



MAX-PLANCK-INSTITUT FÜR SOZIALRECHT UND SOZIALPOLITIK
MAX PLANCK INSTITUTE FOR SOCIAL LAW AND SOCIAL POLICY

mea *Munich Center for the Economics of Aging*

**Is it all about access?
Perceived access to occupational pensions in Germany**

Bettina Lamla, Michela Coppola

12-2013

MEA DISCUSSION PAPERS



Alte Nummerierung: 277-13

**IS IT ALL ABOUT ACCESS?
PERCEIVED ACCESS TO OCCUPATIONAL PENSIONS IN GERMANY**

This version: May 2014

Bettina Lamla¹

Max Planck Institute for Social Law and Social Policy

and

Michela Coppola

Max Planck Institute for Social Law and Social Policy

Abstract: This paper provides an empirical analysis of what determines access to occupational pensions as perceived by workers. We investigate this issue in Germany, where workers have the legal right to an occupational pension since 2001, but many might lack the incentive or the ability to gather and process the relevant information in order to make use of their right. In particular, if workers rely exclusively on the information available at their firm, employers will continue to regulate access despite workers' rights. Our findings suggest that the current legislative regulation in Germany has not resolved the problem of workers' ignorance of their access to occupational pensions. Only about half of the workers are aware of having access to an occupational pension. We find that there is important heterogeneity in workers' perceptions and that this heterogeneity is directly related to worker and firm-side factors as well as outcomes of the employer-employee match. Distorted perceptions have important consequences for workers, policy makers, and firms. Workers can only make optimal savings decisions if they are aware of their savings possibilities. Policy makers could help by making information material about occupational pensions mandatory and/or by defining information standards. A low level of knowledge of employees might also be frustrating for employers as this would suggest that workers do not appreciate their occupational pension, limiting the power of occupational pension as a Human Resources tool.

Keywords: occupational pension, perceptions, SAVE, linked employer-employee data

JEL: J26, D83

¹ We thank Axel Börsch-Supan, Tabea Bucher-Koenen, Martin Gasche and Matthias Weiss for helpful suggestions. We also benefited from discussions with Michael Hurd, Helmut Farbmacher and Daniel Schunk. We are grateful to the German Research Foundation (Deutsche Forschungsgemeinschaft) for financing the SAVE survey and the Deutscher Verein für die Versicherungswissenschaft for funding the most recent wave in 2013.

1. INTRODUCTION

Population aging is one of the main demographic challenges of the 21st century. In order to face this challenge, many countries have introduced major reforms. In particular, pension systems have witnessed radical changes: monolithic public pension systems have been gradually replaced by multi-pillar systems, where individuals are required to make private provisions. While individuals are increasingly responsible for securing their own retirement, the adaption of their savings behaviour will take some time. In order to accelerate the take-up of supplementary pensions, two competing strategies were applied (Börsch-Supan et al., 2012): some countries have made supplementary pensions mandatory (e.g. Sweden) while in other countries supplementary pensions remained voluntary, but the incentives to save privately were changed (e.g. Germany).² A large string of literature has developed evaluating the effectiveness of such incentives (e.g. Börsch-Supan, 2004). Although incentives turn out to be powerful determinants of individuals' behaviour (e.g. Samwick, 1998; Gustman and Steinmeier, 2001), several studies find widespread ignorance of pension plan details (e.g. Mitchell, 1988; Gustman et al., 2007; Gustman and Steinmeier, 2005; Luchak and Gunderson, 2000). A possible explanation for this phenomenon is that people respond to incentives according to their individual perception. Chan and Stevens (2008) show that even after controlling for the actual set of financial incentives to take up an occupational pension plan, workers still respond to their perceived incentives. In the extreme case, preferences, even if they are rational, become irrelevant as perceptions determine savings decisions (McFadden, 1999).

The present work further explores this issue by providing an empirical analysis of workers' perceptions regarding their access to occupational pensions. We use Germany as a case study: in order to increase coverage rates, the German pension reform introduced financial incentives

² See Barr and Diamond (2010) for an overview of recent pension reforms.

for the take-up of occupational pensions. Most importantly, a new framework for occupational pensions was defined, providing workers with universal access. As of 2001, every employee has in fact the legal right to convert part of the salary directly into contributions to pension plans. As a consequence, if necessary, the employer is now obliged to set up a scheme where the employee may pay in.³ Has the current regulation in Germany resolved the problem of workers' ignorance regarding their access to occupational pensions? Has the measure been successful in increasing coverage rates? In the past years, participation rates in occupational pensions increased quite dynamically. By now, about 60 per cent of all German employees participate in an occupational pension plan. However, coverage rates differ widely across employers' characteristics (BMAS, 2012b). A possible channel driving the heterogeneity in participation could be the lack of awareness about the access to occupational pensions among workers. Despite the fact that more than 80 per cent of employees work in establishments with an occupational pension plan in place and despite universal access, many workers report the lack of supply as the main reason for not participating in an occupational pension scheme (BMAS, 2012b, p. 41). Apparently, there is a wedge between perceived and actual access to occupational pension schemes.

The aim of our study is to understand which factors promote or hinder pension awareness. In particular, we examine whether a negative perception of access to occupational pensions is associated with factors determined by firm-side or worker-side characteristics, or by the interaction of both. To do so, we use an innovative linked employer-employee data set which combines survey responses of workers on their perceived access to occupational pensions with administrative information on their employment histories as well as administrative information on the firms.⁴

³ Employers themselves however are not obliged to contribute to the pension scheme. See Section 1.1 for further details.

⁴ Throughout the paper we will use the terms "firm" and "establishment" interchangeably.

The paper is structured as follows. Section 1 gives an overview of the key features of occupational pensions in Germany and discusses which factors might influence perceived access to occupational pensions. Section 2 explains the data and samples used for our analysis. The empirical results are presented in Section 3, followed by a discussion of several caveats related to measurement error in Section 4. We conclude in Section 5.

1. INSTITUTIONAL FRAMEWORK AND HYPOTHESES

1.1 OCCUPATIONAL PENSIONS IN GERMANY

Standard economic theory usually highlights the role of occupational pensions as a Human Resource (HR) tool used to regulate employment-related outcomes such as work efforts, turnover of the labour, or retirement decisions (Gustman et al., 1993).⁵ In Germany, there have been profound changes in employers' and employees' roles and risk exposure concerning occupational pensions since 1974, modifying the role of occupational pensions as an HR tool. The traditional employer-centric occupational pension system (Burger and Clark, 2011) has evolved to a more employee-friendly system: initially, all decisions related to occupational pensions were made by employers. In 1974, employees received an occupational pension guarantee and a vesting period of 10 years. In 2001, the Riester reform dramatically changed the institutional setting of the German pension system. With respect to occupational pensions, the reform extended employees' rights including shorter vesting periods and easier portability. An important change introduced by the reform was the legal right of workers to occupational pensions. Since then, workers are entitled to convert part of their salary (up to 4 per cent of the upper earnings threshold for social security contributions) into contributions to occupational pension plans (*Entgeltumwandlung*), unless the employer offers another

⁵ Competing theories exist on the mechanisms through which occupational pensions help employers achieving these goals. Occupational pensions could provide a set of incentives for the employees to behave in a certain way (e.g. Becker and Stigler, 1974; Ippolito, 1985). Alternatively, they could act as a sorting device, attracting workers with desirable characteristics (e.g. Allen et al., 1993; Ippolito, 2002).

occupational pension scheme. In their most basic version, these plans are employee-financed occupational pensions which are guaranteed by the employer.⁶

Employers' contributions to occupational pensions are not mandatory. At the same time, employers can have tax advantages by offering an occupational pension, which strongly depends on the funding vehicle.⁷ Employers can decide how the occupational pension system is structured, but face strong and complex institutional regulations. In particular, conservative investment rules and mandatory reinsurance are supposed to keep the risk for the employees low (Burger and Clark, 2011). Employees participating in an occupational pension scheme benefit from deferred taxation as pension plans are treated according to the "exempt, exempt, taxed" (EET) formula: contributions and investment returns are tax exempt while benefit payments are subject to income tax.

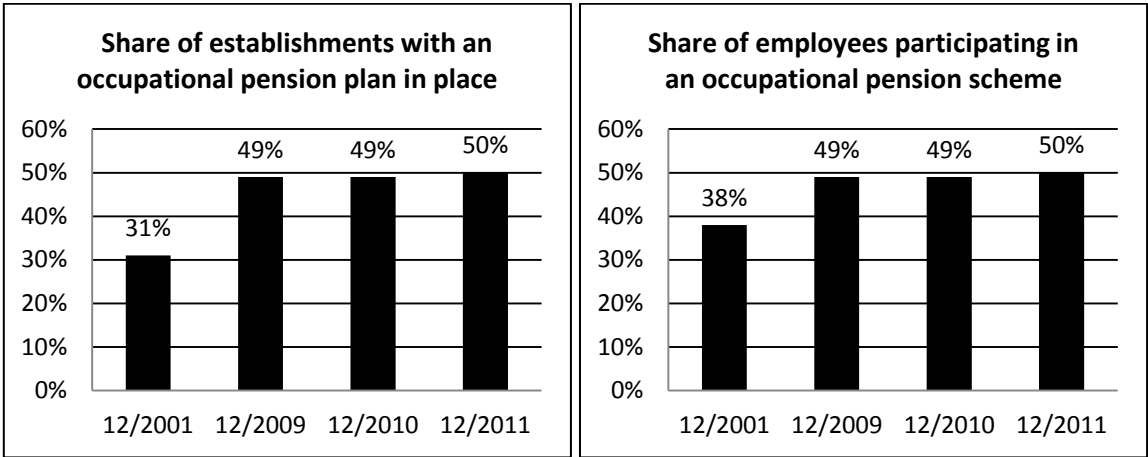
After a continuous decrease in the years before the reform in 2001 (Ruppert, 1994; 2000), the participation in occupational pension schemes expanded during the 2000s. In the private sector, the percentage of establishments with an occupational pension scheme in place increased by 60 per cent, from 31 per cent of all the establishments in 2001 up to 50 per cent in 2011 (Figure 1, left panel), while in the same time span the percentage of employees participating in such schemes increased from 38 per cent to 50 per cent (Figure 1, right panel). Including the employees in the public sector as well, the proportion of employees participating in occupational pension schemes increased from 52 per cent in 2001 to 60 per cent at the end of 2011 (BMAS 2004 – 2012,a).⁸

⁶ At least the nominal value of the contributions has to be guaranteed at the beginning of retirement.

⁷ In Germany, five different funding vehicles exist with distinct advantages and disadvantages. See Pfaffenholz et al. (2005) for an overview.

⁸ The German law splits public employees into two categories, namely ordinary employees and civil servants, making a distinction that does not exist in most other countries. While civil servants do not have access to occupational pensions, ordinary employees in the public sector are mandatorily enrolled in an occupational pension scheme.

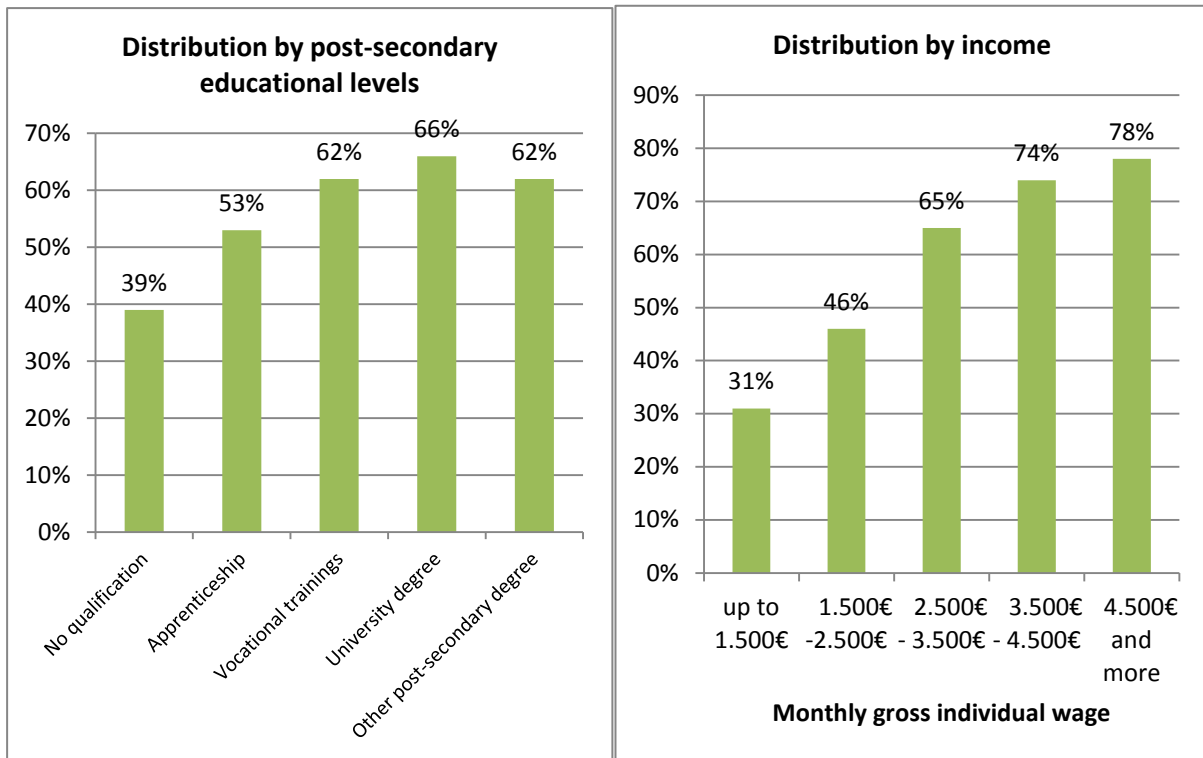
Figure 1 Diffusion of occupational pensions in the private sector only.



Source: BMAS 2004 – 2012, employer survey. Own representation.

There is however substantial heterogeneity in the diffusion of the occupational pensions, both at the employees and at the employers level. Based on an employee survey, the study by BMAS (2012b) documents pension coverage rates by different socio-demographic characteristics: while more than 60 per cent of individuals with an university degree participate in occupational pension schemes, only 39 per cent of those without any professional qualification do so. A similar gradient can be found across income groups (Diffusion of occupational pensions by socio-demographic characteristics. Figure 2, right panel).

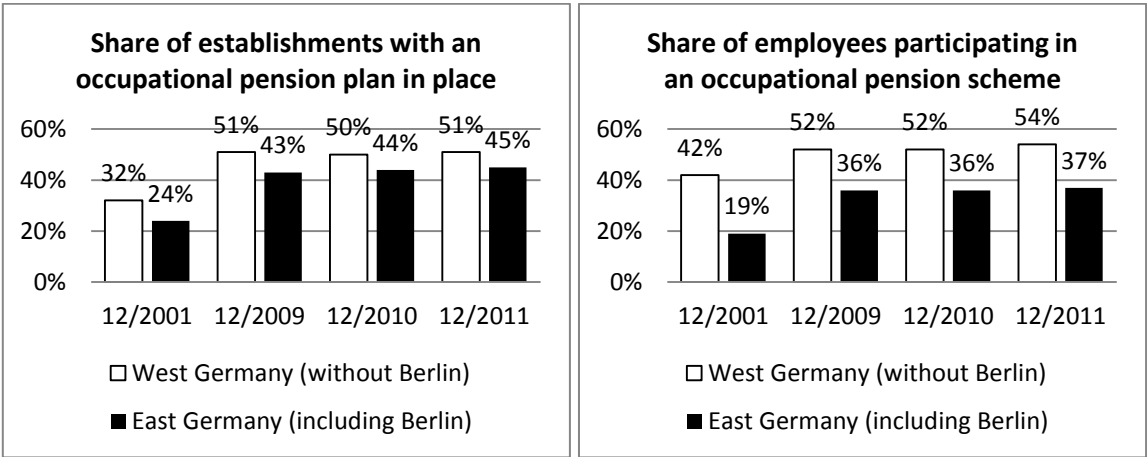
Figure 2 Diffusion of occupational pensions by socio-demographic characteristics.



Source: BMAS 2012b. Own representation.

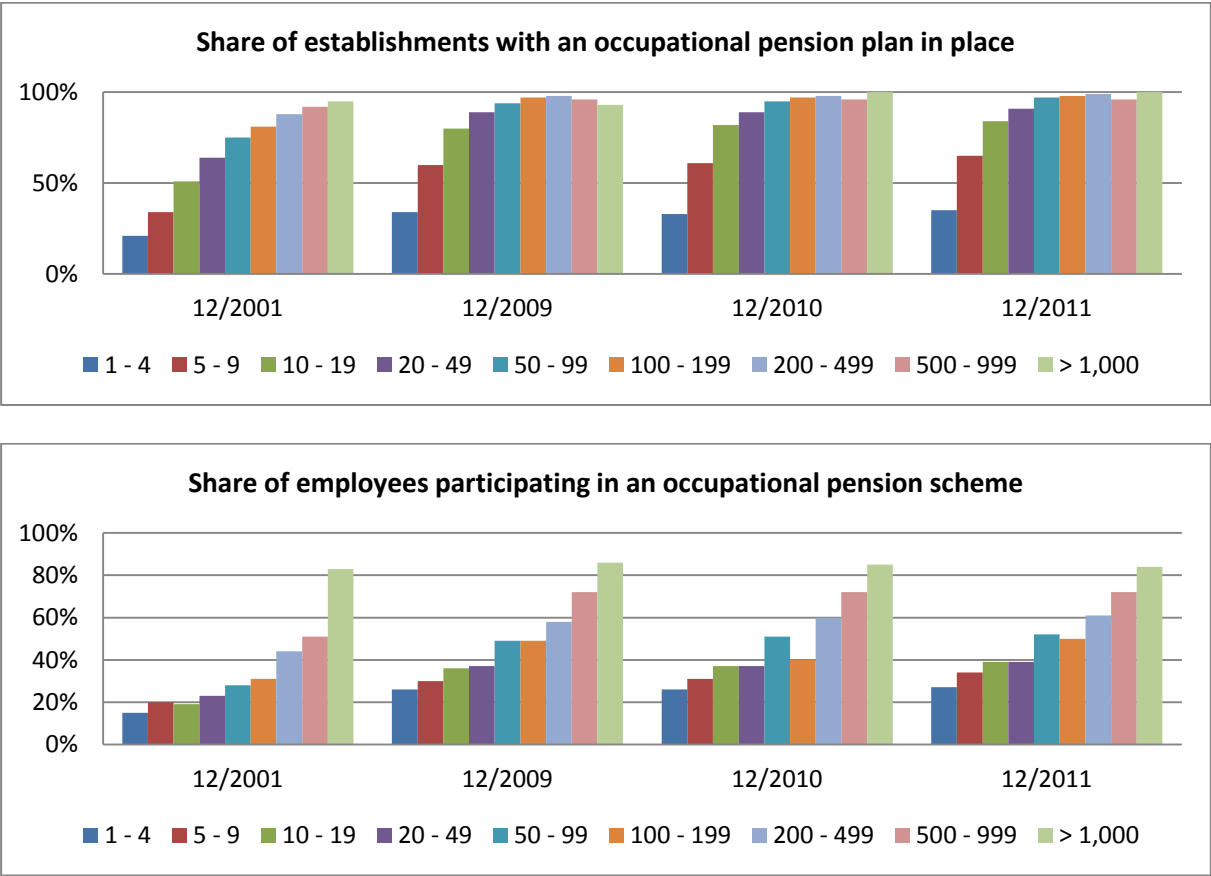
Despite the legal entitlement to occupational pensions, not all employers have set up a scheme yet. There are substantial differences for example concerning the respective business sector (BMAS, 2012a; Statistisches Bundesamt, 2011; Blank and Wiececk, 2012). Furthermore, the share of firms offering an occupational pension scheme is higher in West than in East Germany (Figure 3) and it increases with firm size (Figure 4) (BMAS, 2012a).

Figure 3 Diffusion of occupational pensions in the private sector West vs. East Germany.



Source: BMAS 2004 – 2012, employer survey. Own representation.

Figure 4 Diffusion of occupational pensions in the private sector by firm size (number of employees).



Source: BMAS 2004 – 2012, employer survey. Own representation.

The question remaining unanswered by the existing literature is what drives these differences. One possible channel could be the lack of awareness concerning the access to occupational pensions among workers. The study by BMAS (2012a) presents the most important reasons from the perspective of employers not to offer an occupational pension: many employers name the high costs related to occupational pensions as an obstacle (49%). Similarly, 18 per cent of the employers perceive the administrative burden as too high and occupational pensions as too complicated. 11 per cent say that occupational pensions are not relevant for them due to high turn-over rates resulting from a high share of marginally employed or seasonal workers.⁹ About 4 per cent of the employers are not even aware of the employee right to an occupational pension. However, the perceived lack of demand by employees turns out to be the most important reason for not offering an occupational pension (69%). Interestingly, a recent employee survey identifies the lack of supply as the main reason for employees not to have an occupational pension (BMAS, 2012b, p. 41). Apparently, there is a wedge in perceptions between the two sides of the labour market. The next section will discuss factors promoting and hindering the awareness of pension access.

1.2 FACTORS PROMOTING AND HINDERING PENSION AWARENESS

Germany has introduced a general workers' right to an occupational pension. In a hypothetical world of costless information, workers' knowledge of occupational pensions would be without gap. Employees would know exactly whether they have access to an occupational pension and, if yes, what the characteristics of the available pension plans are. However, gathering and processing information is costly for the worker. Assuming a utility-maximizing decision maker, a worker should first decide how much to invest in acquiring and processing the relevant information about his access to an occupational pension and then,

⁹ Marginally employed workers are employees with an income below the threshold of 450€/month and with reduced social security contributions. These kind of jobs are also called *Mini-Jobs*.

depending on the access, decide if he wants to participate in the available pension plan. By giving every worker the legal right to an occupational pension, the institutional framework in Germany should have reduced the information costs of this first step. However, if the costs of processing information are too high or the expected benefits are too low, it might be rational for some individuals not to collect information about their access to an occupational pension. In particular, many workers will rely exclusively on the information available at the firm and will not gather information on their legal right in order to request an occupational pension. If individuals place too much weight on easily accessible and salient information (McFadden, 1999), employers will continue to have a pivotal role in determining perceived pension access. Furthermore, even if workers are aware of their legal right, they might still perceive occupational pensions as inaccessible in case the (psychological) costs of urging the employer to set up a pension plan are too high. If that is true, then:

H1: Despite the legal right to an occupational pension, German workers underestimate their access to occupational pension schemes.

We expect individuals to differ in the degree to which they are aware of their possible savings opportunities and thus in the way they perceive their access to occupational pensions. Applying the same conceptual framework presented by Mitchell (1988), we expect perceived pension access to be explained by characteristics of employers and employees as well as their interaction. Within such a framework, we want to test the following hypotheses.

Workers' educational attainment and financial sophistication should be associated with a higher ability to understand the legal rights and tax benefits from occupational pensions. Consequently, we expect that:

H2: Education and financial knowledge are positively associated with perceived pension access.

In addition, workers' savings preferences should affect the incentives to gather information. On the one side, workers with strong preferences for saving might be more interested in learning about their access to occupational pensions as an additional savings tool. On the other side, workers who already provide for their old age through other savings instruments might have lower incentives to gather information on their access to an occupational pension. Thus, the relationship of savings preferences with perceived access remains an empirical matter.

Characteristics determined by the employer-employee match also affect workers' perceived access. Knowing whom to contact in the HR department in order to ask for information and explanations can facilitate the acquisition of the relevant knowledge. Such firm-specific knowledge should increase with tenure (Mitchell, 1988). Consequently, we formulate the following hypothesis:

H3a: The longer the worker is employed at the firm, the more likely he is to report pension access.

We expect tenure to have an additional effect on workers who change jobs more frequently. On the one hand, individuals who exhibit high job mobility might fear the capital loss imposed by job changes before pensions are vested and due to limited portability. On the other hand, job mobility might have a positive effect on the quality of the employer-employee match (Widerstedt, 1998). Workers who expect to stay longer with their current employer due to the good match should not anticipate capital losses. Therefore, we expect that:

H3b: For workers who exhibit high job mobility, tenure has a supplementary effect on perceived pension access.

Employers can regulate the amount and the quality of the information provided for their employees (Mitchell, 1988; Ghilarducci, 1990). High-income earners might be the elite the

employer wants to retain, so that employers' contributions are usually higher for these workers. For the same reason, employers might put more effort in promoting occupational pensions among high-income earners, thus raising their awareness. We propose that:

H4: Income is positively associated with perceived pension access.

Setting up and administering an occupational pension plan requires considerable administrative effort (Greer et al., 1999; BMAS, 2012a). Thus, firms that can exploit technical efficiencies in producing and disseminating information are more likely to raise awareness among workers (Mitchell, 1988). In contrast, if firms are less efficient in their administrative processes, they might be less likely to inform their workers about their right to participate in an occupational pension. For such firms setting up an occupational pension scheme represents an additional effort they want to avoid. In particular, the costs of producing and disseminating information about the access to occupational pensions could be too high for such firms. In our work we will use the negligence in complying with administrative duties as a proxy for the firm's lack of administrative efficiency.. Consequently, we argue that:

H5: Working for a firm that is diligent in complying with administrative duties increases the probability to be aware of pension access.

Larger firms can exploit economies of scale by setting up and managing pension plans (Mitchell, 1988), reducing their costs, and increasing the administrative efficiency accordingly. This leads to our sixth hypothesis:

H6: Working for a large firm increases the probability to be aware of pension access.

The more relevant occupational pensions are for the HR concept of the employer, the more plentiful the information provided to the employees ought to be. Recent studies have shown that marginal workers represent substitutes for regular jobs in production (Jacobi and Schaffner, 2008). Thus, binding workers might be less relevant for firms if marginal workers are prevalent. In addition, the effectiveness of the HR concept depends on employees'

valuation of occupational pensions (Gustman et al., 1993). If the employer anticipates a low demand for occupational pensions based on the prevalent labour force structure, the provision of information ought to be less efficient. Consequently, our seventh and final hypothesis states that:

H7: Working for a firm with a high share of marginal workers decreases the probability to report pension access.

The next section presents the data and samples used in order to verify our hypotheses.

2. DATA AND SAMPLES

2.1 SAVE STUDY

The analysis is based on the German SAVE study, a longitudinal survey of private households initiated in 2001 and run on an annual basis since 2005. The main goal of the study is to create a sound empirical base to understand households' savings behaviour.¹⁰ The questionnaire is answered by the person who is best informed about household's financial situation ("reference person").

The wave 2011 of the SAVE study is used to test the feasibility of a triple-linkage-strategy, creating a linked employer-employee data set which combines survey and administrative data.¹¹ The respondents (and their partners) were asked for written consent to link the survey data with their administrative records stored at the Federal Employment Agency via their Social Security number. These records contain information on workers drawn from the so-called Integrated Employment Biographies (Dorner et al., 2010) and firms taken from the Establishment History Panel (Spengler, 2008; Gruhl et al., 2012). All individuals who have

¹⁰ See Börsch-Supan et al. (2009) for more information on SAVE. In order to prevent bias due to item non-response, missing values in the survey are imputed using a multiple imputation procedure based on a Markov Chain Monte Carlo simulation (Schunk, 2008; Ziegelmeier, 2009; 2013).

¹¹ See Coppola and Lamla (2012; 2013b) for further details on the linkage process.

worked at least one day as an employee paying social security contributions in Germany are included in the administrative records.

2.2 MEASURING PERCEIVED PENSION ACCESS

Information on the perceived access to an occupational pension is extracted from the survey answers. In SAVE 2011, specific questions on access to occupational pension schemes have been introduced in the questionnaire. First, respondents are asked if the current employer offers an occupational pension. Individuals who are already retired or who are working as civil-servants or self-employed do not answer the question as this feature does not apply to them. In a follow-up question, those respondents who report having access to an occupational pension are asked if they participate in the available pension scheme.

In the wave run in 2013, the question on access to occupational pension schemes has been extended. Individuals who report working in firms with no occupational pension schemes in place are asked if they would – hypothetically – like to participate in an occupational pension.¹²

2.3 SAMPLES

In our empirical results in Section 3 we use three different samples. Section 3.1 answers the question if German workers are aware of occupational pension plans being in place at their establishment. Thus, individuals who are already retired or who are working as civil-servants or self-employed are excluded from our analysis. Out of the 1,660 households who participated in the wave 2011 of the SAVE study, 755 are employees.

In Section 3.2 we investigate the determinants of pension access using worker and firm characteristics as well as their interaction. However, both data on employers and on the employment histories of the employees are available only for the respondents who agreed to

¹² In the question we ask about the establishment. An English translation of the questions (as well as the original text) can be found in APPENDIX 1: RELEVANT QUESTIONNAIRE ITEM.

the record linkage. The multivariate analysis is therefore restricted to respondents who consented to data linkage. In total, 956 households signed and sent back at least one consent form, leading to a consent rate at the household level of about 58 per cent.¹³ Despite the small sample size, German workers and firms seem to be well represented (see APPENDIX 2: REPRESENTATIVENESS OF THE LINKED SAMPLE).¹⁴ For our analysis, we further restrict the sample to respondents who have been working as employees (not as civil servant or self-employed) in 2010. Consequently, 286 observations are left for the multivariate analysis.

Section 3.3 addresses an important policy question: Will higher pension awareness increase pension coverage? For this analysis we use the 2013 wave. Out of the 1,430 respondents who participate in the survey 2013, almost 600 answer this question because they currently work as employees. The evidence provided in Section 3.3 is based on this subsample.

A description of the variables used in the following empirical analysis as well as their link to the hypothesis sketched in Section 1.2 is provided in Table A. 1 in APPENDIX 3: VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS. Table A. 2 provides some descriptive statistics for the three subsamples used in this paper .

3. EMPIRICAL RESULTS

3.1 PERCEIVED ACCESS AND PENSION COVERAGE

This chapter presents our empirical findings. As a first interesting result, we discover that 47 per cent of the SAVE respondents report to have access to an occupational pension, 46 per cent say that they do not have access, while a fraction of 7 per cent of the respondents does not answer the question or choose the “do not know” option (see Figure 5). According to indirect estimates based on an employer survey, about 86 per cent of the employees in

¹³ In contrast to Coppola and Lamla (2013b), we do not restrict our analysis to the Random Sample.

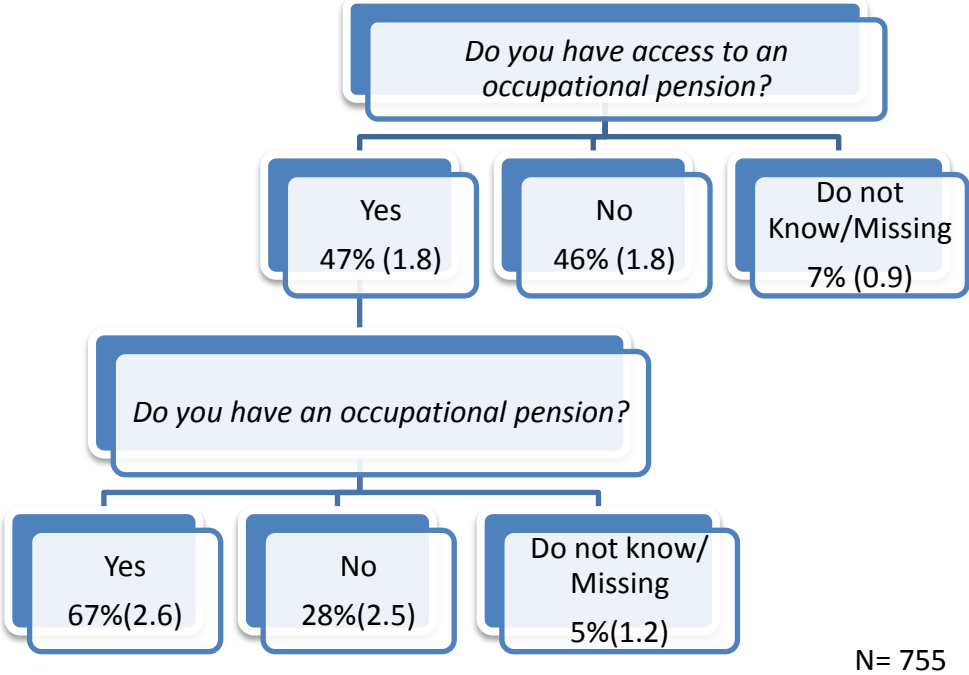
¹⁴ Section 4 discusses potential problems due to selectivity.

Germany actually work in firms where an occupational pension scheme is already in place.¹⁵ Clearly, individuals have distorted perceptions of their access to occupational pension, underestimating it. Due to the longitudinal character of the survey, our sample might be biased toward those individuals who are more interested in saving and therefore are also more aware of the various saving opportunities. In that case the extent to which individuals underestimate their access to occupational pensions might be even bigger than our data suggests.

Conditional on access, 67 per cent of the workers say that they participate in a pension plan. Consequently, 31 per cent of the workers in the sample are covered by an occupational pension. It is difficult to judge the representativeness of the estimated coverage rates. The conditional coverage rate tries to avoid undercoverage due to a low level of information by workers which is typical when surveying employees (BMAS, 2012b). However, measurement error might be quite severe in both questions, the one referring to access and the one referring to ownership. In contrast, the overall coverage rate is relatively low. That in turn might be due to the fact that in SAVE, we only ask about occupational pension benefits acquired at the current employer.

¹⁵ See APPENDIX 3: VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS, Table A. 4 Table A. 4 for the calculations.

Figure 5: Occupational pension access and coverage rates in SAVE 2011 (s.e. in parentheses).



Source: SAVE 2011. Own calculations.

3.2 DETERMINANTS OF PERCEIVED ACCESS

Worker characteristics

Table 1 reports our estimation results. We find that women are significantly more likely than men to report access to an occupational pension. This notion is supported by the results by Mitchell (1988) who finds that women are better informed about several aspects of their occupational pension plans than men are. We do not find significant differences in perceived access by age.

In contrast to one part of our expectations leading to hypothesis H2, differences in the educational attainment are not systematically associated with perceived access once we control for the financial knowledge of the worker. This might indicate the requirement of a more specialized knowledge than the skills learnt at school. In particular, if a significant

number of workers do not gather information exceeding the employer provided ones, specific (as opposed to general) human capital will be more important for the perceived access.

At the same time, our results show that workers being more familiar with basic financial concepts are also more receptive to information about access to occupational pension plans, which supports our second hypothesis H2.

Workers who believe that saving for the old-age is important and those who already own some other form of private old-age provision are not more likely to report access to an occupational pension. This might reflect the ambiguous effect that workers who are more interested in retirement planning are also more likely to have good replacement rates due to private pensions they already own and thus might not gather information on occupational pensions.¹⁶ This idea is confirmed by results presented in Börsch-Supan et al. (2008) who show that the decisions to participate in voluntary private savings plans and to participate in an occupational pension are negatively correlated.

Outcomes of the employer-employee match

As proposed by hypotheses H3a and H3b, the relationship between tenure and perceived access is heterogeneous, depending on job mobility of the worker: for the reference group, workers who have experienced medium employer changes in their career, tenure is significantly and positively correlated with perceived pension availability. This supports the notion that specific human capital is important in order to acquire the relevant information from the employer (Mitchell, 1988). It might also mean that tenure reduces the costs of asking for an occupational pension. In addition, the interaction between past employer changes and tenure at the current employer is significant for workers who have changed their employer quite often. For these workers, an additional year at the current employer has a supplementary

¹⁶ Results do not change when we include only one of these indicators.

effect in comparison to workers who have experienced only medium changes. Past job mobility is not necessarily detrimental as it may increase the quality of the job-match (Widerstedt, 1998). Workers with many changes might have found a good employer-employee match. They might therefore desire to stay longer at the current firm, which should positively affect the incentive to gather information on occupational plans.

As occupational plans are traditionally used to attract and retain qualified workers, high-income earners might have both access to better information and higher incentives to become informed. Our results provide evidence in support of hypothesis H4: workers from the lower tail of the income distribution (1st and 2nd income quartile) are less likely to be aware of an occupational pension in comparison to workers in the 3rd income quartile. In addition, high-income earners from the 4th income quartile are significantly more likely to be aware of the availability of pension plans in comparison to the reference group.

Firm characteristics

The multivariate analysis confirms a significant association between the level of negligence of the firm in complying with administrative duties and perceived access to occupational pensions (hypothesis H5). Workers employed at firms that are less precise in complying with the data requests of the Federal Employment Agency are systematically less likely to report access to occupational pensions.¹⁷ To the extent to which this indicator captures firms' inefficiencies in administrative processes, the result indicates that employers' administrative effort to set up and manage pension plans might be one of the main obstacles in raising awareness about access to occupational pensions among workers.

¹⁷ As reported in Table A. 1, an indicator variable which equals 1 if the employer failed to report the educational level of the worker to the Federal Employment Agency (see Fitzenberger et al. (2006) for further details). Although firms are required to report this information, they incur no consequences if they fail to do so. That is because employees' education has no relevance in determining social security benefits. Consequently, not all the firms report this information. Thus firms who do not comply with this administrative duty are considered to be more negligent.

In contrast, our sixth hypothesis H6 is not confirmed: we do not find a significant association between firm size and perceived access, once we control for other firm characteristics.

The results in Table 1 indicate that the share of marginal workers in the firm is significantly related to perceived access to occupational pensions. Respondents working for firms that employ a high share of marginal workers are significantly less likely to report the existence of an occupational pension scheme at their workplace. A relatively high share of employers name the high turn-over of labour due to marginal workers and seasonal workers as a reason not to offer an occupational pension (BMAS, 2012a). As argued above, they might not use pensions as a device to manage work effort or turn-over and thus might not be interested in promoting pension awareness (hypothesis H7).

Lastly, we control for the business sector of the firm (aggregated in 13 categories). However, the coefficients on these indicators are jointly insignificant. Overall, firm characteristics seem to play a crucial role for workers' perceived access to an occupational pension, significantly improving the model fit: the adjusted R-squared increases from 35 per cent to 46 per cent.¹⁸

Summing up, we have shown that German workers underestimate their pension access. We have found significant heterogeneity in workers' perceptions indicating that social policy should target workers and firms in order to drive awareness. The question that remains unanswered is whether pension coverage increases if workers were aware about their access. The following section provides some evidence to answer this question.

¹⁸ Result available upon request.

Table 1 Determinants of perceived access to occupational pensions –

Results after OLS regression.

| dep. var. Access to an occupational pension (1/0) | |
|---|----------------------|
| <i>worker characteristics</i> | |
| female | 0.102 * [0.06] |
| living (working) in East Germany | -0.085 [0.05] |
| age | 0.001 [0.00] |
| basic education (ISCED 2) | 0.073 [0.13] |
| secondary education (ISCED 3) | ref. |
| post-secondary education (ISCED 4) | -0.024 [0.07] |
| tertiary education (ISCED 5) | 0.013 [0.07] |
| financial literacy index | 0.060 * [0.03] |
| savings motive "old-age" is important | 0.005 [0.06] |
| own private old-age provision | 0.016 [0.05] |
| <i>outcomes of the employer-employee match</i> | |
| few employer changes | 0.021 [0.09] |
| medium employer changes | ref. |
| many employer changes | 0.026 [0.08] |
| tenure at current employer (years) | 0.011 * [0.01] |
| few employer changes * tenure | -0.008 [0.01] |
| medium employer changes * tenure | ref. |
| many changes * tenure | 0.022 * [0.01] |
| income: 1st quartile | -0.221 *** [0.08] |
| income: 2nd quartile | -0.297 *** [0.07] |
| income: 3rd quartile | ref. |
| income: 4th quartile | 0.200 *** [0.07] |

Table 1 Determinants of perceived access to occupational pensions –
Results after OLS regression (continued).

| dep. var. Access to an occupational pension (1/0) | |
|---|----------------------|
| <i>firm characteristics</i> | |
| firm did not report education of the worker | -0.132 * [0.07] |
| small firm | -0.070 [0.06] |
| medium-sized firm | ref. |
| large firm | 0.029 [0.06] |
| low share of marginal workers | -0.050 [0.06] |
| medium share of marginal workers | ref. |
| high share of marginal workers | -0.382 *** [0.07] |
| business sector | Yes |
| constant | 0.415 ** [0.17] |
| R-2 | 0.528 |
| Adj. R-2 | 0.464 |
| N | 286 |

Source: linked SAVE. Own calculations.

Notes: Standard errors in brackets. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

3.3 DISCUSSION: IS IT ALL ABOUT ACCESS?

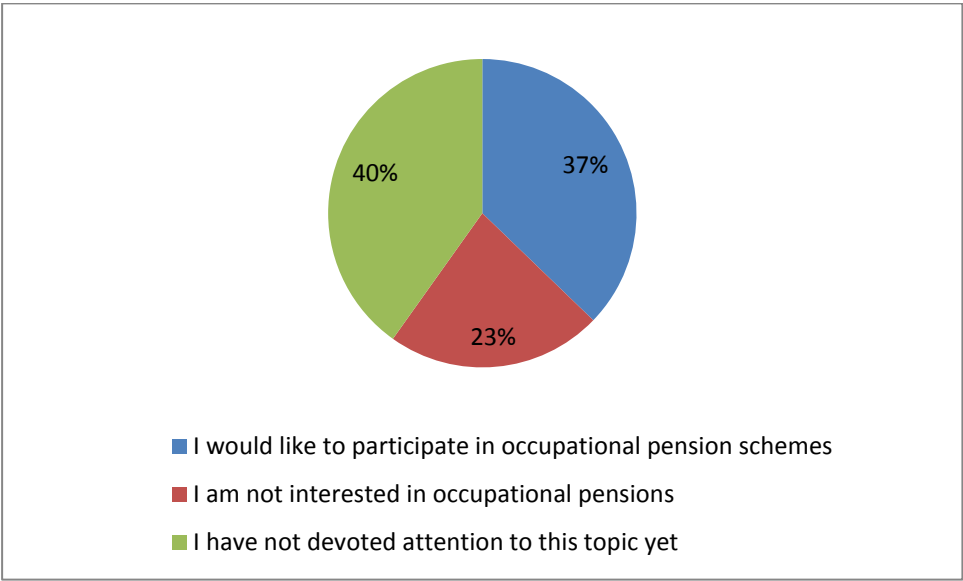
The results in the previous section showed that many workers underestimate their access to occupational pensions. Therefore, a straight-forward policy conclusion is to improve the availability of information and to enhance pension knowledge. However, we cannot observe the counterfactual situation: Would these workers participate in an occupational pension if it was offered to them? A credible identification strategy would require to exogeneously raise pension awareness by offering information to one group of employees, given a comparable control group that does not receive this information. For instance, Duflo and Saez (2003) evaluate evidence from a field experiment, offering individuals financial incentives to attend a

retirement fair. They find that these incentives increase individuals' willingness to obtain information on retirement plans and to enrol in a programme. Interestingly, this applies to the treated individuals as well as to fellow-workers. Using our data, we cannot provide a similar analysis which unambiguously isolates the causal effect of information on coverage.

One way to address the issue is to ask employees who report to have no access if they were interested in participating in an occupational pension scheme.¹⁹ A relative majority of 40 per cent answers to have not yet devoted attention to the topic, while 23 per cent states to have no interest in participating in an occupational pension. Interestingly, about 37 per cent of the respondents, report that they would like to participate in an occupational pension if it was possible (Figure 6). While the data do not allow us to understand if those individuals simply ignore their right to salary conversion or if the psychological costs to urge their employer to set up such a scheme prevent them from using their right, we conclude that there is a wedge between the desire to participate in an occupational pension scheme and the perceived access of workers. This result casts doubt on the assumption that workers simply need more information about their access in order to increase coverage rates.

¹⁹ In the sample 2013, 49 per cent (s.e. = 2.0) of the respondents reported to have access to occupational pensions, 38 per cent (s.e.=1.9) reported no access and about 12 per cent (s.e. = 1.3) did not answer the question or chose the "don't know" option. In comparison with the sample 2011 a slightly higher percentage of respondents is aware of occupational pensions being in place at their firm, although the differences are not statistically significant.

Figure 6: Interest in participating in occupational pension plans for individuals reporting no access to occupational pensions.



Source: SAVE 2011. Own calculations.

4. CAVEATS

In this section, we discuss a number of potential problems related to different sources of measurement error. One important caveat is that the information on pension access relies on survey responses. While the self-reported data is useful because it reflects what workers believe about their access to occupational pensions, it also contains substantial measurement error. A related caveat is that the analysis treats workers who claim that they do not have access to an occupational pension and those who do not give an answer as being the same. As a robustness check, we have estimated our model excluding “do not know” and missing answers from the analysis. The results remain similar and are available upon request.

Being a longitudinal study SAVE suffers from selective attrition so that individuals with higher socio-economic status are more likely to remain in the panel (Coppola and Alt,

2012).²⁰ Moreover, the linkage procedure requires written consent by respondents. It is quite likely that neither survey response nor consent occurred randomly across the potential sample and might have introduced endogeneity in the equation explaining perceived access. Comparing the entire sample of workers in SAVE to the sub-sample of consenting workers, we find that consenters are significantly older, less often female, live more often in the East of Germany, have higher financial literacy and have less often only basic education (see APPENDIX 3: VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS, Table A. 2). We do not control for a possible selection bias and all we can do is to warn the reader.

The analysis is exploratory in its approach, relying on imprecisely measured information about costs and benefits related to information about occupational pension for both sides of the labour market. Without additional information we cannot disentangle the effects of incentives, ability, and the availability of information on perceived pension access. No currently available data set meets the necessary requirements as described in Gustman and Mitchell (1990) and Coppola and Lamla (2012). Consequently, we were forced to deal with a series of data limitations and the results are likely to be sensitive to the sample. Despite these caveats, we can draw important conclusions which are presented in the concluding section.

5. CONCLUSION

In the German pension system individuals are free to decide if they want to take up supplementary pensions. Yet, individuals can only respond to incentives they are aware of (Chan and Stevens, 2008). Despite the fact that a vast majority of workers is employed in establishments with occupational pension schemes in place, many workers report to have no access to occupational pensions. There is important heterogeneity in how workers perceive access, and this heterogeneity is directly related to worker and firm characteristics as well as

²⁰ In 2011 43 per cent of the respondents that entered the panel in 2005 and 39 per cent of those entering the panel in 2006 took part in the survey.

to outcomes of the employer-employee match. Awareness of occupational pensions is higher among workers with good levels of financial knowledge and women. Tenure has a positive effect on perceived pension access, with a supplementary effect for those workers who experienced many employer changes. In addition, working for a firm that does not fully comply with the information requests of the Federal Employment Agency is negatively associated with pension awareness. Moreover, those working for firms with a low number of marginal workers are more likely to report access to an occupational pension.

Our findings suggest that the current regulation in Germany has not resolved the problem of workers' ignorance regarding their access to occupational pensions. In particular, if many workers rely exclusively on the information provided to them by their employers, they will not gather additional information on their legal right in order to request an occupational pension. In addition, the paper has demonstrated the usefulness of self-reported survey data in combination with administrative data. Yet, key aspects are missing in our data set. Therefore, we conclude that there is an urgent need for more refined data in order to understand individual responses to retirement incentives, with survey and administrative data being complements rather than substitutes (Chan and Stevens, 2008).

The behavioural consequences of wrong perceptions have important implications for individuals, firms and policy makers: individuals can only make optimal savings decisions if they have access to information which they are able to understand. Madrian und Shea (2001) demonstrate that the decision for or against specific pension products depends to a large extent on how the different products are presented. Policy makers could help by making information material about occupational pensions mandatory and/or by defining information standards as recently introduced for so-called Riester pensions (see Gasche et al., 2013). Financial education is often presented as a tool to enhance consumers' abilities in dealing with financial issues. Yet, the groups at most risk are arguably the hardest to reach (Lusardi et

al., 2013). Thus, it remains an open question if providing more information will alter the savings behaviour of workers. A low level of knowledge of employees might also be frustrating for employers as this suggests that workers do not appreciate their occupational pension (Luchak and Gunderson, 2000). Many employees do not even seek information about pensions during the recruitment process (Clark and Pitts, 1999), limiting further the power of occupational pensions as an HR tool. Thus, not only employees but also employers might lack the incentive to deal with issues related to occupational pensions. Additional research is needed to investigate causal relationships between the regulatory framework and the cost and benefits of occupational pensions for both sides of the labour market. We consider our paper as a first step in this direction.

APPENDIX 1: RELEVANT QUESTIONNAIRE ITEM

ACCESS TO OCCUPATIONAL PENSION PLANS (SAVE 2011 AND SAVE 2013)

Original text

Eine betriebliche Altersversorgung – im öffentlichen Dienst auch: Zusatzversorgung – liegt vor, wenn Sie über Ihren Arbeitgeber eine Anwartschaft auf Versorgungsleistungen im Alter erwerben, die später als monatliche (Betriebs-)Rente oder einmalige Kapitalsumme ausgezahlt werden. Die Finanzierung kann über Ihren Arbeitgeber oder über Beiträge von Ihnen aus Lohn und Gehalt (z.B. Entgeltumwandlung) erfolgen.

Bietet der Betrieb bzw. die Dienststelle, in dem/der Sie bzw. Ihr(e) Partner(in) derzeit arbeiten, eine betriebliche Altersversorgung oder eine öffentliche Zusatzversorgung an?

Dies kann in Form einer Direktzusage, einer Direktversicherung, einer Pensionskasse, eines Pensionsfonds oder einer Zusatzversorgung im öffentlichen oder kirchlichen Dienst geschehen.

| | Sie selbst | Ihr Partner/ Ihre Partnerin |
|---|--------------------------|--------------------------------|
| Ja | <input type="checkbox"/> | <input type="checkbox"/> |
| Nein | <input type="checkbox"/> | <input type="checkbox"/> |
| Trifft nicht zu, derzeit Beamter, selbstständig oder nicht mehr erwerbstätig | <input type="checkbox"/> | <input type="checkbox"/> |
| Weiß nicht | <input type="checkbox"/> | <input type="checkbox"/> |

→ Frage 29

Source: SAVE 2011 and 2013. The questionnaire is available at www.mea.mpisoc.mpg.de.

English translation

You are entitled to an occupational pension – or a supplementary pension in the public sector – if you have acquired rights to pension benefits in old age via your employer that are later paid out in terms of a monthly (occupational) pension or as an aggregate principal amount. Financing may be effected through your employer or through contributions deducted from your wage or salary (e.g. through the conversion of earnings into pension contributions).

Does the establishment where you and respectively your partner are currently working offer an occupational pension or supplementary pension in the public sector?

That can be in the form of book reserves, direct insurance, “Pensionskasse”, “Pensionsfonds” or a supplementary pension in the public sector.

| | You | Your partner |
|---|--------------------------|--------------------------|
| Yes | <input type="checkbox"/> | <input type="checkbox"/> |
| No | <input type="checkbox"/> | <input type="checkbox"/> |
| Does not apply, currently a civil servant, self-employed or not employed | <input type="checkbox"/> | <input type="checkbox"/> |
| Do not know | <input type="checkbox"/> | <input type="checkbox"/> |

INTEREST IN PARTICIPATING IN OCCUPATIONAL PENSION PLANS (SAVE 2013)

Original text

Würden Sie gern Ansprüche auf eine betriebliche Altersvorsorge erwerben?

Ja

Nein → Frage 36

Ich habe mich mit dem Thema noch nicht beschäftigt

Source: SAVE 2013. The questionnaire is available at www.mea.mpisoc.mpg.de.

Note: The question is asked only to individuals answering “No” or “Don’t know” to the question about access to occupational pension plans.

English translation

Would you like to acquire entitlements from an occupational pension scheme?

Yes

No

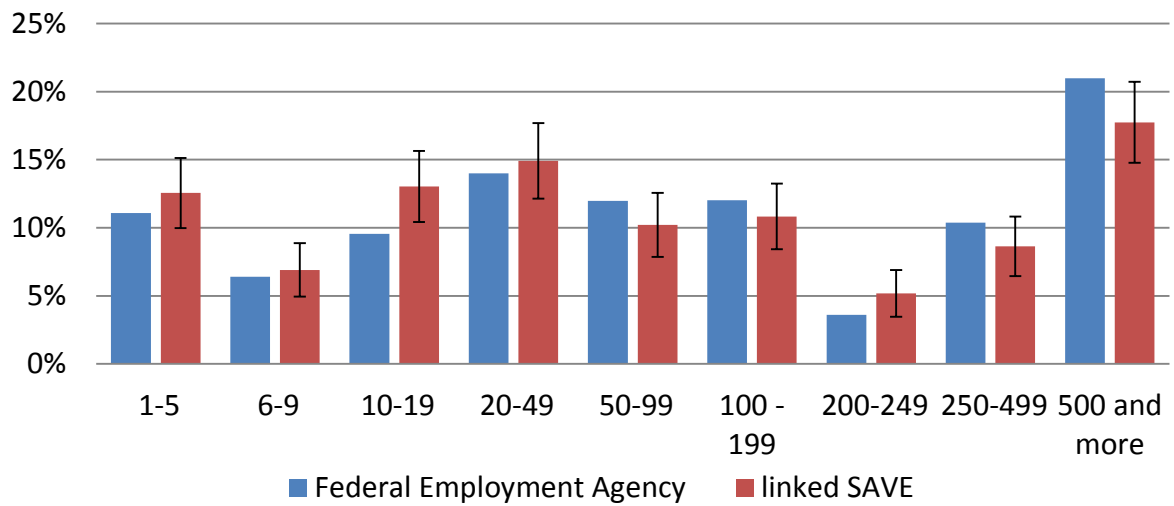
I have not devoted attention to this topic yet.....

APPENDIX 2: REPRESENTATIVENESS OF THE LINKED SAMPLE

To gauge the representativeness of the linked sample, we have compared the linked data set to benchmarks from administrative data. We find that workers in the linked SAVE data set are quite similarly distributed by firm size and across sectors as the entire German work force (Figure A.1 a and Figure A.1 b). Likewise, the share of marginal workers in the linked SAVE data set as well as according to the Federal Employment Agency is comparable for East and West Germany (Figure A.1 c). The income of workers in linked SAVE have followed the income trends over the years (starting from 1975), but used to earn higher wages on average. This trend has changed during the last years (

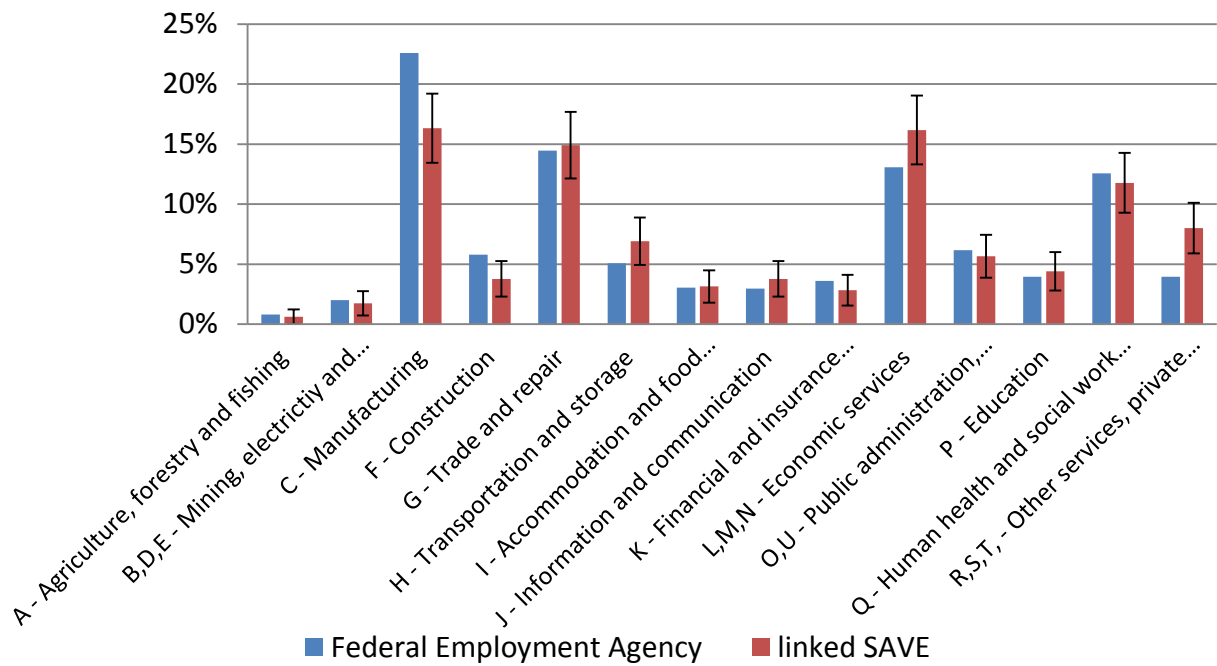
Figure A.1 d). Lastly, workers in SAVE tend to change employers slightly more often than the average employee (Figure A.1 e).

Figure A.1 a SHARE OF EMPLOYEES BY FIRM SIZE.



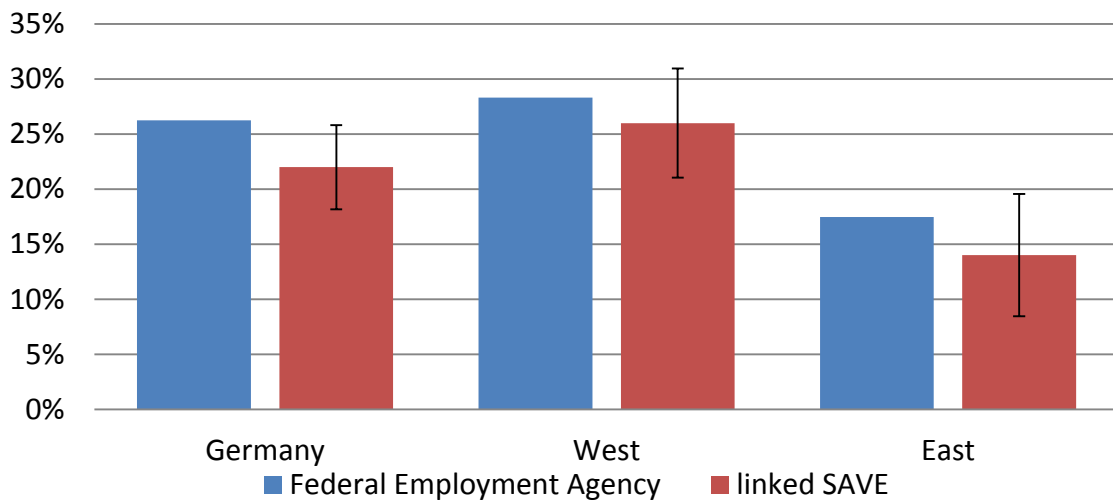
Source: Federal Employment Agency (2013), linked SAVE. Own calculations.

Figure A.1 b SHARE OF EMPLOYEES BY BUSINESS SECTOR.



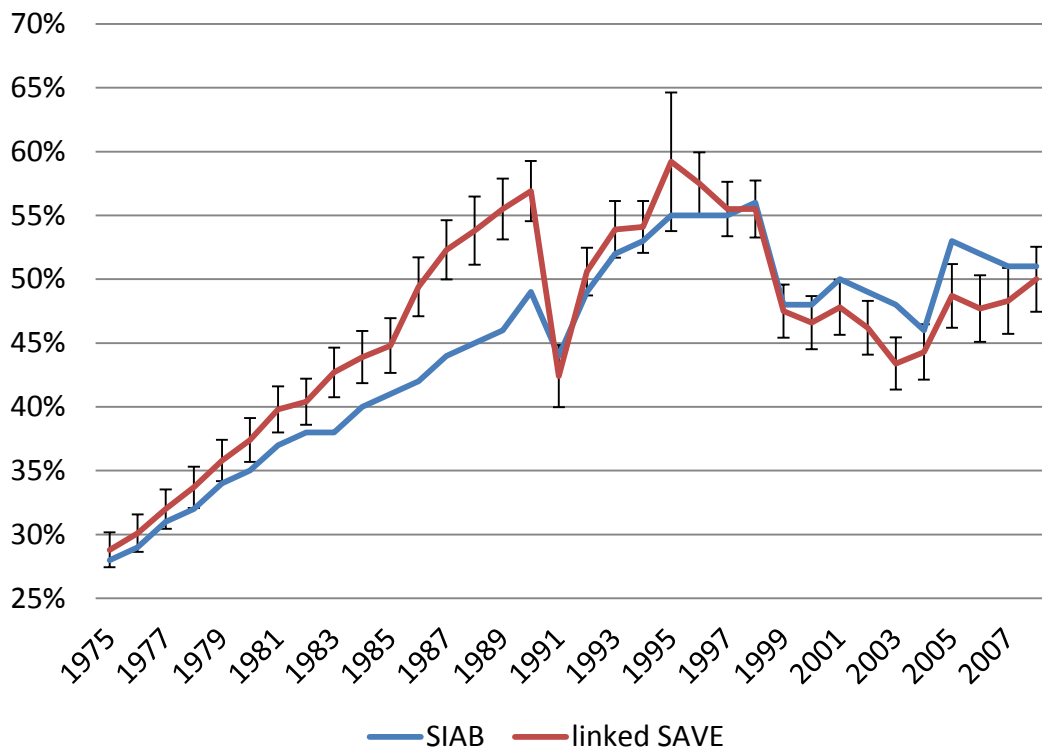
Source: Federal Employment Agency (2013), linked SAVE. Own calculations.

Figure A.1 c SHARE OF EMPLOYEES IN MARGINAL EMPLOYMENT.



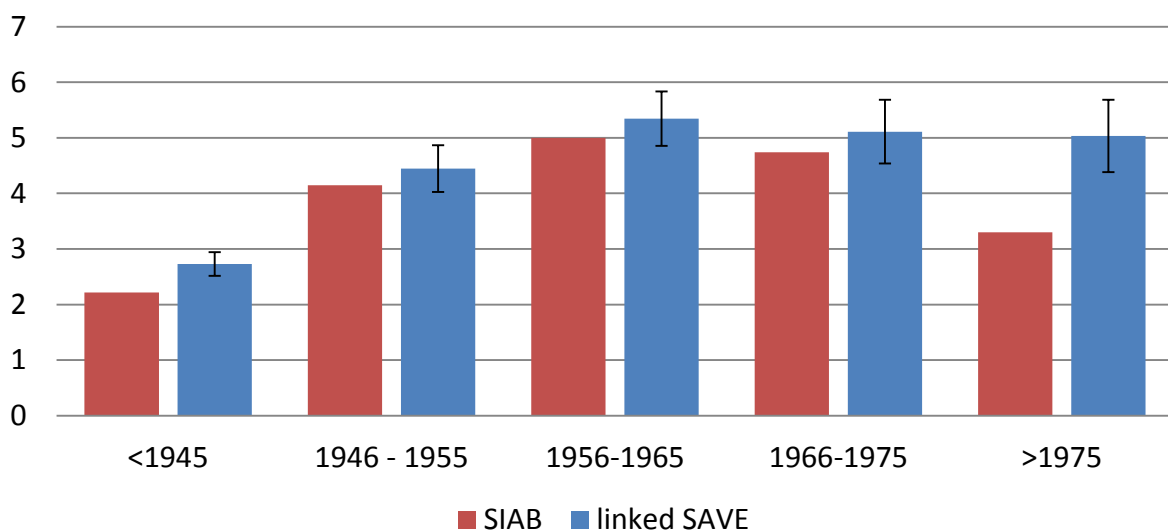
Source: Federal Employment Agency (2013), linked SAVE. Own calculations.

Figure A.1 d AVERAGE DAILY INCOME (GROSS) OVER TIME.



Source: Sample of Integrated Employment Biographies (SIAB), linked SAVE. Own calculations.

Figure A.1 e TOTAL NUMBER OF EMPLOYERS OVER WORKING LIFE BY BIRTH COHORT.



Source: Sample of Integrated Employment Biographies (SIAB), linked SAVE. Own calculations.

APPENDIX 3: VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS

Table A. 1 VARIABLE DEFINITIONS.

| Variable name | Variable Description | Hypothesis |
|--|---|------------|
| <i>worker characteristics</i> | | |
| female | Dummy=1 if the respondent is female | |
| living (working) in East Germany | Dummy=1 if the respondent lives (works) in East Germany | |
| age | in years | |
| basic education (ISCED 2) | Dummy=1 if respondent holds a degree of first stage of secondary education, i.e. "Hauptschule" | H2 |
| secondary education (ISCED 3) | Dummy=1 if respondent holds a degree of upper secondary education, i.e. "Abitur" | H2 |
| post-secondary education (ISCED 4) | Dummy=1 if respondent holds a degree of first stage of tertiary education, i.e. "Fachoberschule" | H2 |
| tertiary education (ISCED 5) | Dummy=1 if respondent holds a degree of second stage of tertiary education, i.e. University | H2 |
| financial literacy index | counts the number of correct answers to three questions capturing the understanding of basic financial concepts | H2 |
| savings preferences | Please rate on an 11-point scale the relevance assigned to the savings motive "old-age provision", where 0 means "not important at all" and 10 means "very important" | |
| savings motive "old age" is important | Dummy=1 if the respondent rates himself between 7 and 10 | |
| own private old age provision | Dummy=1 if the respondent owns financial assets specifically targeted at the old-age, i.e. private pensions | |
| <i>outcomes of the employer-employee match</i> | | |
| income: 1st quartile | Dummy=1 if the respondent's daily gross wage lies within the 1st quartile | H4 |
| income: 2nd quartile | Dummy=1 if the respondent's daily gross wage lies within the 2nd quartile | H4 |
| income: 3rd quartile | Dummy=1 if the respondent's daily gross wage lies within the 3rd quartile | H4 |
| income: 4th quartile | Dummy=1 if the respondent's daily gross wage lies within the 4th quartile | H4 |
| tenure at current employer (years) | Respondents tenure at the current employer measured in years | H3a |
| employer changes | total number of employer changes preceding the current employment divided by the number of years the individual is observed in the administrative records | H3b |
| few employer changes | Dummy=1 if the respondent's employer changes lies within the 1st tertile | H3b |
| medium employer changes | Dummy=1 if the respondent's employer changes lies within the 2nd tertile | H3b |
| many employer changes | Dummy=1 if the respondent's employer changes lies within the 3rd tertile | H3b |
| few employer changes * tenure | Respondent's indicator of past job mobility is interacted with tenure in years | H3a, H3b |
| medium employer changes * tenure | Respondent's indicator of past job mobility is interacted with tenure in years | H3a, H3b |
| many employer changes * tenure | Respondent's indicator of past job mobility is interacted with tenure in years | H3a, H3b |

Table A. 1. VARIABLE DEFINITIONS (continued).

| <i>firm characteristics</i> | | |
|---|---|----|
| firm did not report education of the worker | Dummy=1 if the employer failed to report the educational level of the worker to the Federal Employment Agency | H5 |
| small firm | Dummy=1 if the firm has less than 50 employees | H6 |
| medium-sized firm | Dummy=1 if the firm has less than 50 to 499 employees | H6 |
| large firm | Dummy=1 if the firm has more than 499 employees | H6 |
| low share of marginal workers | Dummy=1 if the share of marginal workers in the firm lies within the 1st tertile | H7 |
| medium share of marginal workers | Dummy=1 if the share of marginal workers in the firm lies within the 2nd tertile | H7 |
| high share of marginal workers | Dummy=1 if the share of marginal workers in the firm lies within the 3rd tertile | H7 |
| business sectors | sector dummies are included in order to account for structural differences across sectors | |
| agriculture, forestry and fishing | Dummy=1 if the employer belongs to this sector | |
| mining, electricity | Dummy=1 if the employer belongs to this sector | |
| manufacturing | Dummy=1 if the employer belongs to this sector | |
| constructing | Dummy=1 if the employer belongs to this sector | |
| trade and repair | Dummy=1 if the employer belongs to this sector | |
| transportation and storage | Dummy=1 if the employer belongs to this sector | |
| accommodation and food | Dummy=1 if the employer belongs to this sector | |
| information and communication | Dummy=1 if the employer belongs to this sector | |
| financial and insurance services | Dummy=1 if the employer belongs to this sector | |
| economic services | Dummy=1 if the employer belongs to this sector | |
| public administration | Dummy=1 if the employer belongs to this sector | |
| education | Dummy=1 if the employer belongs to this sector | |
| human health and social work | Dummy=1 if the employer belongs to this sector | |
| other services | Dummy=1 if the employer belongs to this sector | |

Table A. 2 DESCRIPTIVE STATISTICS OF THE THREE (SUB-)SAMPLES.

| | Whole Sample 2011 | Whole Sample 2013 | Subsample of consenters 2011 |
|---|---------------------|---------------------|---------------------------------|
| <i>Demographics</i> | | | |
| Age (years) | 46,04586 [0,353] | 48,67385 [0,382] | 46,944 [0,547] |
| Female | 0,555 [0,018] | 0,568 [0,020] | 0,510 [2,961] |
| Have a partner | 0,760 [0,016] | 0,765 [0,017] | 0,745 [2,583] |
| HH East Germany | 0,310 [0,017] | 0,314 [0,019] | 0,378 [2,872] |
| <i>Education</i> | | | |
| basic education (ISCED 2) | 0,058 [0,008] | 0,056 [0,009] | 0,035 [1,088] |
| secondary education (ISCED 3) | 0,650 [0,017] | 0,664 [0,019] | 0,629 [2,861] |
| post-secondary education (ISCED 4) | 0,130 [0,012] | 0,112 [0,013] | 0,154 [2,137] |
| tertiary education (ISCED 5) | 0,162 [0,013] | 0,169 [0,015] | 0,182 [2,285] |
| <i>Savings and saving behavior</i> | | | |
| Motive old-age: important (questionnaire 2010) | 0,736 [0,016] | 0,744 [0,018] | 0,764 [2,523] |
| <i>Financial literacy</i> | | | |
| Average number of correct answers (questionnaire 2009) | 2,382 [0,034] | 2,381 [0,039] | 2,524 [0,048] |
| N | 755 | 595 | 286 |

Source: SAVE 2011; 2013. Own calculations.

Notes: Standard errors in brackets.

Table A. 3 DESCRIPTIVE STATISTICS BY PERCEIVED ACCESS TO OCCUPATIONAL PENSIONS. SUBSAMPLE OF CONSENTERS, 2011.

| Access to an occupational pension? | Yes | No/DK |
|---------------------------------------|-------------------|-------------------|
| <i>worker characteristics</i> | | |
| female | 0.437 [0.040] | 0.602 [0.043] |
| living (working) in East Germany | 0.291 [0.036] | 0.484 [0.044] |
| age (years) | 46.741 [0.742] | 47.195 [0.813] |
| basic education (ISCED 2) | 0.025 [0.013] | 0.047 [0.019] |
| secondary education (ISCED 3) | 0.563 [0.040] | 0.711 [0.040] |
| post-secondary education (ISCED 4) | 0.177 [0.030] | 0.125 [0.029] |
| tertiary education (ISCED 5) | 0.234 [0.034] | 0.117 [0.029] |
| financial literacy index | 2.697 [0.046] | 2.311 [0.088] |
| savings motive "old-age" is important | 0.801 [0.032] | 0.719 [0.040] |
| own private old-age provision | 0.571 [0.040] | 0.555 [0.044] |

Table A. 3 DESCRIPTIVE STATISTICS BY PERCEIVED ACCESS TO OCCUPATIONAL PENSIONS (continued).

| Access to an occupational pension? | Yes | No/DK |
|--|-------------------|-------------------|
| <i>outcomes of the employer-employee match</i> | | |
| few employer changes | 0.171 [0.030] | 0.117 [0.029] |
| medium employer changes | 0.741 [0.035] | 0.750 [0.038] |
| many employer changes | 0.089 [0.023] | 0.133 [0.030] |
| tenure at current employer (years) | 10.566 [0.740] | 5.394 [0.472] |
| daily gross income in € | 98.410 [3.527] | 46.184 [2.962] |
| income: 1st quartile | 0.108 [0.025] | 0.430 [0.044] |
| income: 2nd quartile | 0.152 [0.029] | 0.367 [0.043] |
| income: 3rd quartile | 0.323 [0.037] | 0.164 [0.033] |
| income: 4th quartile | 0.418 [0.039] | 0.039 [0.017] |
| <i>firm characteristics</i> | | |
| firm did not report education of the worker | 0.070 [0.020] | 0.391 [0.043] |
| low share of marginal workers | 0.500 [0.040] | 0.242 [0.038] |
| medium share of marginal workers | 0.437 [0.040] | 0.242 [0.038] |
| high share of marginal workers | 0.063 [0.019] | 0.516 [0.044] |
| small firm | 0.253 [0.035] | 0.570 [0.044] |
| medium-sized firm | 0.430 [0.040] | 0.336 [0.042] |
| large firm | 0.316 [0.037] | 0.094 [0.026] |
| N | 157 | 129 |

Source: linked SAVE. Own calculations.

Notes: Standard errors in brackets.

Table A. 4 SHARE OF EMPLOYEES WORKING IN FIRMS WHO HAVE SET UP AN OCCUPATIONAL PENSION (BY 2011).

| | Firms who have set up an occupational pension (in %) | Employees subject to social security contributions working in... (in %) | Employees working in firms who have set up an occupational pension (in %) |
|--------------|--|---|---|
| firm size | (1) | (2) | (1)x(2) |
| 1-4 | 35% | 10% | 3.54% |
| 5-9 | 65% | 9% | 5.96% |
| 10-19 | 84% | 10% | 8.50% |
| 20-49 | 91% | 15% | 13.30% |
| 50-99 | 97% | 12% | 11.94% |
| 100-199 | 98% | 12% | 11.96% |
| 200-499 | 99% | 13% | 13.21% |
| 500-999 | 96% | 7% | 6.69% |
| 1000+ | 100% | 11% | 11.14% |
| Total | - | 100.00% | 86.25% |

Sources: Kortmann and Heckmann, 2012, Table 3-2a (p.30) Kortmann and Heckmann, 2012, Table 3-1 (p. 28) and Table 2-2 (p.22); own calculations own calculations

Table A. 5 DESCRIPTIVE STATISTICS – CONSENTERS AND NON-CONSENTERS (BY 2011).

| | Consenters | Non-Consenters |
|---------------------------------------|-------------------|-------------------|
| female | 0.510 [0.030] | 0.581 [0.023] |
| living (working) in East Germany | 0.378 [0.029] | 0.268 [0.021] |
| age | 46.944 [0.547] | 45.503 [0.459] |
| basic education (ISCED 2) | 0.035 [0.011] | 0.071 [0.012] |
| secondary education (ISCED 3) | 0.629 [0.029] | 0.663 [0.022] |
| post-secondary education (ISCED 4) | 0.154 [0.021] | 0.116 [1.487] |
| tertiary education (ISCED 5) | 0.182 [0.023] | 0.150 [0.016] |
| savings motive "old-age" is important | 0.764 [0.025] | 0.718 [0.021] |
| own private old-age provision | 0.564 [0.029] | 0.557 [0.023] |
| financial literacy index | 2.524 [0.048] | 2.295 [0.046] |
| N | 286 | 469 |

Source: SAVE 2011. Own calculations.

Notes: Standard errors in brackets.

REFERENCES

- Allen, Steven G., Robert L. Clark, and Ann A. McDermed.** 1993. "Pensions, Bonding, and Lifetime Jobs." *Journal of Human Resources*, **28** (3): 463–81.
- Barr, Nicholas, and Peter Diamond.** 2010. *Pension Reform. A Short Guide*. New York: Oxford Univ. Press.
- Becker, Gary S., and George J. Stigler.** 1974. "Law Enforcement, Malfeasance and Compensation of Enforcers." *Journal of Legal Studies*, **3** : 1–18.
- Blank, Florian, and Sabrina Wiecek.** 2012. "Die betriebliche Altersversorgung in Deutschland. Verbreitung, Durchführungswege und Finanzierung." *WSI Diskussionspaper*, **181**.
- Börsch-Supan, Axel.** 2004. "Mind the Gap: The Effectiveness of Incentives to Boost Retirement Saving in Europe." *MEA Discussion Paper*, **52–2004**.
- Börsch-Supan, Axel, Anette Reil-Held, and Daniel Schunk.** 2008. "Saving Incentives, Old-Age Provision and Displacement Effects. Evidence from the Recent German Pension Reform." *Journal of Pension Economics and Finance*, **7** (3): 295–319.
- Börsch-Supan, Axel, Michaela Coppola, and Anette Reil-Held.** 2012. "Riester Pensions in Germany. Design, Dynamics, Targeting Success and Crowding-in." *NBER Working Paper*, **18014**.
- Börsch-Supan, Axel, Michela Coppola, Lothar Essig, Angelika Eymann, and Daniel Schunk.** 2009. *The German SAVE Study. Design and Results*. Mannheim: Mannheim Research Institute for the Economics of Aging Study No. 6.
- Bundesministerium für Arbeit und Soziales (BMAS).** 2012a. "Situation und Entwicklung der betrieblichen Altersversorgung in Privatwirtschaft und öffentlichem Dienst (BAV 2011)." *Forschungsbericht Sozialforschung*, **429**. <http://www.bmas.de/DE/Service/Publikationen/Forschungsberichte/Forschungsberichte-Rente/fb-429-betriebliche-altersversorgung.html> (accessed: October, 31 2013).

- Bundesministerium für Arbeit und Soziales (BMAS).** 2012b. “Verbreitung der Altersvorsorge 2011.” *Forschungsbericht Sozialforschung*, **430**. <http://www.bmas.de/DE/Service/Publikationen/Forschungsberichte/Forschungsberichte-Rente/fb-430-verbretung-altersvorsorge.html> (accessed: October, 31 2013).
- Burger, Csaba, and Gordon L. Clark.** 2011. “The German Model of Risk Distribution in Supplementary Occupational Pensions.” *Journal of Risk*, **13** (3): 93–122.
- Chan, Sewin, and Ann H. Stevens.** 2008. “What You Don't Know Can't Help You: Pension Knowledge and Retirement Decision Making.” *Review of Economics and Statistics*, **90** (2): 253–66.
- Clark, Robert L., and M. Melinda Pitts.** 1999. “Faculty Choice of a Pension Plan. Defined Benefit versus Defined Contribution.” *Industrial Relations*, **38** (1): 18–45.
- Coppola, Michela, and Benedikt Alt.** 2012. “Attrition Rates in Longitudinal Surveys: Does the Sampling Scheme Matter?” Paper presented at the 23rd International Workshop on Household Survey Nonresponse, Ottawa, September 2012.
- Coppola, Michela, and Bettina Lamla.** 2012. “Empirical Research on Households' Saving and Retirement Security. First Steps Towards an Innovative Triple-Linked-Dataset.” *MEA Discussion Paper*, **258–2012**.
- Coppola, Michela, and Bettina Lamla.** 2013a. “Please Sign Here: Asking for Consent without Interviewers.” Unpublished.
- Coppola, Michela, and Bettina Lamla.** 2013b. “Saving and Old Age Provision in Germany (SAVE). Design and Enhancements.” *Schmollers Jahrbuch*, **133** (1): 109–16.
- Duflo, Esther, and Emmanuel Saez.** 2003. “The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence from a Randomized Experiment.” *Quarterly Journal of Economics*, **118** (3): 815–42.

- Federal Employment Agency.** 2013. *Betriebe und sozialversicherungspflichtige Beschäftigung..*
 Nürnberg: Federal Employment Agency.
[http://statistik.arbeitsagentur.de/Navigation/Statistik/Statistik-nach-Themen/
 Beschaeftigung/Beschaeftigung-Nav.html](http://statistik.arbeitsagentur.de/Navigation/Statistik/Statistik-nach-Themen/Beschaeftigung/Beschaeftigung-Nav.html) (accessed: June, 30 2013)
- Fitzenberger, Bernd, Aderonke Osikominu, and Robert Völter.** 2006. “Imputation Rules to Improve the Education Variable in the IAB Employment Subsample.” *Schmollers Jahrbuch*, **126** (3): 405–36.
- Gasche, Martin, Tabea Bucher-Koenen, Marlene Haupt, and Simon Angstmann.** 2013. “Die Kosten der Riester-Rente im Vergleich.“ *MEA Discussion Paper*, **269–2013**.
- Greer, Charles R., Stuart A. Youngblood, and David A. Gray.** 1999. “Human Resource Management Outsourcing: The Make or Buy Decision.” *The Academy of Management Executive*, **13** (3): 85–96.
- Gruhl, Anja, Alexandra Schmucker, and Stefan Seth.** 2012. “Das Betriebs-Historik-Panel 1975-2010-Handbuch.“ *FDZ Datenreport*, **04/2012**.
- Gustman, Alan L., and Olivia S. Mitchell.** 1990. “Pensions and the U.S. Labor Market.” *NBER Working Paper*, **3331**.
- Gustman, Alan L., and Thomas L. Steinmeier.** 2001. “Retirement and Wealth.” *Social Security Bulletin*, **64** (2): 66–91.
- Gustman, Alan L., and Thomas L. Steinmeier.** 2005. “Imperfect Knowledge of Social Security and Pensions.” *Industrial Relations*, **44** (2): 373–97.
- Gustman, Alan L., Olivia S. Mitchell, and Thomas L. Steinmeier.** 1993. “The Role of Pensions in the Labor Market.” *NBER Working Paper*, **4295**.
- Gustman, Alan L., Thomas Steinmeier, and Nahid Tabatabai.** 2007. “Imperfect Knowledge of Pension Plan Type.” *NBER Working Paper*, **13379**.

- Ippolito, Richard A.** 1985. "The Labour Contract and True Economic Pension Liabilities." *American Economic Review*, **75** (5): 1031–43.
- Ippolito, Richard A.** 2002. "Stayers as "Workers" and "Savers". Toward Reconciling the Pension-Quit Literature." *Journal of Human Resources*, **37** (2): 275–308.
- Jacobi, Lena, and Sandra Schaffner.** 2008. "Does Marginal Employment Substitute Regular Employment? A Heterogeneous Dynamic Labor Demand Approach for Germany." *Ruhr Economics Papers*, **56**.
- Luchak, Andrew A., and Morley Gunderson.** 2000. "What Do Employees Know about Their Pension Plan?" *Industrial Relations*, **39** (4): 646–70.
- Lusardi, Annamaria, Pierre-Carl Michaud, and Olivia S. Mitchell.** 2013. "Optimal Financial Literacy and Wealth Inequality." *NBER Working Paper*, **18669**.
- Madrian, Brigitte C., and Dennis F. Shea.** 2001. "The Power of Suggestion. Inertia In 401(K) Participation and Savings Behavior." *Quarterly Journal of Economics*, **116** (4): 1149–87.
- McFadden, Daniel.** 1999. "Rationality for Economists?" *Journal of Risk and Uncertainty*, **19** (1): 73–105.
- Mitchell, Olivia S.** 1988. "Worker Knowledge of Pension Provisions." *Journal of Labor Economics*, **6** (1): 21–39.
- Pfaffenholz, Guido, Sanita Schröer, and Frank Wallau.** 2005. "Betriebliche Altersversorgung im Mittelstand." *IFM Materialien*, **162**.
- Ruppert, Wolfgang.** 1994. "Verbreitung der betrieblichen Altersversorgung nimmt ab." *ifo Schnelldienst*, **47** (10/11): 7–14.
- Ruppert, Wolfgang.** 2000. "Betriebliche Altersversorgung: Neue ifo Erhebung zeigt Stabilisierungstendenzen." *ifo Schnelldienst* **53** (21): 24–32.
- Samwick, Andrew.** 1998. "New Evidence on Pensions, Social Security, and the Timing of Retirement." *Journal of Public Economics*, **70** (2): 207–36.

- Schunk, Daniel.** 2008. "A Markov Chain Monte Carlo Algorithm for Multiple Imputation in Large Surveys." *Advances in Statistical Analysis*, **92** (1): 101–14.
- Spengler, Anja.** 2008. "The Establishment History Panel." *Schmollers Jahrbuch*, **128** (3): 501–09.
- Statistisches Bundesamt.** 2011. *Verdienste und Arbeitskosten. Aufwendungen und Anwartschaften betrieblicher Altersversorgung 2008*. <https://www.destatis.de/DE/Publikationen/Thematisch/VerdiensteArbeitskosten/Arbeitskosten/AufwendungenAnwartschaftenBAV.html> (accessed: November, 11 2013)
- Widerstedt, Barbro.** 1998. "Moving or Staying? Job Mobility as a Sorting Process." *Umea Economic Studies* **464**.
- Ziegelmeyer, Michael.** 2009. "Documentation of the logical imputation using the panel structure of the 2003 - 2008 German SAVE Survey." *MEA Discussion Paper*, **173–2009**.
- Ziegelmeyer, Michael.** 2013. "Illuminate the Unknown. Evaluation of Imputation Procedures Based on the SAVE Survey." *Advances in Statistical Analysis*, **97**: 49–76.