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Intra-household allocation of non-mandatory retirement savings

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ABSTRACT

Traditionally, households have been regarded as single units when it comes to savings. Although this might be correct for some kinds of household savings, we question the accuracy of this unitary model with respect to non-mandatory retirement savings. To do so, we analyze the intra-household allocation of retirement savings between partners in Germany through an individualistic approach.

First, the decision to save at all is analyzed using a seemingly unrelated bivariate probit model, showing that the possession of retirement saving accounts among spouses is positively correlated, hinting at a "crowding-in" of saving accounts. However, this could only be due to certain tax-related reasons. Thus, we further analyze the interaction of savings between spouses using three-stage least squares, allowing for endogeneity between the spouses' savings. These results additionally show a crowding-in of the total amount of retirement savings between spouses, probably due to some "peer effect". We therefore conclude that the unitary model of household decision-making is not applicable with respect to retirement savings.

Introduction

Conventionally, households have been considered single economic units. This unitary model, which implies a single decision-making process among the individual members of a household, has been applied in the analysis of household decisions ranging from labor supply to overall savings. However, in the past few years, this simplified approach has been questioned and disproved by many researchers (for example, Vermeulen (2005), Attanasio and Lechene (2002), and Browning (1995), just to name a few), because it almost completely ignores individual preferences. Alternative approaches have been proposed, which recognize household behavior as a result of a decision-making process reflecting the different preferences of the various members of the household. These collective approaches can be further divided into two models: cooperative and non-cooperative. In the first model, spouses negotiate decisions by taking each other's preferences into account. In the second model, each member of the household considers the other members' behaviors as given and maximizes his/her own utility.[1] While the collective model has been confirmed by a number of studies on labor supply decision at the extensive as well as the intensive margin,[2] theoretical work on the household decision-making process and empirical evidence with respect to savings is scarce. Browning (2000) presents a non-cooperative model for the saving behavior of a two-person household with differing survival risks, reaching different conclusions. First, as the wife is usually expected to live longer, she will save more for retirement than her husband. Second, the bargaining power of the wife also has implications on the choice of portfolio, as the wife prefers to buy insurance and to save privately while the husband prefers buying annuities. Lee and Pocock (2007) present a household bargaining model for couples, which also introduces the possibility of divorce. They show that when individual preferences differ, the total household savings depend on the spouses' bargaining power. Additionally, they show that the possibility of divorce increases the incentive for the spouses to save in their own bank accounts. Empirical evidence on intra-household saving decisions is also scarce and sometimes contradictory. Browning (1995) found that when the wife provides a higher share of the household income, the total household saving rate declines. In contrast, Lee and Pocock (2007) conclude that, in the context of South Korea, an increasing share of the wife's relative earnings leads to increasing total household savings as well as to an increase in the wife's share of savings. Lee and Pocock (2007) are to our knowledge the first to explicitly model and analyze the allocation of financial resources between spouses. Grabka et al. (2015) examined the distribution of wealth between couples in

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[1] For a more detailed overview on the different household models see, e.g., Garcia et al. (2010). For an overview of the different collective models, see Vermeulen (2002).

[2] See, e.g., Garcia et al. (2010), Bloemen and Pasqua (2008), and Aronsson et al. (2001).

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Germany, concluding that the intra-household wealth gap declines when the female takes the financial decisions. This scarcity in empirical research on intra-household savings allocation may be a result of the fact that information on household savings largely originates from panel surveys, which often only measure overall household savings. With data on individual retirement savings at hand, the present study will analyze the intra-household allocation of retirement savings from a cross-sectional perspective, modeling each spouse's decision separately but allowing for mutual endogeneity at the same time. Starting from an individual perspective, this article contributes to the literature in the following way: First, we examine how retirement saving contracts are distributed among spouses. Second, we analyze how spouses' savings are related to each other and whether one spouse increasing his/her savings causes the other spouse to also do so, or whether the exact opposite is true. Given that some retirement savings are saved by the aggregate household by definition (e.g., real estate), we focus on saving accounts usually used to save for old age, which can ultimately be attributed to a specific household member. In order to study the interaction between household members with regard to retirement savings in Germany, we use the Panel on Household Finances (PHF) provided by the Bundesbank. This dataset allows us to analyze individual savings as well as to simultaneously consider the overall household situation and each partner's or spouse's retirement savings. The remainder of this article is structured as follows. First, the dataset is described in Section '*The PHF dataset*', followed by a description of institutional details in Section '*Institutional background and possible implications*' and an outline of the empirical strategy in Section '*Empirical Strategy*'. After the descriptive statistics, the multivariate analysis with respect to the saving decision (Section '*Intra-household distribution of saving accounts*') and saving amount (Section '*Crowding-in or crowding-out of spouse's retirement savings*') is presented, followed by a robustness analysis in Section '*Robustness analysis*'. The article concludes by summarizing the results and presenting the implications for further research.

Data and empirical strategy

The PHF dataset

The following analysis is based on the newly introduced Panel on Household Finances (PHF) in Germany.[3] The PHF, part of the Eurosystem's Household Finance and Consumption Survey (HFCS), is conducted by the Bundesbank. In addition to the common pan-European questionnaire covering questions on household finance, wealth, and consumption, the PHF places special emphasis on two topics: savings and old-age provision. Therefore, detailed information at an individual level is collected on different types of saving vehicles as well as financial assets. This information is of special interest as it enables the analysis of savings specifically linked to the old-age pension provision. Besides information about individual retirement savings, the PHF also includes detailed household characteristics, e.g., household net income, number of children, etc. This rare combination of data allows us to analyze the interaction between the retirement savings of spouses within the household context. The survey is designed to be a full panel survey conducted at a frequency of three years. So far, two waves have been conducted in 2010/2011 and in 2014. We use data from both waves for the following analysis. The sample of the PHF was chosen randomly from the public register within predefined regional stratas and can thus be interpreted as representative. Panel attrition is existent with approximately 62 percent of interviewed households also taking part in the second wave. However, as we are mainly analyzing the pooled cross-sectional data, this should not represent much of a problem. Surveys about financial data often have the problem of missing data, which was mitigated by using multiple imputation (m = 5) by the data provider in order to fill in the missing values and, simultaneously, to consider the uncertainty of these imputations. This procedure led to five imputed datasets that need to be considered when analyzing the data.[4] However, for the purpose of analyzing the interaction between spouses, we refrain from using the imputed observations and stick to the original values, as the imputation procedure could eventually impose own assumptions about the correlation between the spouses' savings in retirement accounts.[5] Additionally, as we are analyzing savings to retirement savings contracts and not the respective wealth stock, response rates are fairly high, amounting to over 81 percent for subsidized Riester pension plans, private non-subsidized pension insurances, and cash value life insurance. Only the response rates for saving amounts to occupational pension schemes are fairly low at 64 percent, often caused by a lack of information.

Institutional background and possible implications

As this article puts special emphasis on retirement savings, only non-mandatory vehicles that are directly linked to retirement and that can be ultimately attributed to a specific household member have been analyzed. These vehicles consist of state-subsidized private pension contracts (Riester or Rürup pensions),[6] all kinds of voluntary occupational pension schemes, private non-subsidized pension insurances, and cash value life insurance.[7] Occupational pensions of different types are summarized with the exception of direct pension insurances financed by employers. As the decisions and contributions for the latter type of occupational pension are made by the employer and not the employee, it can be regarded as the employer saving rather than as an individual rational decision. As some of these contract types are subsidized, there may exist incentives for specific allocations of contracts among household members. In order to make incentives clear, we will briefly discuss the institutional details of the analyzed saving vehicles in this section.

With the introduction of the Elderly Pension Act in 2001 (Altersvermögensgesetz; AVmG) and the Supplemental Elderly Pension Act (Altersvermögensergänzungsgesetz; AVmEG), a substantial change took place in the German pension system: employees were no longer supposed to solely rely on statutory pension insurance but were expected to save voluntarily for retirement using either the newly introduced Riester subsidized personal pension plans (defined contribution) or any kind of occupational pension plans. Contributions to these newly introduced Riester pension plans are deducted from taxable income—from up to four percent of the individual gross employment income of the previous year and up to a maximum amount of 2100 Euro. Additionally, there exists a basic subsidy of 154 Euro for the contract owner and of 300 Euro for each child. These subsidies are fully paid out only if four percent of the gross employment income of the previous year (inclusive of paid subsidies) is saved and is cut proportionally. Those eligible for these subsidies and the tax exemption are

[3] For more detailed information about the PHF, see http://www.bundesbank.de/Navigation/EN/Bundesbank/Research_centre/Panel_on_household_finances/panel_on_household_finances.html

[4] For further information about the multiple imputation procedure in the PHF dataset and the appropriate analysis, see Zhu and Eisele (2013).

[5] However, we also estimated our main model using all imputations, which did not change our results. Thus, selection issues with respect to item non-response do not seem to play a significant role.

[6] Going forward, the term "Riester pension" will refer to both Riester as well as Rürup pension plans, because they are not further distinguished in the dataset. Rürup pension or "Basis-Rente" refers to pension plans designed for self-employed individuals with tax-deductible contributions up to 22,172 Euros in 2015.

[7] This approach has the disadvantage of neglecting other retirement saving instruments, especially investments in real estate, which constitutes a relevant part of private household wealth (see, e.g., Grabka and Westermeier (2014), p. 159). However, with regard to the question of the interaction of individual retirement savings within a household, savings in real estate become irrelevant, as these savings are usually determined only at the household level.