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1. Introduction

The process of demographic change and the fact that the benefits of a growing proportion of pensioners must be financed by fewer and fewer contributors, poses major problems for the German pay-as-you-go pension scheme. For this reason, the 2001 pension reform entailed a reduction in the level of statutory pensions and strengthened the funded second and third pillars of old-age pension provision. The 'Riester pension', introduced in 2001, aimed at encouraging the accumulation of additional private pensions, and therefore created a voluntary but highly subsidized private pension supplement. The savings incentives - flat-rate benefits and tax breaks – created by the reform were intended to motivate people in the public retirement insurance scheme to compensate for reductions in relative statutory pension levels by paying into private pension funds.[1] State subsidizes for Riester pensions are substantial: Contributions made by people on low earnings and parents attract subsidizes of over 50 per cent - in other words, the state delivers more than half of the savings put aside by these groups of people.

How did these subsidies affect the savings behaviour of German private households? This paper uses the Riester pension as an ‘experiment’ that sheds light on how savings incentives work. Specifically, we are interested in public acceptance of the new pension, its dynamism over time and the determinants of supplementary private pension provision. We consider which sections of the population have joined the new subsidized pension scheme and try to identify factors which may dissuade people from participating. Finally, we are interested in whether saving for one particular purpose displaces saving for other purposes.

Evaluating the micro-level impacts of the Riester pension requires detailed household micro-data. Our analysis is based on a specifically designed and representative household micro dataset, the German SAVE-data that has been collected since 2001. The detailed information in the SAVE data about socio-demographic and psychological household characteristics as well as about the portfolios of German households allows for painting a detailed picture of old-age provision that extends existing analyses from governmental data sources substantially: First, we can analyse the development over time of the take up of Riester pensions by different sections of the population. Second, we are able to include other forms of private pension provision in addition to the subsidised pension component into our analysis. And third, the inclusion of detailed socioeconomic and psychometric information allows for learning about the motivational factors behind private old-age provision decision among German households.

[1] For a detailed description of the pension reform process in Germany see Börsch-Supan and Wilke (2004).

While the issues investigated in our paper are of evident policy interest and contribute to the discussion about the impact of old-age savings incentives in various countries (Börsch-Supan, 2003, 2004; Disney et. al., 2001), they are also closely linked to recent research in behavioural economics; they complement the existing wealth of laboratory experimental evidence on behaviour in complex dynamic decision situations with experiences from real-life decision situations, specifically old-age provision decisions. For example, our paper provides striking evidence that a strong acceleration in the dynamics of take-up of Riester saving only really kicked in after substantial simplifications had been made to the scheme. This contraindicates complex savings schemes which are not immediately understood by customers, and it shows that customers might be deterred be an excessive complexity of the pension product. In this line, Madrian und Shea (2001) have recently demonstrated that the decision for or against specific pension products depends to a large extent on how the different products are presented. As well, our findings reveal that, first, the dynamics differ by socio-demographic group and does not follow the incentive scheme in all cases, and, second, that the information about the pension system as such is a key factor in the participation decision – even if we control for a wealth of other socio-demographic and psychological characteristics. This is an indication for the importance of social peer effects, as Duflo and Saez (2003) have demonstrated based on US American data. It underlines as well how available information interacts with social groups (Lusardi, 1999), and that significant parts of the population lack the information that is necessary for taking a decision that is appropriate given their personal circumstances (Lusardi and Mitchell, 2006).

The remainder of the paper is structured as follows. Section 2 describes the SAVE data set. Section 3 discusses key institutional features of subsidised pension provision underlying actual pension trends from 2001 to 2006, and section 4 delineates these trends and their dynamics. Finally, section 5 looks at public acceptance of the Riester pension along a series of socioeconomic characteristics. Section 6 concludes.

2. The SAVE-Data

Taking as a basis the Dutch CentER Panel and the U.S. Health and Retirement Study (HRS), researchers of the University of Mannheim have cooperated with the Mannheim Center for Surveys, Methods and Analyses (ZUMA) and NFO Infratest (Munich) to produce a questionnaire that records households' saving and asset choice, their sociodemographic

characteristics as well as socio-psychological determinants of savings and old-age provision behavior, see Börsch-Supan and Essig (2005) and Schunk (2007).

The questionnaire consists of six parts which are presented in table 1. The first part explains the purpose of the study. Part 2 contains questions on the socio-economic structure of the household, including age, education and labor-force participation of the respondent and his or her spouse. Part 3 of the questionnaire introduces the first set of substantive questions. This part contains questions on saving behaviour and on how households deal with income and assets, including hypothetical choice tasks, questions on savings motives. Questions are also asked on financial decision processes, rules of thumb, and attitudes towards consumption and money. Part 4 contain a comprehensive financial review of the household such as income from various sources, holdings of various assets, and changes in income and assets over the past year. Apart from financial assets, the questions also cover private and company pensions, ownership of property and business assets. Part 5 contains questions about psychological and social variables. It includes the social environment, expectations about income, the economic situation, health, life expectancy, general attitudes towards life, as well as psychometric measures for risk attitude, propensity to plan etc. The interview ends with open-ended questions about the interview situation and asks whether the respondent would be willing to participate again (part 6).

Table 1: Structure of the questionnaire of the SAVE Survey.

Part 1:	Introduction, determining which person will be surveyed in the household
Part 2:	Basic socio-economic data of the household
Part 3:	Qualitative questions concerning saving behaviour, income and wealth
Part 4:	Budget balance: Quantitative questions concerning income and wealth
Part 5:	Psychological and social determinants of saving behaviour
Part 6:	Conclusion: Interview-situation

The first sample was surveyed in 2001 and consists of a quota sample of 1829 households. The next sample was a random sample that was fielded in 2003 and consisted of 2184 households, additionally 483 households from the quota sample 2001 were asked. The third wave consisted of a random sample of 1948 households, plus a quota sample of 357 households. Finally, the fourth wave was conducted in 2006 and consisted of 1505 households from the random sample plus 333 households from the quota sample. Additionally, the quota panel was extended by 1636 new households.

For all analyses in this paper, we use all subsamples of the SAVE survey.[2] All descriptive statistics are weighted, and the weights are based on the income and age distribution of the German microcensus of the respective year of the sample under consideration. All conclusions from the paper do not change, if we only use the random samples.[3]

3. The Incentives for private ("Riester") pension plans

While Riester pensions are voluntary, they are designed to replace some of the pension benefits previously provided by the public retirement insurance scheme. The idea is that the long-term reduction in replacement rates should be made up for by the Riester pension in such a way that future pensioners will be able to maintain the standards of living to which they become accustomed throughout their retirement. In order to achieve this, the Retirement Savings Act (Altersvermögensgesetz 2001) introduced a comprehensive regime of state incentives for private pension provision. The certified pension products which emerged from this new legislation have since been eligible for subsidy in the form of flat-rate allowances or tax relief provided that they fulfil specific subsidy criteria.

The legislation also gave a new lease of life to occupational pensions by ensuring, for example, that all employees now have the right to convert parts of their pay into pension contributions, by introducing pension funds as a new instrument of occupational pensions and unforfeitability periods have been shortened.

3.1 Eligibility for subsidy

Basically anyone who is affected by the reduction in pension replacement rates is eligible for subsidy support under the new scheme. The group of eligible beneficiaries includes employees paying mandatory social insurance contributions as well as people claiming wage compensation benefits (such as unemployment benefit, child-raising benefits), self-employed people who are mandatory members of the public pension system, farmers and tenured civil servants.[4]

[2] See Essig (2005) and Schunk (2006) for detailed methodological descriptions of the SAVE-data.

[3] As in all surveys that deal with sensitive topics such as household finances, nonresponse to specific sensitive questions has occurred (see Essig and Winter (2003) and in Schunk (2007) for a discussion and documentation). To prevent biased inference based on an analysis of only complete cases, an iterative multiple imputation procedure has been applied to the SAVE data (Schunk, 2007). Multiple imputation simulates the distribution of missing data and allows for a more realistic assessment of variances in subsequent analyses than single imputation. The procedure uses a Markov-Chain Monte-Carlo method to replace missing data by draws from an estimate of the conditional distribution of the data (Hoynes et al. 1998, Kennickell 1998). All results in this paper use the fully imputed SAVE data.

[4] The precise definition of persons eligible for state subsidies is more complicated. As a result, one reform proposal is to widen entitlement to include the entire active population or all tax payers. Simpler eligibility rules are expected to increase demand. A reform of this kind would also reach groups of people whose levels of social

The spouses of people in the eligible group are also entitled to receive subsidies provided that they take out a separate pension plan (“indirect entitlement") of their own.

3.2 The subsidy

People eligible for subsidies pay their savings into a certified pension plan. The insurance company applies for the state subsidy to be credited to the individual saver's personal pension plan. All those in the eligible category receive a basic allowance plus one child allowance for each child. Table 2 shows both maximum subsidy entitlements since phasing in of the scheme began in 2002 and the percentage of gross earnings which must be saved in order to qualify for the full subsidy.

Table 2: State incentives for supplementary pension provision.

From	*% of earnings that must be saved*	*Minimum*	*Basic allowance in euros per annum*	*Child allowance in euros per annum*	*Maximum tax rebate in euros per annum*
2002	1%	*	38	46	525
2004/05	2%	60 €	76	92	1050
2006	3%	60 €	114	138	1575
2008	4%	60 €	154	185**	2100

Note: * The standardisation of the saver's minimum own contribution at €60 was introduced to simplify the rules in 2004. Previously the saver's minimum own contribution had been differentiated according to year and number of children.
** The child allowance is supposed to increase to €300 for children born after 2007.

From 2008 onwards eligibility for the full subsidy will depend on savers devoting an annual amount of four per cent of their gross income earned in the previous year – limited to 2100 € – to their personal pension plan. This four per cent rate will be reached as the last of four stages. If less money is saved, the subsidy will be reduced proportionally. The subsidy is, however, included in the four per cent which has to be invested and this reduces the transparency of the subsidy design. The contribution which savers have to make from their own resources is correspondingly lower than the figures in Table 2 suggest.

Personal pension premiums up to the maximum amount (last column of Table 2) can also be declared as tax deductible special expenses in savers' tax returns. Higher earners may therefore

security is very low – such as people in low-income mini jobs or the small-time self-employed (Social Advisory Council 2006, Commission on the long-term financial viability of the German social 2004).

do even better and depending on income and number of children total rates of subsidy can vary between 24% and 90%.

3.3 Subsidy eligibility criteria for "certifiable" products

Private pension plans are eligible for subsidies if they fulfil the criteria stipulated in the Certification of Retirement Pension Contracts Act (AltZertG). The criteria include the requirements, for example, that savers make regular contributions and providers guarantee the availability of the nominal value of all contributions paid at the end of the paying-in period. Pension benefits must be payable on retirement in the form of a lifelong annuity, but must not be available before the saver reaches the age of 60. The Federal Financial Supervisory Authority (BaFin) examines products and certifies their eligibility for subsidy.

3.4 Use for the purchase of real estate

Capital amounts of between €10,000 and €50,000 may be withdrawn from pension plans for the purpose of purchasing owner-occupied property. The amount withdrawn must be paid back into the pension plan in monthly instalments by the age of 65 in order to retain the allowances on these amounts.

3.5 Changes based on the Retirement Income Act (Alterseinkünftegesetz)

The main element of the Retirement Income Act which came into effect on 1 January 2005 was the introduction of deferred taxation of old-age pension income. The Act also includes new rules on the 'Riester pension' which simplify their regulation and are intended to improve the acceptance and take up of these products by making them more customer and provider friendly:

1. The allowance application procedure has been simplified by replacing it with a one-off permanent allowance application. Savers eligible for subsidies can now authorise their pension provider to submit an allowance application on their behalf every year. A one-off authorisation, e.g. when the pension policy is taken out, is now sufficient.

2. The number of certification criteria has been reduced from 11 to 5. In the future it will, amongst other things, be possible for 30 per cent of the capital accumulated to be paid out in a lump sum (previously limited to 20 per cent).

3. The saver's minimum own contribution is now €60 per annum.

4. The information duties of pension providers have been extended. In the future providers must provide information about investment options, the structure of the portfolio and the risk potential. Providers will also be required to introduce a standardised calculation which will make it easier for consumers to compare products.

5. The acquisition and marketing costs must now be spread over five rather than ten years. This change is intended to hold out more attractive incentives to insurance agents to sell certified pension products.

6. As of 1 January 2006 unisex premiums are mandatory for pension plans. This was often used as a sales pitch to sell the Riester pension to men in 2005.

4. Will the Riester pension meet with acceptance?

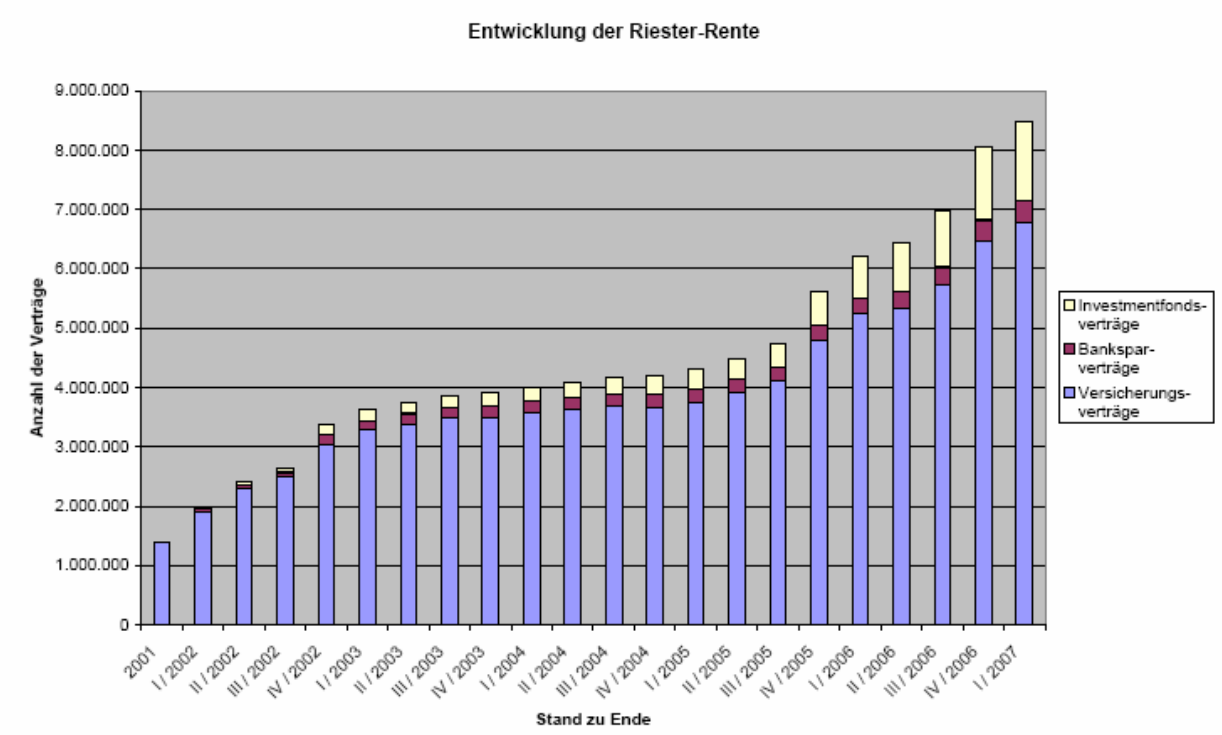
Will the incentives described here really result in the accumulation of savings for old age? Who is likely to buy into the Riester pension? he German government published the Old-Age Security Report (Bundesministerium für Arbeit und Soziales 2006) in March 2006 to answer these questions. It provides information about the extent to which supplementary pensions are being taken up and people's projected income in retirement. Section 4.1 summarises the results, which mainly relate to employees paying mandatory social insurance contributions. Section 4.2 consequently draws on the SAVE data to enable a representative study to be made of all households and considering broader information on old-age provision. While there are strong parallels in the results, certain key issues, such as coverage of people on low earnings, deviate significantly from the findings presented in the Old-Age Security Report.

4.1 The growing popularity of supplementary pension provision: data from the Old-Age Security Report

A total of more than 8 million pension plans eligible for subsidy support had been taken out by the end of 2006. About 37 million people are estimated to have been eligible for subsidies (Sommer 2007) corresponding to a coverage of about 23%.

The figures about take up figures for Riester pension plans show an unmistakable dynamism which increased in strength from the second half of 2005 onwards in particular. Figure 1 illustrates the number of Riester pension plans which have been agreed since the introduction of the scheme in 2001.

Figure 1: Development of Riester pensions



Source: Federal Ministry of Labour and Social Affairs (2007)

Around 1.4 million Riester pension plans were taken up in the first year after the introduction of Riester incentives. The number of new plans grew again in 2002.[5] The large number of new policies taken out in the fourth quarter can be explained by people eligible for subsidies endeavouring to benefit from the scheme for the entire calendar year. After a period of initial enthusiasm, demand for Riester pensions trailed off substantially in 2003 and 2004. One explanation for the trend apparent in 2004 is competition with life insurance products for which there was still relatively lively demand in 2004 bearing in mind the abolition of preferential tax treatment for these products with the passing on the Retirement Income Act in the following year (BMAS 2006). Demand for Riester pensions rose significantly in 2005, particularly in the second half of the year. Around 900,000 policies – around four times as many as during the whole of 2004 - were taken out in the last quarter of 2005 alone. This upwards trend continued throughout the first two quarters of 2006 and accelerated again in the third quarter. Overall developments in Germany confirm experiences in other countries which show that the introduction of subsidised savings vehicles need time before they really take off.

Alongside the issue of the extent to which Riester pension plans are taken up, the actual target groups reached by the scheme are also of socio-political importance. Empirical evidence about

[5] For an analysis of the initial phase see Dünn and Fasshauer (2003).

the structure of the scheme beneficiaries in the Old-Age Security Report is based on evaluations of data on applicants held by the central allowance office. The data for the year 2002 reveals that those on low incomes, women, families and employees in the new federal states of former East Germany are well represented among scheme beneficiaries and this suggests that social policy objectives have to this extent been achieved (Stolz and Rieckhoff 2005). This pattern also applies to the years 2003 and 2004 (Stolz and Rieckhoff 2006). 56.1% of beneficiaries were female and 43.9% male in the contribution year 2003. 29% of those receiving allowances were from the new federal states in eastern Germany, 71% from the former territory of West Germany. Around 2.4 million people received a basic allowance and 1.1 million people an additional child's allowance. These shares remained more or less unchanged in 2004.

3.2 The growing popularity of supplementary pension provision: SAVE data

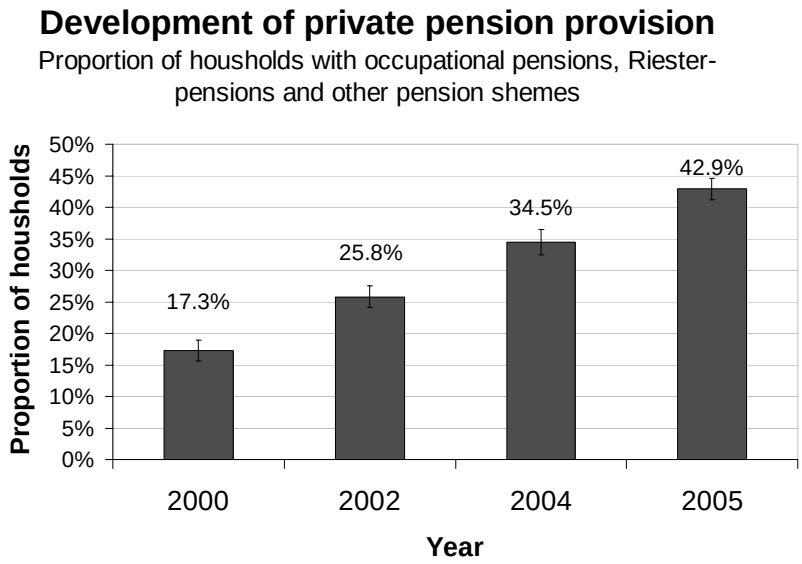
To complement the numbers presented above, we continue by describing the take up of supplementary private pension provision based on the SAVE data. The unit of study is the respondent and the respondent's spouse (referred to in the following as household). That is, we focus not on people paying mandatory social insurance contributions, but on households and thereby restrict our study to those of them whose head of household (i.e. in our case, the person who knows about the state of the household's finances) is not yet retired.[6]

Figure 2, shows how the proportion of households making supplementary provision for old age developed between 2000 – the year before the Riester reform – and 2005. Supplementary pension provision includes occupational pensions, state-subsidised pension products and other forms of private provision such as private pension schemes which are not eligible for direct state support or which were started before the subsidy rules were introduced.[7] Occupational pensions are presented whenever they may be regarded as competing with the Riester pension and therefore need to be taken into account in the analysis of the relevant demand.

6 This means that the body of people studied differs substantially from that of the AVID, for example.

[7] For the precise wording of the question in the questionnaire refer to question 1 in Appendix 1.

Figure 2: Proportion of households with private pensions in 2000- 2005



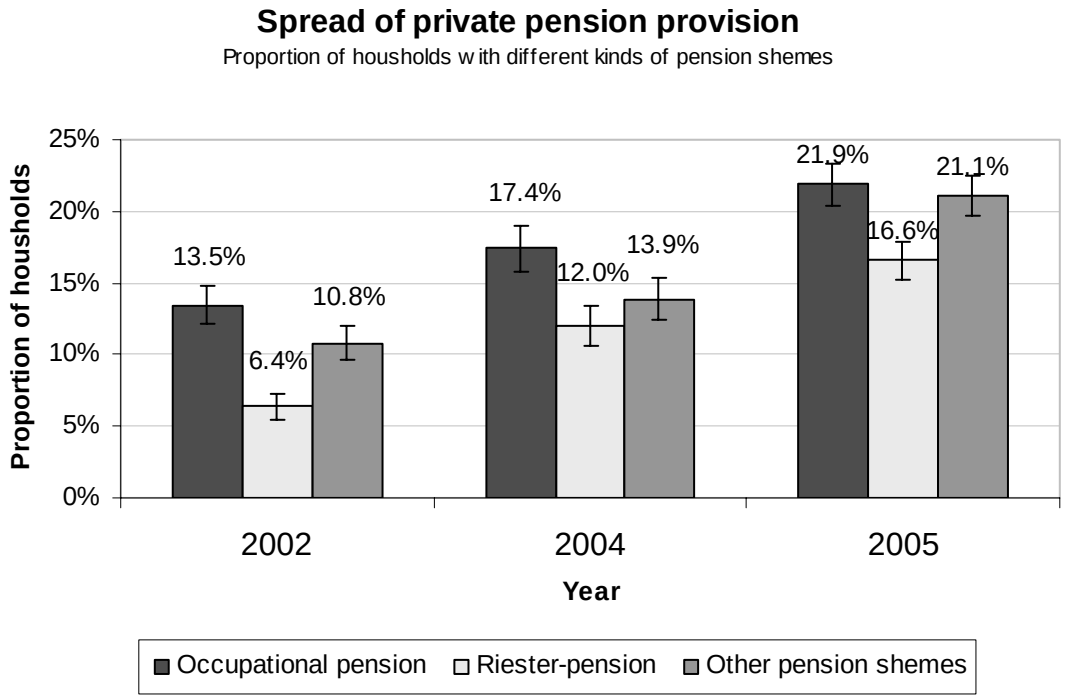
Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

Figure 2 confirms the dynamic development already apparent from the aggregated figures in the previous section: the proportion of households with supplementary pension provision grew substantially between 2000 and 2005 from 17% to 43%. This unbroken trend shows that even in a country such as Germany in which the first pillar of old-age pension provision is traditionally extremely dominant, it is still possible for people to build up pension claims of their own over time.

Which different forms of old-age pension provision have contributed to this development? Figure 3 shows how specific vehicles of pension provision have developed in the period 2002 to 2005.[8]

[8] The year 2000 has not been taken into account as pension provision had not been included in the SAVE questionnaire before the introduction of the Riester pension.

Figure 3: Spread of different private pension instruments



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

There has been a marked increase in the use of all the various pension instruments considered here since the pension reform of 2001. The proportion of households with occupational pensions almost doubled in the SAVE sample between 2002 and 2005 and the proportion of households with Riester pensions almost tripled. The number of pension products which do not attract state subsidies have also doubled in the same period and, with a proportion of 21 per cent in 2005, and are even more widespread than the Riester pensions. In fact the volume of these products has grown even faster since 2004 than the volume of Riester pensions, which is in itself astounding bearing in mind the high levels of subsidy available for which the latter are eligible. Possible explanations include demand for these products from people who are not eligible for state subsidies or a shift in demand towards private pensions as a response to the abolition of tax benefits for capital sum life insurance policies.[9]

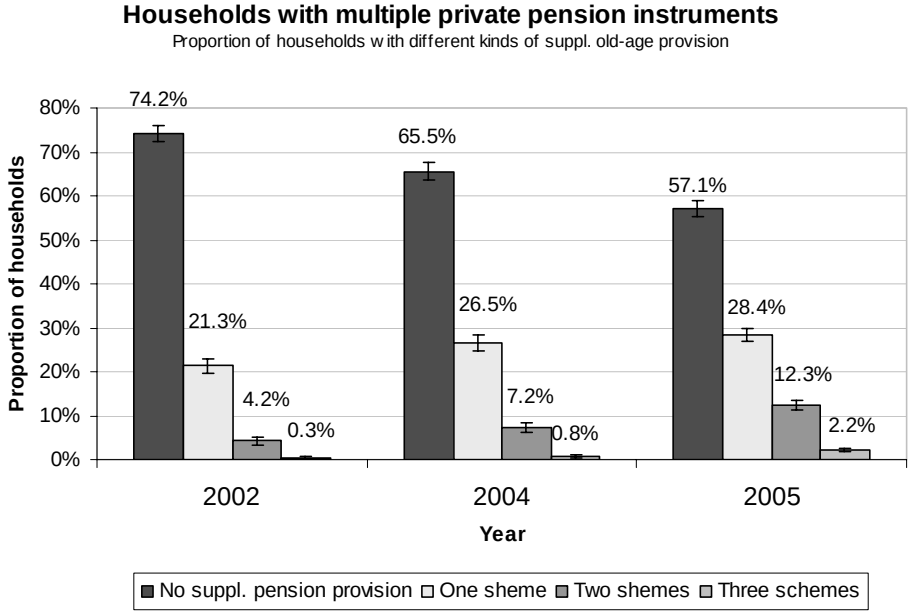
There are several possible explanations for the smooth and continuous rather than spasmodic development of Riester pensions. Poor "marketing" can probably be blamed for the initially poor performance of Riester pensions. The learning process regarding the need to make provision for old age, the financial support available with certain products and the actual decision to buy a pension plan all take time. And because people learn from their social

[9] See appendix 6.2 for the coverage of the SAVE data.

environment, the pace of this development depends in turn on how widespread such pensions are in the population at large ("critical mass", Ruprecht 2004). The changes in regulations described in section 3, such as the introduction of a simpler one-off allowance application may also have had a positive impact. This demand-side explanation probably played a secondary role in the first instance bearing in mind that, according to the DIA pension barometer, around two thirds of the population had never heard of the new regulations at the beginning of 2005. This figure had dropped to one third one year later and corresponds with the sharp increase in new policies taken out since the end of 2005 (DIA 2005, 2006). On the supply side, the shorter period over which acquisition and marketing costs can be spread may have led insurance agents to push harder to make sales.

The considerable proportion of households with pension plans may disguise the fact that some households have several plans while others have none at all. Figure 4 therefore shows how many households have how many different types of pension instrument.

Figure 4: Households with several pension instruments



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

The figures provide impressive confirmation that fewer and fewer households now have no pension instruments of their own at all. While the SAVE data showed that, in 2002, three quarters of households had neither their own occupational pension nor a Riester or any other private pension, this was only true of just over half of the population in 2005. It will become

apparent in the years ahead just how many other households have acquired private pensions. Saturation point has clearly not yet been reached.

The proportion of households with several pension instruments also increased in the observed period. Around 12 per cent of households which have not yet reached retirement held two instruments in 2005 – three times as many as in 2002. This suggests that the fact that these pension instruments are now more prevalent is not simply due to households which had not previously made private provision for old age, but is also increasingly due to the number of households which use several such instruments to supplement their statutory pension. At the same time, it was still the case that in 2005 more than half of households had not made any supplementary private pension provision in the narrow sense of the term. If endowment policies are also taken into account, however, a mere 38 per cent of households are found not to be making any supplementary provision of their own for their old age.

5. Who makes supplementary private pension provision?

The following section examines the types of households making private pension provision. The aim is to identify who actually receives state subsidies and, the factors which may prevent households from using these instruments to provide for their retirement. In this context we concentrate our analysis on private or personal pension provision, i.e. "Riester pensions", and other forms of old-age pension provision which are not subject to government subsidy.[10] We begin by considering the proportion of households which make supplementary provision for retirement based on various socio-economic characteristics (section 5.1) and then refine the results by means of a multivariate analysis (section 5.2).

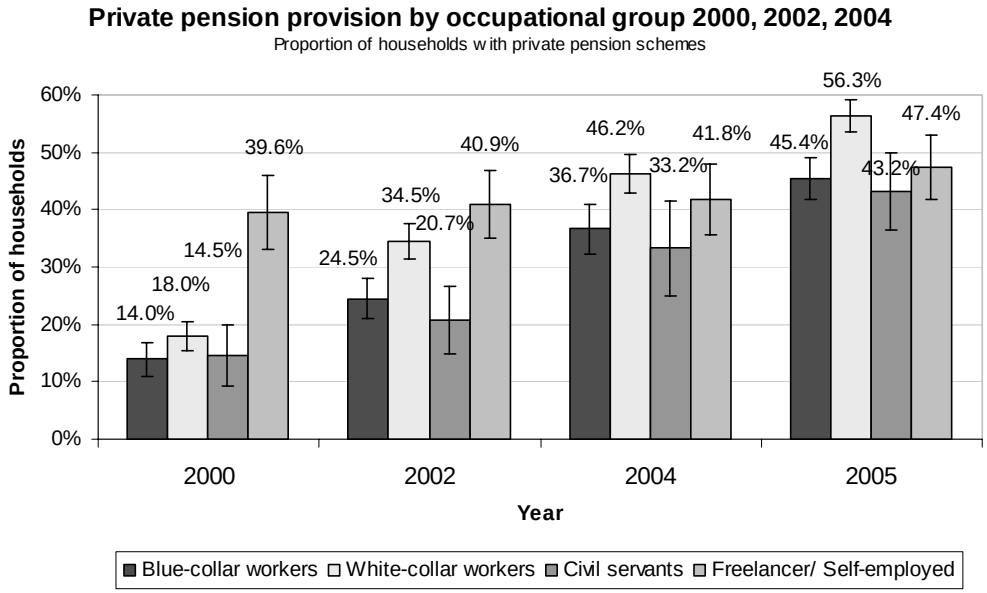
5.1 Supplementary pension provision along socioeconomic characteristics

Supplementary pension provision according to occupational group

We begin by examining whether the prevalence and development of supplementary pension provision differs according to occupation. Figure 7 shows that people from all occupations are now making provision for old age. While it was mainly the self-employed and freelance professionals who inclined to make pension provision for themselves outside the confines of the public pension system prior to the Riester reform, blue and white collar workers as well as tenured civil servants now also use the instruments considered here to a similar extent to make supplementary pension provision.

[10] For a similar study of supplementary pension provision in the United Kingdom, see Disney et. al (2001).

Figure 7: Supplementary pension provision according to occupational group in 2005

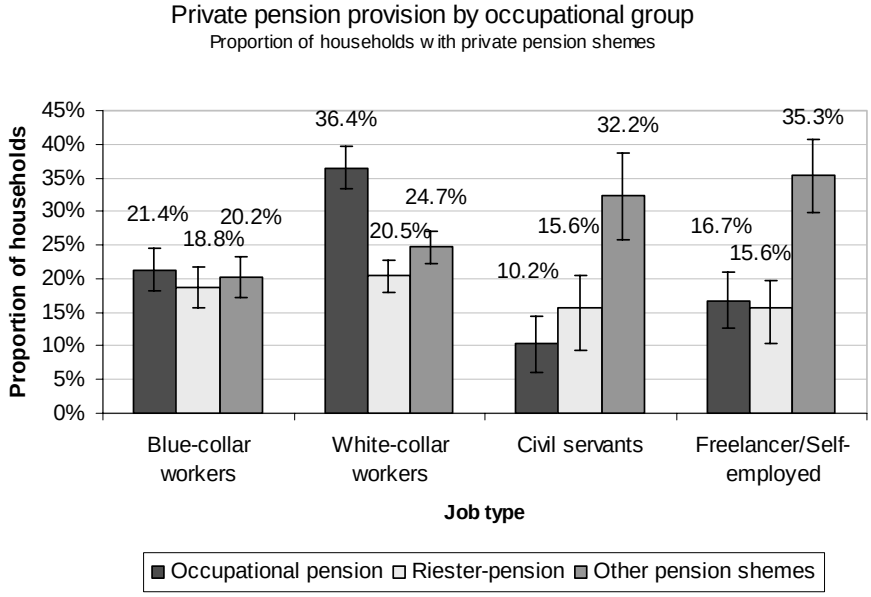


Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

White collar workers are most likely – at 56 per cent - to make supplementary pension provision. While the extent of such provision has grown by similar amounts among both white and blue collar workers, the trend is less dynamic among the self-employed. As only a small number of freelancers and self-employed are eligible for subsidy support, or can only take out a Riester pension plan via their employed spouses, state incentives naturally exert much weaker pull on this group. At the same time, the public discussion which has accompanied the introduction of the Riester pension may have heightened self-employed people's awareness of the necessity of making supplementary provision for their old age.

Going on to consider the pension instruments used by individual occupational groups, figure 8 shows that the prevalence of Riester pensions among white and blue collar workers is fairly similar. The higher overall coverage among white collar workers can therefore mainly be explained by the impact of occupational pensions.

Figure 8: Private pension instruments according to occupational group in 2005



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

One surprising element in the figures is the high proportion of tenured civil servants with occupational pensions. It is unclear whether this is to do with the perception of the civil servant pension as an "occupational pension" or whether it relates to the occupational pension entitlement of spouses who are not civil servants. This also applies to the self-employed who have taken out a surprisingly high number of Riester pension plans. As might be expected this subgroup holds a high proportion of private pension instruments which do not qualify for state subsidies.

The chronology in Table 3 shows take up of other pension policies by tenured civil servants grew fastest – at 21 percentage points - in the period 2002 to 2005. This can be partly explained by characteristics specific to civil servants, such as better education or higher age. The following multivariate analysis also reveals a direct relationship between civil servant status and demand for other pension policies, however.

Table 3: Development according to occupational group between 2002 and 2005

Pension provision by occuptional group 2005 (Change from 2002)			
	Occupational pension	Riester-pension	Other pension shemes
Occ. Group			
Blue-collar	21% (+7)	19% (+11)	20% (+11)
White-collar	36% (+14)	20% (+13)	25% (+13)
Civil Servant	10% (+4)	16% (+9)	32% (+21)
Freelancer/ Self-employed	17% (+4)	16% (+9)	35% (+5)

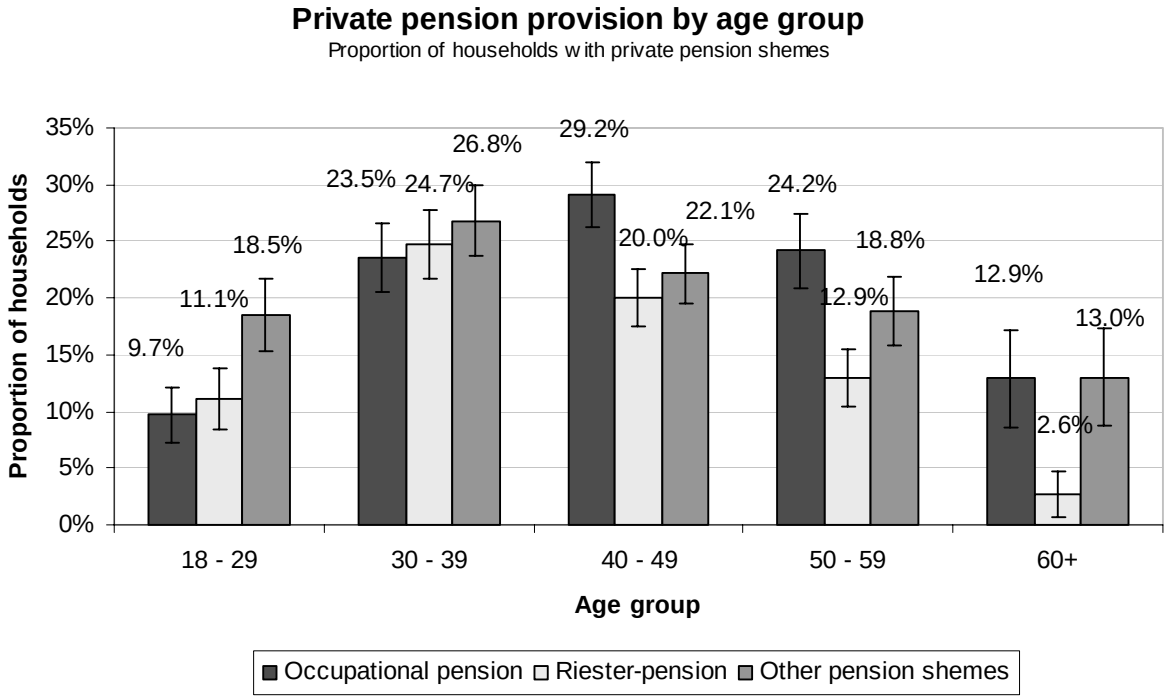
Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: Weighted figures.

A significant difference in the prevalence of pension instruments between blue and white-collar workers is only apparent for occupational pensions.

Supplementary pension provision according to age group

One would also expect to find differences in demand for supplementary pension provision according to age group, given that the replacement rate under the public retirement insurance system is set to slowly fall. Younger generations are consequently more strongly affected than older generations and one would therefore anticipate lower participation rates in this group. On the other hand, the anticipated rates of return are relatively high for this population group as a result of the state subsidies and the short policy terms.

Figure 9: Supplementary pension provision according to age groups in 2005



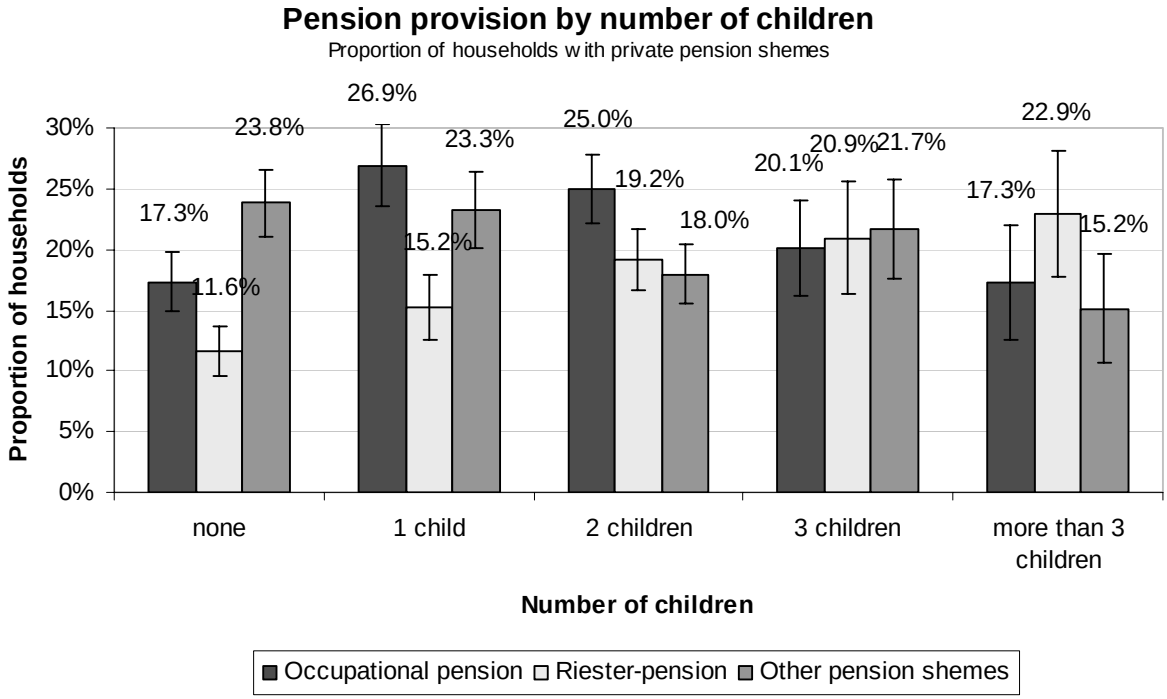
Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

The distribution of Riester pensions across age groups in Figure 9 more or less reflects the anticipated profile. Despite the high rate of return which heads of household aged 50 to 59 can expect to receive with a Riester pension, fewer households have taken out a Riester pension in this group than in the younger age groups. Riester pensions are most common in the 30 to 49 age group, the age group which also includes the baby boom generation which will be most dramatically affected by the lower replacement rate in the public pension scheme in the future. Participation is also significantly lower among younger households, partly because many of the members of these households are not in gainful employment or are still in training or education. As this group also has fewer children it also receives a lower level of subsidy. This manifests itself in a higher proportion of private pension instruments which do not qualify for state subsidies in older households.

Private pension provision according to number of children

The next figure shows the strong positive correlation between the number of children and the proportion of households with a Riester pension plan. Owing to the children's allowance state subsidies increase linearly with the number of children, it is not surprising that there is strong demand among parents with more than two children.

Figure 10: Private pension provision according to number of children in 2005



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

One in five households with two or more children – almost twice as many as among childless households - now have a Riester pension plan. Another striking aspect is that Riester pensions are particularly popular with larger families with children. This is confirmed by the chronological development shown in Table 4 for the period 2002 to 2005 when Riester pension plans were proliferating most markedly among households with more than 3 children.

Table 4: Development according to number of children

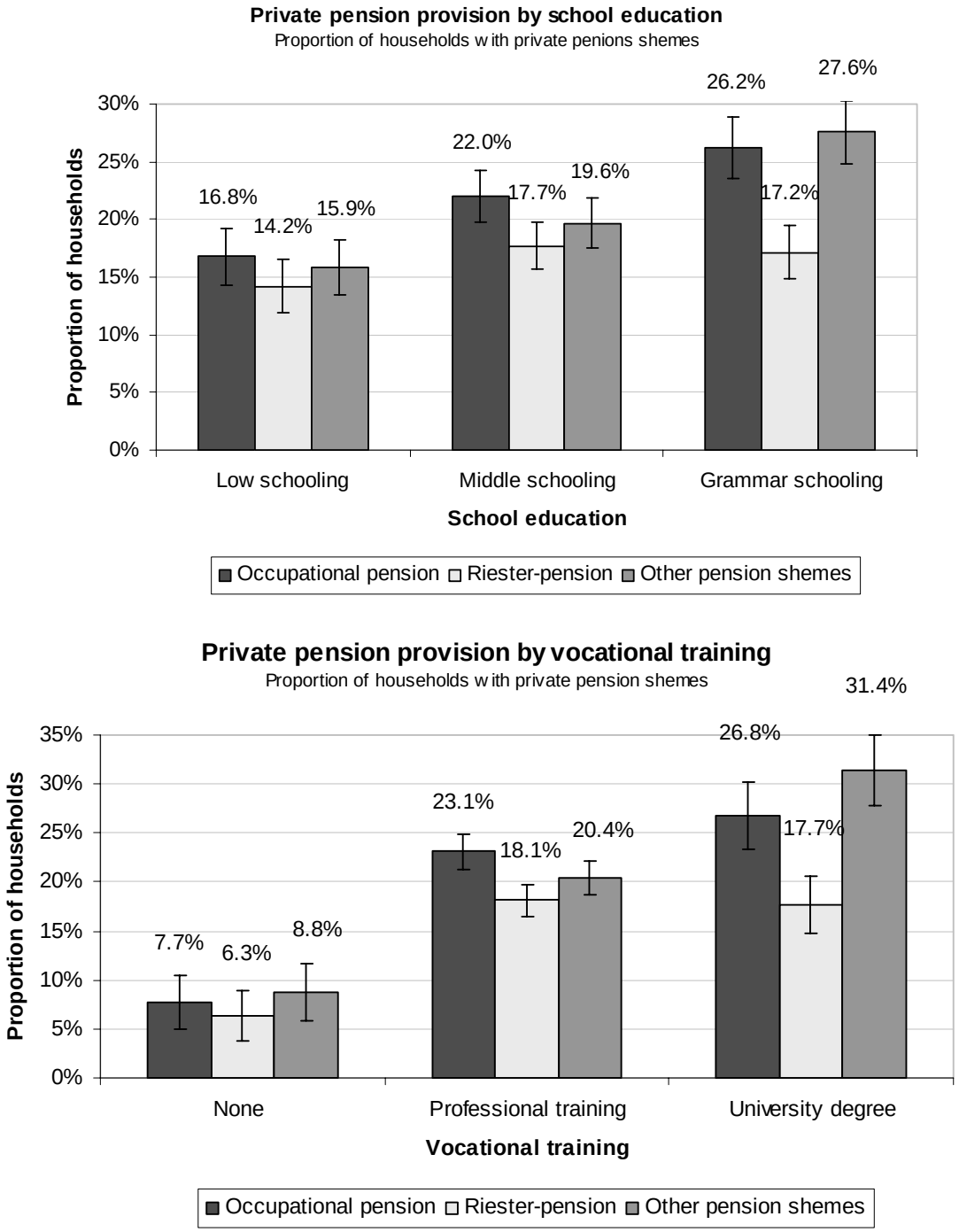
Pension provision by number of children 2005 (change from 2002)			
	Occupational pension	Riester-pension	Other pension shemes
Number of children			
none	17% (+7)	12% (+8)	24% (+13)
1 child	27% (+13)	15% (+9)	23% (+11)
2 children	25% (+9)	19% (+12)	18% (+7)
3 children	20% (+3)	21% (+12)	22% (+10)
more than 3	17% (+5)	23% (+17)	15% (+10)

Pension provision according to education

Personal pension provision is closely related to knowledge about financial issues in general because awareness of pension issues and the conviction of the need for supplementary pension provision – in other words the willingness to postpone consumption – is contingent on

knowledge about the conditions attached to state subsidies and the various take up options available. Figure 11 shows the proportion of households making provision for old age according to school education (top) and vocational qualifications (bottom) as indicators of financial knowledge.

Figure 11: Private pension provision according to school education and vocational qualifications in 2005



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

The top part of the figure shows that people leaving school with a lower secondary school qualification make somewhat less provision for old age in any of the forms considered here than do heads of household with a secondary school leaving certificate or general university entrance qualification. While there are no differences between people holding a secondary school leaving certificate and those with higher qualifications as far as Riester pensions are concerned, occupational pensions are much more common among more highly educated heads of household. Differences are larger in the bottom half of the figure which differentiates according to vocational qualifications. A negative relationship exists in this case between lack of vocational training and supplementary pension provision. The prevalence of occupational pensions among university graduates is particularly striking. Riester pensions are now equally common among heads of household with intermediate and higher educational qualifications.

The increase in the number of occupational and Riester pensions held by households without any vocational training since 2002 trails behind that of the other two groups. However, there has nonetheless been an increase in the number of such pension plans held by this group of households across all three types of pension (see Table 5).

Table 5: Development according to vocational training between 2002 and 2005

Private pension provision by vocational training 2005 (change from 2002)			
	Occupational pension	Riester-pension	Other pension shemes
Vocational training			
None	8% (+4)	6% (+3)	9% (+8)
Professional training	23% (+8)	18% (+11)	20% (+9)
University degree	27% (+10)	18% (+10)	31% (+13)

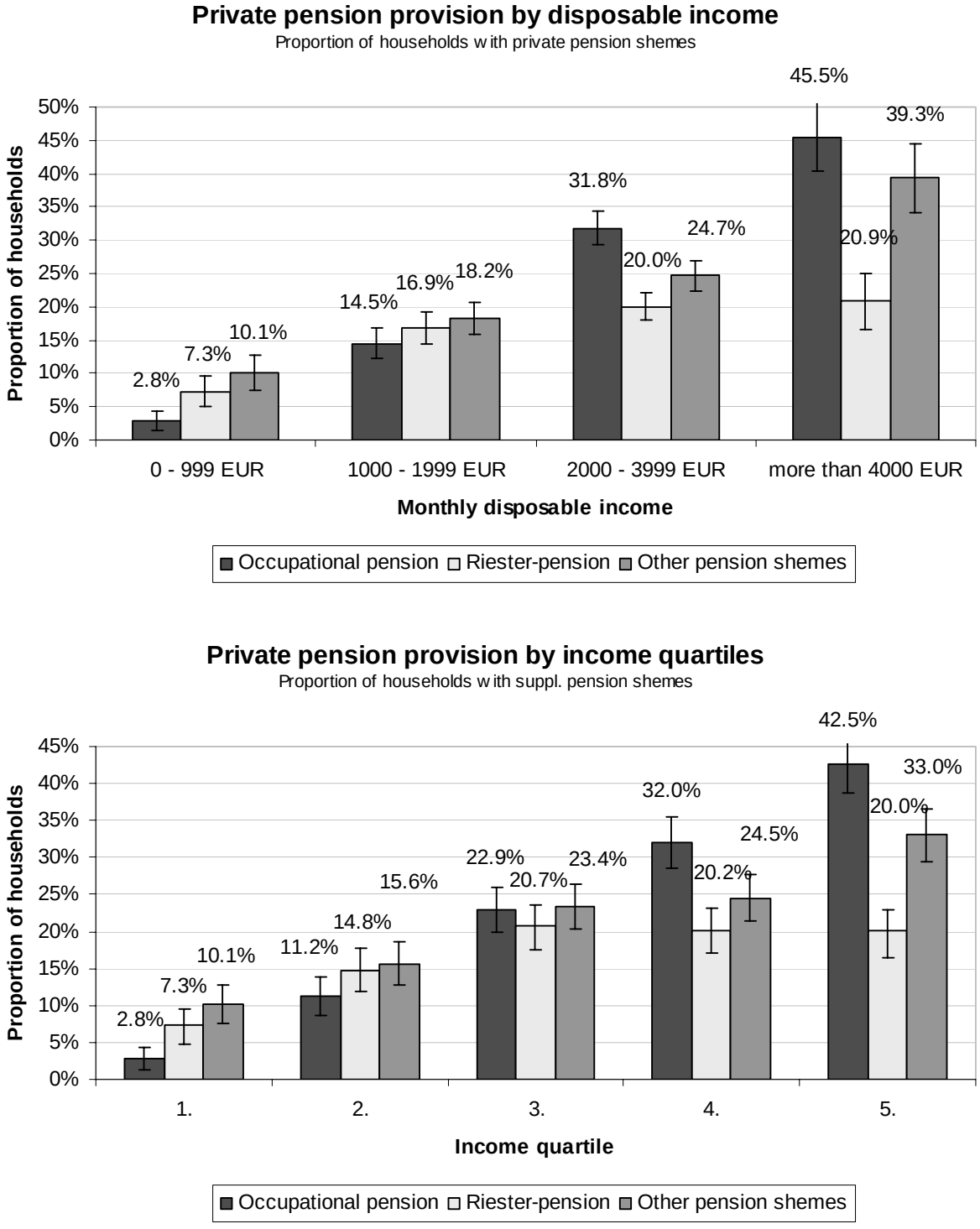
Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: Weighted figures.

Pension provision according to income

Finally, we consider the relationship between disposable household income and demand for supplementary pension provision. Figure 12 shows that the proportion of households holding private pension instruments increases with growing disposable household income. This pattern is most apparent as far as occupational pensions are concerned. Around 7 per cent of households in the lowest income bracket and around one third in the upper income bracket have taken out Riester pension plans. However, the distribution by income of Riester-pensions is much more equal than with occupational pensions or other pension schemes. An alternative perspective is shown in the diagram in the lower half of Figure 12 which breaks down

households into income distribution quintiles. The income-related incidence of occupational pensions is also apparent in this diagram while Riester pension plans – despite being much less common in the lower income brackets – are relatively evenly distributed.

Figure 12: Private pension provision according to monthly disposable income in 2005



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: The thin line shows the 90% confidence interval. Weighted figures.

Increases can be identified in all income groups since 2002. Starting from a lower initial level, while the increase in percentage points is least marked in the lowest income bracket the difference is not actually all that great in percentage terms. What is particularly striking is the impressive growth in occupational pensions and in private pension instruments which do not qualify for state subsidies held by high income households.

Table 6: Development according to income brackets between 2002 and 2005

Private pension provision by monthly disposable household income 2005 (change from 2002)			
	Occupational pension	Riester-pension	Other pension shemes
Income bracket			
0 - 999 EUR	3% (+2)	7% (+4)	10% (+5)
1000 - 1999 EUR	15% (+5)	17% (+10)	18% (+10)
2000 - 3999 EUR	32% (+13)	20% (+12)	25% (+10)
4000 EUR und mehr	45% (+23)	21% (+14)	40% (+25)

Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households.
Note: Weighted figures.

The evaluations of data from the central allowance office, however, show that the earned income of two thirds of those benefiting from allowances is below average earnings. How can this discrepancy be explained? Firstly, the data from the allowance office is based on the personal earned income from the previous year relevant for allowance purposes, while our analysis is based on the entire disposable household income. This means that the income earned by the spouse and other forms of income – such as income from capital assets and transfer payments and child benefits - are also taken into account in the approach adopted here. Given that, in the final analysis, the general welfare and prosperity of a household is determined by its overall income, this broader variable is an important criterion in assessing the target groups reached by the Riester pension. The allowance office, for example, would classify a wife working in a low-paid part-time job as being on a low income, even if the husband was on a high salary. We, on the other hand, assign married couples in this constellation to the upper income bracket. The difference between our results and those produced by Stolz and Rieckhoff (2005) therefore suggests that while it is mainly those on low incomes who apply for allowances, these applicants often have other sources of income in the household context. New empirical results based on the income tax statistics also show that Riester-pensions are more prominent among incomes between 30.000 € and 100.000€ and less represented among low and very high earners (Kriete-Dodds and Vorgrimler 2007).

A second, rather more technical issue is the unit of reference on which the calculated proportions are calculated. While we relate the rates of participation in the Riester pension scheme to all households in the population as a whole, Stolz and Rieckhoff (2005, 2006) calculate their proportional figures from within the group of allowance beneficiaries. This latter approach neglects the distribution of the observed characteristics in the total population. Table 7 below shows the shares calculated in the SAVE data using both methods and underlines the differential impact of the two calculation methods. This table also provides us with some idea about the dynamism of Riester pensions in various income brackets.

Table 7: Riester pension plans according to income brackets in 2004 and 2005

Monthly disposable household income in euros	**0-999**	**1000-1999**	**2000-3999**	**Over 4000**
			2004	
(1) Distribution of Riester pensions	7.7%	25.8%	51.4%	15.1%
(2) Participation rate in population	4.4%	10.5%	16.0%	17.1%
			2005	
(1) Distribution of Riester pensions	9.0%	31.5%	47.4%	12.1%
(2) Participation rate in population	7.3%	17.0%	20.0%	20.9%

The first row (1) calculates the distribution of Riester pension plans among income brackets using the method adopted by Stolz and Rieckhoff (2005). Disposable household income continues to be used as earned income is not captured separately in SAVE. The percentages in the second row were calculated in the same way as in previous evaluations above. In other words, these latter figures relate to the entire sample and not just to households with Riester pension plans. The first method produces higher percentage shares for lower income brackets and also assigns around half of households with Riester pension plans to the third income bracket. Regardless of the unit of reference used, an important result is apparent: there has also been a particularly marked and ever higher increase in the number of Riester pension plans in the lower income range since 2004.

5.2 Who makes supplementary pension provision? Multivariate analyses

All the variables described in the last section are dependent on the decision in favour of supplementary pension provision. It is important to evaluate the impact of these variables in a regression, however, in order to calculate the relationships between the variables. This is the reason why we bring together the evidence cited thus far in the next step and present the results as part of a multivariate analysis.

As well as the variables already considered in the previous section we also take account of additional variables which may, for example, refer to competing motives for saving and reflect knowledge of future anticipated rates of return. We initially restrict our analysis to the Riester pension (section 5.2.1) and then move on to other voluntary forms of contract-based private pension provision which are not eligible for direct subsidy.

5.2.1 Who has Riester pensions?

Table 8 presents the results of a probit regression in which the dependent variable shows whether a household has a Riester pension plan at the end of the year 2005.

Table 8: Determinants of the Riester pension (probit estimates)

Variable	(1)	(2)
Age	0.147 (5.45)***	0.150 (5.58)***
$(Age)^2$	-0.002 (6.43)***	-0.002 (6.57)***
Sex female (dummy)	-0.125 (1.74)*	-0.115 (1.61)
Married (dummy)	0.049 (0.61)	0.047 (0.58)
General university (university of applied science) entrance qualification (dummy)	0.054 (0.63)	0.046 (0.54)
Unemployed (dummy)	0.102 (0.87)	0.065 (0.57)
Number of children	0.150 (5.45)***	0.151 (5.52)***
White collar worker (dummy)	-0.094 (1.02)	-0.085 (0.93)
Tenured civil servant (dummy)	0.004 (0.03)	-0.002 (0.02)
Self-employed (dummy)	-0.155 (1.18)	-0.146 (1.11)
Contact with tax adviser (dummy)	0.022 (0.29)	0.032 (0.43)
Intention to buy real estate	-0.002 (0.02)	-0.002 (0.02)
Disposable income: 1. Quintile	-0.234 (1.69)*	-
Disposable income: 2. Quintile	-0.000 (0.00)	-
Disposable income: 3. Quintile	Reference category	
Disposable income: 4. Quintile	-0.144 (1.47)	-
Disposable income: 5. Quintile	-0.146 (1.36)	-
Disposable income:	-	0.000 (0.32)
(Disposable income)^2	-	-0.000 (0.87)
Net assets	0.021 (0.91)	0.021 (0.95)

(Net assets)^2	-0.000	-0.000
	(0.52)	(0.53)
Property owner (dummy)	0.080	0.067
	(0.92)	(0.77)
Is not aware of anticipated replacement rate	-0.133	-0.134
	(1.84)*	(1.85)*
Reason for saving: To buy real estate	-0.084	-0.084
	(1.96)**	(1.96)**
Reason for saving: To provide for unforeseen events	-0.079	-0.069
	(1.18)	(1.03)
Reason for saving: To pay off debts	-0.057	-0.055
	(1.27)	(1.24)
Reason for saving: Old-age provision	0.191	0.181
	(2.55)**	(2.42)**
Reason for saving: Holiday	0.020	0.022
	(0.42)	(0.47)
Reason for saving: To finance major purchases	0.037	0.029
	(0.70)	(0.56)
Reason for saving: To finance education of grandchildren/children	-0.033	-0.032
	(0.69)	(0.68)
Reason for saving: Inheritance	-0.140	-0.143
	(2.62)***	(2.69)***
Reason for saving: State subsidies	0.272	0.276
	(6.19)***	(6.30)***
Other form of supplementary pension provision (dummy)	0.498	0.496
	(6.48)***	(6.49)***
Saving capacity	-0.103	-0.090
	(0.69)	(0.61)
Constant	-4.148	-4.293
	(6.72)***	(7.28)***
Number of observations	2255	2255

Note: Absolute value of the z statistics in parentheses.
* Significant at 10% confidence interval, ** Significant at 5%, *** Significant at 1%

The top part of Table 8 contains coefficients of the most important socio-demographic characteristics. The sex of the head of household, marital and occupational status all have statistically insignificant coefficients, i.e. it is not possible to measure any relationship between these characteristics and old-age pension provision. Households with a general university entrance qualification are statistically no more likely to have taken out a Riester pension either.

The number of children, on the other hand, remains significant in the multivariate analysis. The strong relationship between a Riester pension and the existence of children is thus robust and persists even if the influence of additional household characteristics are calculated out.

Age is specified in the estimates as a quadratic function, and the parabolic age profile estimated from the multivariate analysis is similar to the profile reported in figure 9. Also, a cubic specification generates the same results: The probability of having a Riester pension increases initially, reaches its maximum at the age of about 40 and then falls constantly towards retirement age.

The next variable group in the regression is the financial situation of the surveyed households. We test the robustness of the income effect using two specifications – columns (1) and (2) - for disposable household income. In the results column (1) we initially specify household income using dummy variables which show how the household fits in with the income distribution quintiles. The reference category is the omitted third quintile. Only households in the bottom income quintile have a weakly significant lower probability in 2005 of having a Riester pension than households in the medium income range. The coefficients for the two highest income distribution quintiles remain insignificant, i.e. it is not possible to measure a higher probability for these of having a Riester pension than for the third income quintile. Overall the picture which arises from the analysis confirms that there is only a negative relationship between income and the Riester pension for the lower income bracket. The overall weak income effect may be regarded as robust as the alternative quadratic specification of income does not measure any influence deriving from income either (results column (2) in Table 8).

There does not appear to be an additional negative relationship between unemployment and a Riester pension. The relationship between financial assets and Riester pensions is similar to that between the latter and income.

A dummy variable which reflects contact with a tax adviser was included in the estimate as an indicator of knowledge of state subsidies. This variable does not, however, assume any statistical influence. A further knowledge variable relating to the ability of households to estimate their expected replacement rate in old age (their retirement income relative to their pre-retirement income) does, however, have a negative coefficient.[11] In other words, we can perceive a negative relationship between lack of knowledge of future income in old age and participation in the Riester pension scheme. The causality in this context is unclear, however, as households which opt for a Riester pension were also informed by their financial advisors during the sales process about their statutory pension entitlements or found out about their entitlements themselves during the decision-making process.

We also examine how the different motives for saving relate to the way private provision is made for old age. We have therefore included measures in the regression which reflect the significance of different saving motives for respondents. Above all, however, we are interested in the acquisition of property, the wish to bequeath wealth and state subsidies as motives for saving. A significantly negative coefficient is apparent as far as the wish to bequeath is concerned. Our interpretation is that the requirement for Riester plans to be paid out in

[11] For the precise wording of the question in the questionnaire refer to question 2 in Appendix 1.

continuous, monthly pension amounts during the benefit phase acts as a disincentive for households for whom making a bequest is an important motive for saving to make use of Riester pension plans. Another displacement effect is apparent in households who are particularly interested in saving in order to finance the purchase of property. The more important this savings motive is, the less likely the survey respondent is to have a Riester pension plan.

The high level of subsidy which Riester pensions attract might lead us to expect a positive relationship with the saving motive of benefiting from the financial support provided by the state. This expectation is confirmed by the findings. The significant positive coefficient in this context demonstrates that households for which state subsidies represent an important savings motive are most likely to hold a Riester pension plan in their portfolio. The positive coefficient with the saving for old age motive shows that, as far as old-age pension provision is concerned, expressed attitudes to savings correspond with actual behaviour.

Another possible explanation for households' failure to take out a Riester pension plan may be that they are already paying into other pension plans.[12] We therefore take account of whether respondents have already built up occupational pension entitlements, or whether they have made any other private pension provision or taken out an endowment policy. The coefficient of these variables is statistically significant – and against all expectations, positively significant. Households which are already covered by one of the pension forms referred to are much more likely to have a Riester pension plan as well. This means that households which think ahead and make provision for old age tend to use several instruments for this purpose.

Finally, we consider the significance of a household's financial options and measure this using a variable which models the household's capacity to live on its income.[13] It is not, however, possible to measure any influence for this variable.

Finally, it is informative to compare these results for the year 2005 and those for the previous year (2004). For example, both the variables used as indicators of knowledge (general university entrance qualification and extent to which someone is informed about the replacement level) in the estimate for 2004 show a significant correlation with the probability of having a Riester pension. It was not possible to measure the education effect in 2005 and knowledge about future pension levels had a weakly negative effect. This suggests that the

[12] In this context see Federal Ministry of Labour and Social Affairs (2006)

[13] The dummy variable is given the value 1 if the household states that it still has money on its current account at the end of the month or the value 0 if this is not the case. For the precise wording of the question in the questionnaire refer to question 3 in the Appendix.

large number of new policies taken out in 2005 were acquired by sections of the population to which this information only got through at a later time. There is a similar relationship between the Riester pension and income brackets. The data for the previous year shows that the two lowest income brackets were still less likely to have a Riester pension plan than the medium income bracket and this, as discussed in section 5.1, demonstrates that the dynamic proliferation of these products has now reached the lower income brackets.[14]

All in all, therefore, the key factor determining whether or not use is made of a Riester pension plan appears to be the number of children, and it is this factor which governs the level of allowance available. As far as income is concerned, only those in the lowest income bracket have a lower probability of having a Riester pension. The desire to purchase property and the wish to bequeath assets are savings motives which compete with the act of taking out a Riester pension plan.[15]

5.2.2 Who makes private provision for old age in other forms?

In order to obtain a comprehensive picture of the degree to which Riester pensions are accepted it is essential to take account of "competing" old-age pension products. It may well be a rational decision to avoid the highly-regulated Riester pension, to do without state subsidies and to choose a pension product which corresponds more closely with one's own preferences and/or which may promise a higher rate of return. Bearing this in mind Table 9 shows the results of a probit regression describing the probability of having an old-age pension product which does not qualify for state subsidies. In order to ensure that differences in the determinants of subsidised and non-subsidised old-age pension products are immediately identified, the independent variables are the same as those for the previous estimate.

[14] The regression results for 2004 can be obtained from the authors upon request.

[15] Owing to the annuity character of the Riester pension we have included subjective life expectancy in further regressions. The underlying hypothesis is that people who believe they will not live to reach the average age of death will be less interested in an annuity than someone who believes they will live for longer. While the positive and negative nature of the variables complies with expectations, they are in fact insignificant and are not included in the presentation of results for this reason. The same applies to respondents' personality types which we have also included in the regression given that the decision for a Riester pension – all other characteristics being equal – is also a question of attitude. For this purpose we have used the information provided by the SAVE data which has already proved to have strong explanatory value in studies of savings behaviour. One variable shows whether the respondent's self perception is of somebody who "lives from day to day without worrying too much about the future" or who "plans ahead and thinks carefully about the future". A second variable shows whether respondents regard themselves as fundamentally impulsive or as people who tend to slowly deliberate on their decisions. Neither coefficient was found to have any influence on the probability of having a Riester pension.

Table 9: Determinants of non-subsidised old-age pension products (probit estimates)

Variable	(1)	(2)
Age	0.054	0.057
	(2.53)**	(2.65)***
$(Age)^2$	-0.001	-0.001
	(2.94)***	(3.06)***
Sex female (dummy)	-0.014	-0.008
	(0.21)	(0.12)
Married (dummy)	-0.195	-0.178
	(2.57)**	(2.34)**
General university (university of applied science) entrance qualification (dummy)	0.224	0.207
	(2.94)***	(2.73)***
Unemployed (dummy)	-0.177	-0.214
	(1.52)	(1.87)*
Number of children	-0.031	-0.030
	(1.13)	(1.10)
White collar worker (dummy)	0.126	0.140
	(1.45)	(1.62)
Tenured civil servant	0.235	0.233
	(1.85)*	(1.83)*
Self-employed (dummy)	0.400	0.409
	(3.67)***	(3.74)***
Contact with tax adviser (dummy)	0.160	0.158
	(2.33)**	(2.30)**
Intention to buy real estate	0.162	0.167
	(1.91)*	(1.98)**
Disposable income: 1. Quintile	-0.472	-
	(3.73)***	
Disposable income: 2. Quintile	-0.262	-
	(2.51)**	
Disposable income: 3. Quintile	Reference category	
Disposable income: 4. Quintile	-0.011	-
	(0.12)	
Disposable income: 5. Quintile	0.098	-
	(0.98)	
Disposable income:	-	0.000
		(3.52)***
(Disposable income)^2	-	-0.000
		(2.16)**
Net assets	0.102	0.095
	(4.02)***	(3.72)***
$(Net\ assets)^2$	-0.000	-0.000
	(3.07)***	(2.96)***
Property owner (dummy)	-0.107	-0.095
	(1.25)	(1.11)
Is not aware of anticipated replacement rate	-0.118	-0.127
	(1.73)*	(1.87)**
Reason for saving: To buy real estate	-0.047	-0.047
	(1.16)	(1.17)
Reason for saving: To provide for unforeseen events	-0.019	-0.013
	(0.29)	(0.21)
Reason for saving: To pay off debts	-0.060	-0.063
	(1.47)	(1.53)
Reason for saving: Old-age provision	0.690	0.688
	(8.04)***	(8.03)***
Reason for saving: Holiday	-0.057	-0.059
	(1.26)	(1.30)
Reason for saving: To finance major purchases	0.033	0.033

	(0.67)	(0.67)
Reason for saving: To finance education of grandchildren/children	-0.073	-0.076
	(1.66)*	(1.71)*
Reason for saving: Inheritance	0.060	0.056
	(1.23)	(1.19)
Reason for saving: State subsidies	-0.012	0.003
	(0.03)	(0.08)
Riester pension	0.168	0.180
	(2.04)**	(2.19)**
Saving capacity	0.012	-0.029
	(0.1)	(0.23)
Constant	-3.217	-3.731
	(6.13)***	(7.42)***
Number of observations	2255	2255

Note: Absolute value of the z statistics in parentheses.
* Significant at 10% confidence interval, ** Significant at 5%, *** Significant at 1%

Contrary to the previous estimate of the Riester pension, people with a general university entrance qualification probability are more likely to have made alternative provision for old age. As one might expect this also applies to the self-employed who, for the most part, are not eligible for direct subsidies. Unmarried households are less likely to have a private pension. The number of children has no influence on whether these households used non-subsidised products to make provision for their old age or not. This is not surprising and merely reflects the greater attractiveness which child-related allowances give to Riester pensions. The age effect is qualitatively similar to the results for the Riester pension.

Income and asset effects, on the other hand, are much more striking. The two lowest quintiles of income distribution show a significantly lower probability of saving to an alternative form of pension than for the middle income quintile. In contrast to the Riester pension, the amount of assets held also has considerable explanatory power in this estimate.

Lack of awareness of projected levels of income in retirement also correlates negatively with old-age pension provision in this context.

The savings motive is largely insignificant. In contrast to the Riester pension, this also applies to the acquisition of property and the wish to bequeath assets as important reasons for saving. The positive coefficient with the saving for old age motive also shows that, as far as old-age pension provision is concerned, expressed attitudes to savings correspond with actual behaviour. As expected "financial support from the state" is insignificant in terms of savings motives given that these forms of saving do not attract subsidies anyway. In contrast, this savings motive was seen be significantly positive in the multivariate analysis of the Riester pension. Households are therefore clearly able to distinguish between forms of saving which

qualify for state subsidy and those which do not: Households for which such support is important make very conscious decisions in favour of the relevant products.

6. Conclusions

Experience with the Riester pension in Germany reflects developments in other countries where the introduction of new forms of subsidised saving have needed time before really taking off. It took more than ten years in the USA, for example, before Individual Retirement Accounts (IRA) were really accepted by people in the top two-third income brackets. The current proliferation of Riester pension plans is highly dynamic, however, and current rates of growth outstrip by far the steady growth experienced in the USA. Further growth is therefore probable and it is consequently too early to draw final conclusions about public acceptance of the Riester pension. Researchers have differing views on whether the dynamic spread of Riester pensions is due to the financial incentives available, the availability of information or the marketing efforts made by the relevant sales channels.

It is striking that the acceleration in Riester saving only really kicked in after ***substantial simplifications*** had been made to the scheme. This contraindicates complex savings models which are not immediately understood by customers. It also takes time to make up for the damage which may be caused by excessive complexity – even such complexity is merely 'felt' to be such by the customer.

The target group which is best reached is that of parents with more than one child. Bearing in mind the substantially higher child allowance of €300 per child which will be available for children born after 2008 Riester pension plans will almost certainly become more widespread among (new) parents and one-child families. It remains to be seen whether this subsidy results in free rider effects with beneficiaries switching from existing savings vehicles to the subsidised old-age pension products or whether it stimulates additional saving.

In terms of income levels, administrative data on allowance beneficiaries based on their previous year's earned income shows that people on low (below average) wages make up a large (almost 70 per cent) share of this group. The SAVE data on disposable *household* income tells another story: the proportion of Riester pensioners is much lower in the lowest quintile of household income distribution, in particular, than in the middle and upper income brackets. The considerable financial incentives provided by the allowances alone do not appear to exercise a strong enough – or only a highly delayed - incentive effect on people on very low incomes.

Households with higher levels of educational attainment are more likely to make use of Riester subsidies than people who leave school with a lower secondary school qualification and in particular than respondents who have not completed any vocational training. The fact that awareness of the level of future pension income correlates positively with provision for private old-age pensions points in the same direction. The key to achieving high take up rates is information or knowledge about the necessity of and arrangements relating to old-age pension provision.

Saving motives have ***displacement effects***. Households for which the desire to purchase property provides an important motivation for saving are less likely to have a Riester pension plan. The withdrawal scope offered by the Riester pension arrangements clearly do not provide these households sufficient options to persuade them to make provision for old age alongside and parallel to their objective of buying property. The withdrawal model is clearly not capable of remedying this displacement effect. Furthermore, households who indicate a high importance to the bequest motive are less likely to own a Riester pension contract.

This crowding out is not apparent in the evaluation of saving motives provided by the households (Börsch-Supan et al. 2006). Although this appears to contradict the previous point above, this inconsistency can be quickly resolved given that motives reflect respondents' subjective assessments. This is naturally a quite different matter than objective, actual savings made in measurable monetary units to an earmarked savings vehicle designed to fulfil one of the motives in particular. This ***discrepancy between wish and reality*** also has important implications for newly planned forms of saving, such as saving for education which is currently under discussion. Ex ante surveys of savings for educational purposes carried out in order to test their possible impact on saving for old age have only limited predictive value. The available results suggest that the actual displacement effects are likely to be much greater than the intended ones.

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Appendix

Appendix 1: SAVE Questionnaire

1. Did your or your partner hold one of the following types of pension savings contracts in December 200X?

- Occupational pension scheme, e.g. occupational pensions from type A (Pensionsfonds) or type B (Pensionskasse) staff pension fund and provident funds as well as occupational direct pension promises or direct insurance schemes
- State-subsidized private pension scheme ("Riester pension"), i.e. state-promoted and certified savings accounts which cannot be liquidated prior to retirement
- Other contractually agreed private pension scheme, e.g. investment funds geared specifically to the provision of pension cover, private pension insurance policies which are not promoted by the state or which were taken out before such support was available.
- No none of these, or already paid out.

2. What percentage of your anticipated last wage/salary will you receive as your pension from the state pension insurance or civil service scheme?
- Estimated percentage:
- Do not know; not possible to estimate
- Does not apply - I have already retired or I am self-employed

3. If you think back, how well did you and your partner get along with your revenues in the year 200X? Which of the following best describes your experience?
- At the end of the month, there was always a lot of money left
- At the end of the month, there was often some money left
- There was only some money left if additional one-off revenues came in
- Often, there was not enough money left at the end of the month
- At the end of the month, there was never enough money left

Appendix 2: Coverage of old-age provision in the SAVE data

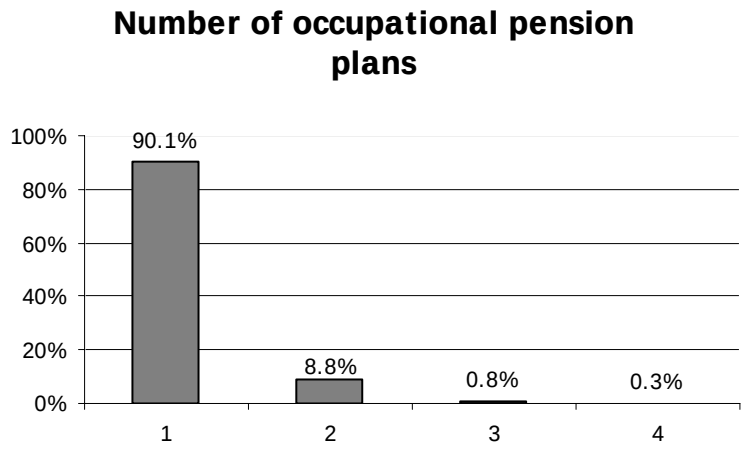
It is well known, however, that micro data derived from household surveys produce much lower asset values than the aggregated asset formation data produced by the Deutsche Bundesbank. This has been impressively demonstrated by Lang (2000) in relation to the income and expenditure surveys conducted by the Federal Statistical Office, and this applies similarly to the SAVE data. This is partly due to the unwillingness of some households to respond to questions as well as to uncertainties about existing amounts; a phenomenon which is also discussed in the context of the SAVE survey by Essig und Winter (2003).[16] For this reason it is important to check coverage using suitable alternative data – although any such comparison inevitably generates methodological problems of its own given that comparative data will be tainted by coverage problems of its own.

The positive development of occupational pensions chimes with the data derived from a survey of employers and insurers undertaken by TNS Infratest (Kortmann and Haghiri 2005). The proportion of households with their own occupational pensions in the SAVE data is significantly lower than the share of employees paying mandatory social insurance contributions found by the Infrastest survey to have an occupational pension. This is due to two differences. Firstly, the share in SAVE relates to all households which have not yet retired – i.e. it includes people who are not in gainful employment, the self-employed, students and tenured civil servants in its statistical population.[17] Secondly, the unit of observation in SAVE is the household – in other words, the respondent and the respondent's spouse. If both partners have an occupational pension, this is only captured in the SAVE data once. It is for this reason that a question about the number of pension plans held was added to the SAVE survey in 2005. Figure 5 shows that on average households hold around 1.1 policies in the area of occupational pensions.

[16] Furthermore, a comparison of the SAVE data with other data sources is provided by Börsch-Supan und Essig (2005); they compute savings rates based on the EVS and SAVE and do not find significant differences between these two microdata sources. Similarly, Essig (2005) compares the income measure of the SAVE-survey with the income measure in the German microcensus and finds that across all age classes, both measures are in high agreement.

[17] If the share in SAVE is related solely to employed heads of household, the figure – of around 20 per cent in 2004 – which emerges may be higher, but is still lower than the share of 59 per cent of employees paying mandatory social insurance contributions and holding an occupational pension produced by the Infratest survey.

Figure 5: Number of occupational pension plans per household



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households. Weighted figures.

Account must also be taken of the fact that SAVE is a representative random sample.

Riester pensions

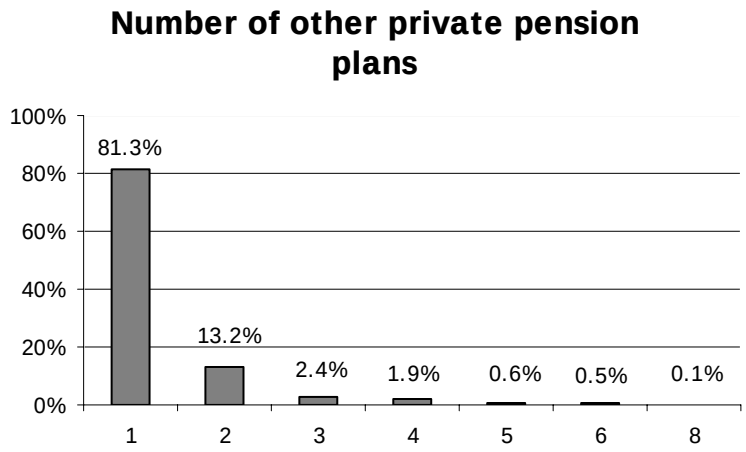
Around 17 per cent of households in the SAVE data held Riester pensions in 2005 and this proportion corresponds with the available data on the total number of pension plans of around 4.4 million. The Federal Ministry of Labour and Social Affairs quotes a figure for the end of 2005 of around 5.6 million Riester pension plans (see above). The difference can again be explained by the use of the household as the unit of observation in SAVE. We count households with at least one policy, whereas the official figures reproduce the total number of all policies taken out. The tax statistics for the year 2002 revealed an average of 1.3 Riester pension plans per taxable unit, and this provides a precise explanation of the difference between SAVE and the total number of policies. In the SAVE data, households have taken out an average of 1.2 Riester pension plans per household.

Other forms of old-age pension provision

Other forms of old-age pension provision which are not subject to government subsidy also include pension policies which were taken out before the subsidy regime was introduced in 2001 and the increasing speed at which Riester pensions have spread among savers between 2002 and 2004 is not therefore surprising. In this case, too, comparisons with external information must take into account the fact that SAVE does not capture the number of policies taken out in total, but registers whether or not a household has at least one private pension policy. Another problem is clearly differentiating Riester pension plans from "other private

pension products". Private pension policies, for example, include policies taken out with pension funds (type A staff pension funds *Pensionskassen* and type B pension funds) or endowment policies with an annuitisation option which households tend to regard as capital forming vehicles. If the figure of 21 per cent of households found in the SAVE data is projected for the population as a whole, around 5.6 million households must hold policies. Evaluations of the SAVE data for 2005 produce a figure of around 1.7 private pension policies per household holding a pension policy, or a total of 9.5 million pension policies in total.

Figure 6: Number of other private pension policies per household



Source: Own calculations based on SAVE 2001, 2003, 2005, 2006, non-retired households. Weighted figures.

The GDV reports that 6.3 million other types of pension policies were taken out in the years 2004 and 2005 alone. This suggests that the figures in the SAVE data probably underestimate coverage in the same way that private invested assets are underestimated in micro data, such as in the official income and consumption survey (EVS). The dynamic spread of these products in this market segment is also accurately captured in SAVE.

All in all, occupational pensions and other private pension policies appear to be underrepresented in SAVE, although there are no other sets of micro data available capable of providing better information. Riester pensions - the object of this analysis - are accurately covered in the SAVE data on the other hand and this suggests that this product is a clearly defined form of old-age pension provision about which households are keenly aware.

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