is restricted, which makes it easier for insurance companies to collude. Fourth, there are

* We thank Viktor Steiner and participants of the Erich-Schneider Seminar in Kiel for useful suggestions.

[1] As is well known from theory, a transition from a pay-as-you-go to a funded scheme cannot yield a Pareto improvement unless special externalities or other market imperfections are present. See Breyer (2001) and Corneo / Marquardt (2000).

costs of conceptualizing, certifying and advertising Riester products, controlling whether people are eligible for the subsidy, comparing the relative merits of offered contracts, and settling disputes between insurers and clients.

The crucial issue about tax-favored retirement plans is, however, their impact on private savings. If aggregate savings are unaffected, such a policy is neutral with respect to the wealth accumulated by the current working generation at retirement age. In that case, tax-favored retirement plans do not increase future national income i.e. the size of the pie which retirees and workers will share is unaffected. Conversely, if that policy increases aggregate savings, the current working generation will have more wealth at retirement age, its income will be higher, and it will be possible to avoid significant increases in contribution rates.

The extent to which tax incentives and subsidies increase savings is an empirically unresolved issue. For the eligible households, even the theory does not offer a clear prediction because of countervailing income and substitution effects from a savings subsidy.[2] Furthermore, subsidizing private pension schemes may alter the saving behavior of non-eligible households, firms, and the public sector.

At first glance, about 11 million Riester contracts signed until the end of March 2008 (Federal Ministry of Labour and Social Affairs, 2008) suggest that the savings of eligible households strongly increased. However, the sheer number of contracts is not sufficient to make that inference: eligible households might have replaced non-subsidized savings with subsidized ones. Evidence from other countries suggests that private savings are often diverted by tax-favored schemes.[3]

The current study focuses on low-income households, which is the group with the largest subsidies in relative terms. Moreover, low-income households' ability to substitute non-favored with subsidized contracts is arguably below average, be it because of their low financial literacy or because they save little. If a mobilization effect of the Riester scheme exists, it should be most pronounced in the case of low-income households.

We use data from the German Socio-Economic Panel (SOEP), and interpret the introduction of the Riester scheme as a natural experiment affecting the saving propensity of a treatment group relative to a control group.[4] Our approach allows for several variations concerning group composition, the set of conditioning variables, and the estimation method. These variations serve as a device for checking the robustness of our results.

---

2 For a microeconomic analysis of the Riester scheme, see Prinz et al. (2003).

3 See Antolín et al. (2004, Annex 2) for an overview of the results. The literature mainly deals with the US experience.

4 See Blundell / Costa Dias (2000) for an overview of the methods.

2. The Riester Scheme

The Riester scheme started operating in 2002. Beneficiaries receive allowances (a basic allowance and child allowances) or are granted income tax deductions. The allowance is paid when a minimum saving effort is achieved. The allowance and the personal saving effort must add up to a total saving amount, which is proportional to the individual's income subject to social insurance contributions.[5]

A remarkable portion of the active population in Germany is eligible – with estimates reaching 36 millions (Bräuninger, 2005) – including basically all compulsorily insured persons in the German public pension system, public servants, trainees, individuals in the mandatory military or social service, and the recipients of some types of public transfers. Usually, persons that are not statutorily insured in the mandatory public pension system are not eligible. This group of persons includes marginal employees and students, social welfare recipients, senior citizens receiving a pension, and persons receiving disability benefits.[6]

Besides allowances and tax reliefs, Riester contracts may be advantageous for other reasons. First, Riester contributions, allowances and proceeds are subject to downstream taxation, so that taxpayers can benefit from tax deferral. Second, after-retirement income is usually lower than pre-retirement income. As the German income tax is progressive, households profit from a decline in their personal effective tax rates (Börsch-Supan / Wilke, 2003). Third, there are special provisions in case of unemployment that protect the accumulated wealth against garnishment.

3. Econometric Model and Data

We scrutinize the impact of the Riester scheme on households' saving propensities by means of a treatment analysis, comparing pre- and post-reform propensities to save for two groups, a treatment group (TG) and a control group (CG).[7]

[5] The minimum saving amount is defined as a share of the income subject to social insurance contribution of the previous year including the allowances. Börsch-Supan / Wilke (2003) provide a detailed introduction to the German pension system and its recent reforms, including the Riester scheme.

[6] However, eligibility regulations are very detailed and include a broad range of exemptions. For further details see Federal Ministry of Labour and Social Affairs (2006).

[7] Baumgartner / Steiner (2006) discuss the limitations of such a treatment analysis. A requirement for the validity of treatment analysis is that the socioeconomic characteristics of the treatment and the control group are inter-temporally stable, or that compositions change similarly. Overall, group compositions do not show remarkable structural changes. However, all groups age slightly over the observation period. For details, see Corneo et al. (2008).

We use the year 2000 as the pre-reform point in time and consider three post-reform years, from 2004 to 2006.

Income – our proxy for the subsidy ratio – serves as the classification criterion. The subsidy ratio is the public subsidy (allowances and tax deductions) divided by the total savings amount for additional old-age provision. It is a relative measure of the gain that the insured can realize thanks to the subsidy. Figure 1 shows subsidy ratios depending on the wage income of a sole earner. Compared to low-income earners, the subsidy ratio is much lower in the middle-income range. Whereas insured persons with low incomes especially benefit from direct allowances, high-income earners can benefit from tax deductions, explaining the U-shaped relationships between earnings and subsidy ratio.

Therefore, we assign households with an annual net income level of 25,000 Euros or below (reference year: 2002)[8] to the treatment group (TG). The control group (CG) are households with a net income between 35,000 and 45,000 Euros (reference year: 2002) and thus notably lower subsidy ratios.[9] We restrict the analysis to a special type of households, namely Riester-eligible married couples with two children living in the household. For pre- and post-reform years, for each and every household we check whether an adult household member is or was eligible (if the Riester scheme had existed in that period). All information is aggregated at the household level.[10]

Two dependent variables are available: a dummy variable that indicates whether a household saves or not (SOEP variable "monthly savings"), and the saving ratio (SOEP variable "monthly amount of savings" divided by "household net income").[11] We include several indicators of the financial situation of the household as control variables.

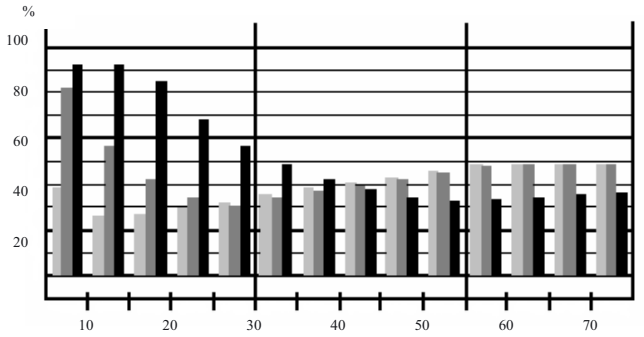
---

[8] Starting with the reference year 2002, the income level was adjusted to the other points in time according to the average income increase since 1992 by applying a growth rate that is equal to the average annual growth rate of the net income between 1992 and 2002 (2.05%) according to the German Sample Survey of income and expenditure of 2003 (Federal Statistical Office, 2003).

[9] The subsidy ratios displayed in Figure 1 refer to households with a sole earner and no further income. Due to the complexity of information that is required to calculate individual subsidy ratios, we take the assumption that households with a lower net income enjoy (ceteris paribus) higher subsidy ratios in the lower and middle income range as drafted in Figure 1 for the wage income.

[10] We also applied a second approach comparing a treatment group of households with eligibility for the Riester scheme vs. households without any eligibility. In addition, we specified both approaches by excluding certain observations, e.g. with an unemployed head of the household. The results are similar to the ones presented here. For details, see Corneo et al. (2008).

[11] The exact wording in the SOEP questionnaire reads as follows: "Do you usually have an amount of money left over at the end of the month that you can save for larger purchases, emergency expenses or to acquire wealth? If yes, how much?" (http: // www.diw.de / english / questionnaires / 33919.html). This variable has recently been used in econometric investigations as a measure of savings e.g. by Fuchs-Schündeln (2008).



Income subject to contributions in thousands of Euros p.a.
Light grey: single, no children.
Dark grey: single, one child.
Black: married, sole earner, two children.

Public subsidy ratio of the total savings amount for additional old-age provision (illustration from Deutsche Bundesbank, 2002, 29, modified).

Figure 1: Subsidy ratios of the Riester scheme

4. Empirical Results

4.1 Impact on the Probability to Save

We use a binary logit model to explain households' probabilities to save. Table 1 displays the logit estimates.[12] For all three inter-temporal comparisons (2000 vs. 2004, 2000 vs. 2005, and 2000 vs. 2006), estimates of three model specifications are provided. Specifications differ with respect to the set of control variables. Column A contains the estimates pertaining to a regression specification without any control variable, whereas column B reports estimates of a specification where socio-demographic household characteristics are included. Finally, column C reports estimates for a specification encompassing the full set of conditioning variables.

The additional mobilization effect of the Riester scheme is revealed by the coefficient of the interaction term that takes the value 1 in case of post-reform observations referring to treated households, otherwise it is zero. Hence, we would interpret a positive and significant coefficient as evidence in favor of effectiveness of the reform in creating new savings. Instead, irrespective of the regression specification and the chosen observation, the interaction term is statistically insignificant. This finding suggests that high subsidy ratios in the treatment group did not have an additional effect on these households' probabilities to save.

[12] A detailed description of the model can be found in the longer version of this paper. See Corneo et al. (2008).

Table 1: **Probability to save – logit estimation**

		2000 / 2004			2000 / 2005			2000 / 2006		
		A	B	C	A	B	C	A	B	C
Constant	*Const*	1.593*** *0.219*	–9.860*** *3.033*	–9.472*** *3.274*	1.593*** *0.219*	–12.617*** *3.266*	–12.748*** *3.609*	1.585*** *0.220*	–8.331*** *2.735*	–7.119** *2.893*
Observation point after reform (dummy)	D_{PR}	–0.137 *0.315*	–0.530 *0.376*	–0.534 *0.399*	–0.046 *0.330*	–0.207 *0.392*	–0.305 *0.418*	–0.386 *0.287*	–0.257 *0.313*	–0.406 *0.336*
Belonging to treatment group 1 (dummy)	D_T	–1.807*** *0.251*	1.678** *0.702*	1.559** *0.746*	–1.807*** *0.251*	1.212* *0.697*	1.121 *0.729*	–1.792*** *0.251*	0.238 *0.467*	–0.036 *0.496*
Interaction term	$D_{PR} \cdot D_T$	0.168 *0.373*	0.216 *0.437*	0.199 *0.462*	–0.142 *0.383*	–0.508 *0.454*	–0.429 *0.484*	0.055 *0.352*	–0.292 *0.404*	–0.157 *0.432*
Household income in 1000 Euro	$y/1000$		2.779** *1.140*	2.571** *1.219*		4.468*** *1.194*	4.242*** *1.271*		3.015*** *0.958*	2.591** *1.020*
Household income in 1000 Euro, squared	$[y/1000]^2$		–0.161 *0.252*	–0.138 *0.266*		–0.563** *0.257*	–0.542** *0.270*		–0.375** *0.179*	–0.314* *0.189*
Household head unemployed	D_{UN}		–1.379*** 0.392	–1.154*** 0.411		–0.992*** *0.365*	–0.840** *0.396*		–1.370*** *0.371*	–1.134*** *0.392*
Household head self-employed	D_{SE}		–0.443 *0.370*	-0.179 *0.416*		–0.093 *.413*	0.081 *0.466*		–0.409 *0.364*	–0.655 *0.439*
Household head public servant	D_{PS}		0.765 *0.556*	0.513 *0.574*		1.082* *0.577*	1.025* *0.611*		0.552 *0.501*	0.380 *0.524*
Household head pensioner	D_{PE}		–0.302 *1.264*	–0.077 *1.671*		–1.229 *1.633*	–0.733 *2.205*		–0.403 *1.107*	–0,118 *1.305*
Household head white-collar	D_{WC}		0.165 *0.250*	–0.002 *0.270*		0.380 *0.247*	0.265 *0.268*		0.053 *0.237*	–0.046 *0.256*
Household head student	D_{ST}		–2.560** *1.290*	–2.496** *1.271*		–0.736 *1.031*	–0.655 *1.002*		-1.453 *1.328*	–1.585 *1.287*
Household head other employment type	D_{OE}		–0.104 *0.353*	–0.170 *0.383*		0.120 *0.353*	0.128 *0.387*		0.092 *0.333*	0.117 *0.361*
Household head foreigner	D_{FO}		–0.556**	–0.369 *0.285*		–0.583** *0.259*	–0.267 *0.295*		–0.326 *0.250*	–0.195 *0.278*

Household head with univ. entr. qual.	D_{UEQ}		0.290 *0.305*	0.212 *0.320*		–0.218 *0.298*	–0.205 *0.316*		–0.312 *0.307*	–0.370 *0.325*
Household head with univ. degree	D_{UD}		–0.058 *0.313*	0.096 *0.332*		0.287 *0.316*	0.380 *0.337*		0.262 *0.319*	0.399 *0.339*
Household head female	D_{FEM}		–0.573** *0.238*	–0.608** *0.254*		–0.658*** *0.240*	–0.830*** *0.259*		–0.412* *0.234*	–0.612** *0.252*
Age of household head	*Age*		0.242* *0.131*	0.213 *0.143*		0.337** *0.142*	0.314** *0.158*		0.239** *0.118*	0.177 *0.124*
Age of household head, squared	$[Age]^2$		–0.003** *0.002*	–0.003* *0.002*		–0.005*** *0.002*	–0.005** *0.002*		–0.003** *0.001*	–0.003* *0.002*
Household from New Laender	D_{NL}		0.143 *0.246*	0.047 *0.260*		0.117 *0.253*	–0.076 *0.272*		0.142 *0.240*	0.093 *0.256*
Household owns a savings book	D_{BOOKS}			0.947*** *0.257*			1.379*** *0.271*			1.201*** *0.246*
Household has a building loan contract	D_{LOAN}			0.192 *0.212*			0.316 *0.216*			0.223 *0.201*
Household has a life insurance	D_{LIVE}			0.043 *0.242*			–0.054 *0.244*			0.050 *0.232*
Household owns securities	D_{SEC}			0.915*** *0.234*			0.865*** *0.232*			0.785*** *0.219*
Household owns business prop. / shares	D_{BPS}			–0.853** *0.389*			–0.357 *0.433*			–0.049 *0.434*
Household repays building loan / mortgage	D_{REPAY1}			–1.355*** *0.379*			–1.416*** *0.376*			–1.611*** *0.362*
Household has to repay credit loans	D_{REPAY2}			–0.414** *0.201*			–0.130 *0.211*			–0.135 *0.202*
Household owns real-estate	D_{ESTATE}			1.175*** *0.371*			1.273*** *0.370*			1.211*** *0.358*
Number of observations		713	713	713	717	717	717	743	743	743
Log Likelihood		–430.15	–375.85	–340.29	–430.41	–373.95	–331.45	–448.23	–405.46	–363.18
Pseudo R^2		0.11	0.22	0.29	0.12	0.24	0.32	0.11	0.20	0.28

Remarks: Logit estimation. Endogeneous variable: Saving decision (dummy: 1 = yes; 0 = no). *** / ** / * Significance on the 1 / 5 / 10-%-level.

Several control variables have a robust influence on the saving probability. The saving probability is increasing in income (at a decreasing rate in 2000 / 2005). A higher probability to save is also associated with ownership of various types of assets, or of real estate ($D_{BOOKS}, D_{SEC}, D_{ESTATE} > 0$). In contrast, unemployment and repayments of real-estate credit have a robust and negative influence on the probability to save ($D_{UN}, D_{REPAY1} < 0$). The same holds if the household head is female ($D_{FEM} < 0$). Other control variables have no robust effect on the probability to save.

4.2 Impact on the Saving Ratio

As saving ratios are restricted to the $0-1$-interval and are not normally distributed, we use a tobit model for quantifying the mobilization effect of the Riester reform on households' saving ratios. Again, we run three regressions for each intertemporal comparison, varying the set of explanatory variables according to the logit model outlined in the previous section. The results are displayed in Table 2. Again, the interaction terms are always statistically insignificant. In combination with the logit results, this suggests that the Riester reform has neither a mobilizing effect on the saving probability nor on the saving ratio. The effects of the control variables on the saving ratio are widely consistent with those from the logit estimation.[13]

5. Qualifications

All in all, our analysis casts some doubts about the effectiveness of the Riester scheme in fostering private savings. However, we refrain from drawing clear-cut conclusions and recommend much caution in interpreting the econometric results presented above.

A first caveat concerns our savings measure, obtained from the survey question reproduced in Footnote 11. It asks about a person's money which can be saved in order to acquire wealth. Apparently, someone who has signed a Riester contract should consider the saving amount required by that contract as money that is voluntarily saved to acquire wealth. If this was the way in which that survey question is interpreted by all persons, finding no effect of the Riester scheme on the propensity to save would suggest that savers simply shifted their savings from unsubsidized assets to subsidized ones. However, drawing such an inference may be unwarranted because some respondents

[13] To check for robustness of the results, we varied the group composition in the approach presented here as well as in a second approach. We also applied a probit model. The results are very similar to the ones presented here. For further details, see Corneo et al. (2008).

with a Riester contract may not consider the corresponding saving effort when answering that survey question. Those respondents might have "chosen" to forget the voluntary nature of the Riester scheme so as to avoid the temptation to withdraw money from the accumulated savings.

Whatever their rationale, it appears that some respondents with a Riester contract actually do not count their saving requirement as savings according to the SOEP question. This can be verified for the year 2006 since in that year the SOEP asked whether the respondent has a Riester contract. Many respondents that claimed to have a Riester contract declared zero savings.[14]

Does this ambiguity invalidate the inference of ineffectiveness of the Riester scheme? If every respondent in each year fully neglected her Riester saving effort, our interpretation of the results would be a completely different one: each Euro contribution to a Riester plan would be seen as one Euro of new savings. However, it seems hazardous to extrapolate from 2006 what might have occurred in the years before, e.g. because the saliency of the Riester scheme is likely to have declined over time.

A further qualification concerns the definition of the control group. If the Riester scheme had no effect on the saving propensity of the control group, evidence in support of a positive saving differential for the treatment group would suggest that the scheme was effective in creating savings. However, the Riester scheme might have caused a negative effect on the saving ratio of the control group, in which case a positive saving differential for the treatment group does not imply effectiveness with respect to aggregate private savings.

Our control group is formed by households with a low subsidy rate. If the Riester scheme is not self-financing – a rather realistic conjecture – households in that control group, together with the non-eligible households, are likely to be the fiscal losers of the Riester scheme: their tax burden increases. In that case, the introduction of the Riester scheme actually lowered the disposable income of the households in the control group, probably inducing them to save less.[15]

6. Conclusion

A pivotal criterion for judging the success of the Riester reform in Germany is whether it mobilizes private savings, especially among low-income households. This paper has offered an empirical analysis based on data from the German SOEP that begins shedding light on that question. Our results seem to suggest that, at best, the mobilization effect upon private savings has been small.

[14] A similar incongruenty can be observed with respect to other financial assets, e.g. building loan contracts.

[15] As a matter of fact, whenever the estimated coefficient on the post-reform dummy was statistically significant, it carried a negative sign.

Table 2: **Saving ratios – tobit estimation**

		2000 / 2004			2000 / 2005			2000 / 2006		
		A	B	C	A	B	C	A	B	C
Constant	*Const*	0.098*** *0.010*	–0.526*** *0.175*	–0.415** *0.162*	0.098*** *0.010*	–0.709*** *0.191*	–0.576*** *0.175*	0.097*** *0.010*	–0.492*** *0.160*	-0.345** *0.142*
Observation point after reform (dummy)	D_{PR}	–0.016 *0.015*	–0.031** *0.015*	–0.031** *0.014*	–0.014 *0.015*	–0.022 *0.016*	–0.029** *0.014*	–0.027* *0.014*	–0.022 *0.015*	–0.031** *0.013*
Belonging to treatment group 1 (dummy)	D_T	–0.106*** *0.013*	0.077** *0.033*	0.067** *0.031*	–0.108*** *0.013*	0.083** *0.034*	0.074** *0.030*	–0.107*** *0.013*	0.014 *0.026*	0.000 *0.023*
Interaction term	$D_{PR} \cdot D_T$	0.007 *0.020*	0.004 *0.020*	0.003 *0.018*	0.001 *0.020*	–0.023 *0.021*	–0.015 *0.019*	0.002 *0.020*	–0.013 *0.021*	–0.003 *0.019*
Household income in 1000 Euro	$y/1000$		0.192*** *0.059*	0.155*** *0.054*		0.321*** *0.064*	0.265*** *0.057*		0.206*** *0.056*	0.171*** *0.051*
Household income in 1000 Euro, squared	$[y/1000]^2$		–0.018 *0.011*	–0.012 *0.010*		-0.042*** *0.012*	–0.033*** *0.011*		–0.027*** *0.010*	–0.022** *0.009*
Household head unemployed	D_{UN}		–0.080*** *0.023*	–0.058*** *0.021*		–0.061*** *0.022*	–0.040** *0.020*		–0.090*** *0.023*	-0.057*** *0.020*
Household head self-employed	D_{SE}		–0.033* *0.020*	–0.026 *0.019*		–0.026 *0.023*	–0.027 *0.022*		–0.038* *0.021*	–0.058*** *0.020*
Household head public servant	D_{PS}		–0.014 *0.021*	–0.016 *0.019*		–0.010 *0.020*	–0.015 *0.018*		–0.014 *0.021*	–0.019 *0.018*
Household head pensioner	D_{PE}		0.004 *0.059*	0.003 *0.054*		–0.029 *0.090*	–0.004 *0.085*		–0.013 *0.058*	0.001 *0.052*
Household head white-collar	D_{WC}		0.003 *0.013*	–0.007 *0.012*		0.011 *0.013*	0.001 *0.012*		–0.001 *0.013*	–0.006 *0.012*
Household head student	D_{ST}		–0.152** *0.077*	–0.139** *0.069*		–0.092 *0.063*	–0.078 *0.055*		–0.123 *0.084*	–0.117 *0.071*
Household head other employment type	D_{OE}		0.005 *0.020*	–0.001 *0.018*		0.011 *0.020*	0.009 *0.018*		0.001 *0.020*	–0.001 *0.018*
Household head foreigner	D_{FO}		–0.031** *0.015*	–0.020 *0.014*		–0.037** *0.015*	–0.016 *0.014*		–0.021 *0.015*	–0.013 *0.014*

Household head with univ. entr. qual.	D_{UEQ}		0.016 *0.015*	0.014 *0.013*		–0.005 *0.015*	–0.004 *0.013*		–0.016 *0.016*	–0.015 *0.014*
Household head with univ. degree	D_{UD}		0.005 *0.015*	0.004 *0.014*		0.020 *0.015*	0.019 *0.014*		0.020 *0.016*	0.018 *0.014*
Household head female	D_{FEM}		–0.040*** *0.013*	–0.037*** *0.012*		–0.037*** *0.013*	–0.041*** *0.012*		–0.011 *0.014*	–0.018 *0.012*
Age of household head	*Age*		0.012 *0.008*	0.008 *0.007*		0.014* *0.008*	0.009 *0.008*		0.012* *0.007*	0.007 *0.006*
Age of household head, squared	$[Age]^2$		–0.000* *0.000*	–0.000 *0.000*		–0.000** *0.000*	–0.000* *0.000*		0.000** *0.000*	0.000 *0.000*
Household from New Laender	D_{NL}		0.013 *0.013*	0.013 *0.011*		0.014 *0.014*	0.007 *0.012*		0.014 *0.013*	0.013 *0.012*
Household owns a savings book	D_{BOOKS}			0.044*** *0.012*			0.065*** *0.013*			0.057*** *0.012*
Household has a building loan contract	D_{LOAN}			0.011 *0.009*			0.019* *0.010*			0.016* *0.009*
Household has a life insurance	D_{LIVE}			0.002 *0.011*			–0.006 *0.011*			-0.001 *0.011*
Household owns securities	D_{SEC}			0.044*** *0.010*			0.047*** *0.009*			0.050*** *0.009*
Household owns business prop. /shares	D_{BPS}			–0.012 *0.017*			0.020 *0.018*			0.023 *0.018*
Household repays building loan / mortgage	D_{REPAY1}			–0.093*** *0.014*			–0.095*** *0.014*			–0.112*** *0.013*
Household has to repay credit loans	D_{REPAY2}			–0.043*** *0.009*			–0.031*** *0.009*			–0.032*** *0.009*
Household owns real-estate	D_{ESTATE}			0.076*** *0.014*			0.083*** *0.014*			0.083*** *0.014*
Number of observations		713	713	713	717	717	717	743	743	743
Log Likelihood		96.16	151.25	217.49	72.50	131.29	206.76	74.27	114.61	199.76
Pseudo R^2		–1.32	–2.64	–4.24	–3.31	–6.80	–11.29	–3.03	–5.22	–9.84

Remarks: Tobit estimation. Endogeneous: Saving ratio. *** / ** / * Significance on the 1 / 5 / 10-%-level.

However, serious doubts about how to interpret our empirical findings remain because, first, the saving measure in the SOEP questionnaire might possibly be ill-suited for our purposes and, second, the assumptions underlying the treatment of the Riester scheme as a natural experiment might be untenable. While the first problem would lead us to underestimate the effectiveness of the Riester scheme, the second would lead us to overestimate it. Given such uncertainties and the potentially far-reaching consequences of the Riester scheme, further policy evaluations are highly desirable.

References

Antolín, P. / *de Serres,* A. / *de la Maisonneuve,* C. (2004): Long-Term Budgetary Implications of Tax-Favoured Retirement and Saving Plans, OECD Economic Studies 39.

Baumgartner, H. J. / *Steiner,* V. (2006): Does More Generous Student Aid Increase Enrolment Rates Into Higher Education?, Evaluating the German Student Aid Reform of 2001, DIW Berlin Discussions Papers 563.

Blundell, R. / *Costa Dias,* M. (2000): Evaluation Methods for Non-Experimental Data, Fiscal Studies 21 (4), 427 – 468.

Börsch-Supan, A. / *Wilke,* C. B. (2003): The German Public Pension System: How it Was, How it Will Be, Michigan Retirement Research Center Working Paper 041.

Bräuninger, D. (2005): Spürbare Rentenlücken trotz Reformen, Deutsche Bank Research, Aktuelle Themen, Demografie Spezial, Nr. 312.

Breyer, F. (2001): Why Funding is not a Solution to the "Social Security Crisis", IZA Discussion Paper 328.

Corneo, G. / *Keese,* M. / *Schröder,* C. (2008): Can governments boost voluntary retirement savings via tax incentives and subsidies? A German case study for low-income households, Economics Working Papers, Christians-Albrechts-Universität Kiel.

Corneo, G. / *Marquardt,* M. (2000): Public Pensions, Unemployment Insurance, and Growth, Journal of Public Economics 75, 293 – 311.

Deutsche Bundesbank (ed.) (2002): Monatsbericht Juli 2002, 54. Jahrgang, 7.

Federal Ministry of Labour and Social Affairs (ed.) (2006): Zusätzliche Altersvorsorge, Bonn.

Federal Ministry of Labour and Social Affairs (ed.) (2008): Über 11 Millionen Riester-Renten – 570.000 Neuabschlüsse im 1. Quartal 2008, http: // www.bmas.de / coremedia / generator / 26254 / 2008_06_02_riesterzahlen.html, access on 28 August 2008, 11:21.

Federal Statistical Office (ed.) (2003): Volkswirtschaftliche Gesamtrechnungen, Nettoeinkommen und Zahl der Haushalte nach Haushaltsgruppen 1991 bis 2002, Je Haushalt, Haushaltsmitglied und Verbrauchereinheit, Arbeitsunterlage.

Fuchs-Schündeln, N. (2008): The Response of Household Saving to the Large Shock of German Reunification, American Economic Review (forthcoming).

Prinz, A. / *Reichardt,* A. / *Wrohlich,* K. (2003): Mikroökonomische Analyse der "Riester-Rente", Wirtschaftswissenschaftliches Studium 7, 399 – 405.