Labor market and savings responses to pension reforms – Quasi-experimental evidence from Germany*

Mathias Dolls Philipp Doerrenberg

Andreas Peichl Holger Stichnoth

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Extended Abstract

Background and research question. Most industrialized countries have to cope with the challenge of demographic change. Social insurance programs are under particular financial pressure as pension and health-related expenditure will continue growing over the next decades as a consequence of ageing societies and rising old-age dependency ratios. In order to maintain appropriate retirement payments, these developments force many countries to implement reforms in their pension systems. In addition, there has been a growing need especially for younger workers to complement their pension claims from the statutory pension insurance by private pension plans. A variety of pension reforms have already been implemented in OECD countries, including reforms that raised the statutory retirement age, reduced retirement payments of workers or introduced government-subsidies for private pension provisions in order to prevent a surge in old-age poverty (OECD 2013). The optimal design of reforms depends on the behavioral responses of individuals. It is therefore important to study how workers respond to changes in future retirement payments and to incentives to take up additional private pension provisions. In this paper, we address these questions in the context of the German pension system. In particular, we explore how changes in future retirement payments as well as information provision on the need for private pension planning affect outcomes such as (intensive and

*Dolls: ZEW Mannheim and IZA (dolls@zew.de); Doerrenberg: ZEW Mannheim and IZA (doerrenberg@zew.de); Peichl: ZEW Mannheim, University of Mannheim, IZA and CESifo (peichl@zew.de). Stichnoth: ZEW Mannheim and University of Heidelberg (stichnoth@zew.de). We thank Eike Eser for excellent research assistance.

extensive) labor supply, occupational choice, earnings, fertility, savings and private retirement plans. In a broader perspective, we also contribute to the question of how individuals respond to future income shocks.

There is a rich literature studying social security reforms with structural models of retirement (see e.g. Gustman and Steinmeier 2015), while reduced-form identification approaches – as applied in this paper – have been employed less frequently.[1] In contrast, the literature examining the effect of salience on individual behavior has been growing recently (see e.g. Chetty et al. 2009; Chetty and Saez 2013). Important contributions in the field of social security are Duflo et al. (2006) and Liebman and Luttmer (2015) who find that information provisions and incentives can have significant effects on labor force participation and savings.

Identification. We exploit two characteristics of the German retirement institutions in order to identify a causal effect of pension payments on labor-market effects and savings.

First, we exploit that many individuals do not have a precise understanding of the pension payments they will receive once they retire. The German pension system is complicated and it is therefore difficult to develop expectations about pension payments. In an effort to increase transparency, the "German statutory pension insurance scheme" – the institution that administers the German retirement system – implemented a reform which changed the way information about retirement savings are provided. As of 2004, the pension organization started to send out annual letters which informed all eligible employees about the German statutory pension insurance with the aim to illustrate the scope of additional private retirement savings needed to maintain current standards of living. In particular, the letters contain information about current and future accrued pension rights and, importantly, the loss in purchasing power at the time of retirement as well as information on the additional need for private pension planning. This reform did not change the level of retirement payments, but it changed the knowledge about and salience of pension payments. Given the complexity of the system, we expect that such letters have an impact on individual behavior. Sor far, the only evidence available is from the German SAVE survey – a longitudinal study on households' financial behavior with a special focus on savings and old-age provision – where approximately 12 per cent of respondents state that they increased savings because of the information treatment (Haupt 2014). For identification, we exploit two discontinuities in the age

[1] This is presumably due to identification problems as reforms in pension systems usually affect the entire workforce, making it difficult to find appropriate counterfactuals. See below how we cope with this difficulty.

cut-offs of receiving such a letter or not. (i) Prior to the 2004 reform, employees older than 55 received information about their retirement payments whereas employees younger than 55 did not receive any information. (ii) Not all employees are affected by the reform. Only those subjects that are older than 27 and that have paid social security contributions for at least five years receive the letter. We use quasi-random variation around these age cutoffs to identify treatment effects; the identifying assumption behind this approach is that employees close to these cut-offs are comparable with respect to our outcome variables of interest. Event study designs and (fuzzy) regression discontinuity approaches are the chosen tools to exploit the institution-induced quasi-randomization.

Second, we exploit an institutional feature regarding the pension-payment consequences of parental leave. Parents, whose children were born after December 31, 1991, receive more pension-relevant credit for raising their children than parents whose children were born before this cut-off date. This reform had significant effects on retirement payments for mothers and fathers who do not work to raise their children. The difference in monthly retirement payments between parents whose children were born before vs. after 1992 is about 57 EUR. This is a substantial difference; the yearly difference in pensions is more than 675 EUR, and over the course of an entire retirement this differential amount may become very large. We exploit this institutional feature and explore the labor-market behavior of parents whose children were born around the sharp cut-off. The identifying assumption is that the exact date of birth is not adjusted in order to fall under the new, and more generous, system.

Data. We will use different data from administrative records for empirical estimations. The first dataset is new and unique in combining information from the pension insurance with employment biographies from social security records (Biographical Data of Selected Social Insurance Agencies in Germany, BASiD; see Hochfellner et al. 2012). The data from the pension insurance come from the 2007 sample of Insured Persons and their Insurance Accounts (VSKT) which was recently used by Boenke et al. (2015) to study life-time earnings inequality. The sample includes individuals aged 30 to 67 in 2007 and provides, among other things, detailed information on the periods in which individuals contributed to the public pension system, as well the level and type of these contributions. Importantly for our purpose, additional pension entitlements such as those obtained through raising children, are also covered. The individual biographies stretch back as far as 1951. For the years after 1975, BASiD combines the pension data from the VSKT with detailed spell information on employment biographies and periods of unemployment and training.

These additional variables are provided by the IAB in Nuremberg and contain basically the same information as the SIAB (formely: IABS) data that have become increasingly popular in labor economics.

The second data set we use is the German Taxpayer Panel, which is an administrative data set collected by German tax authorities, provided and administered by the German Federal Statistical Office (Kriete-Dodds and Vorgrimler 2007), based on the universe of personal income tax returns. The unit of observation is the taxpayer, i.e., either a single individual or a couple filing jointly. The dataset is a balanced panel covering all German tax units filing tax returns in the period 2001 to 2008. We have access to a 5% stratified random sample of the Taxpayer Panel and employ the respective weights provided by the Statistical Office. The dataset contains all information necessary to calculate a taxpayer's annual income tax, this includes basic socio-demographic characteristics such as birth date, gender, family status, number of children as well as detailed information on income sources and tax base parameters such as work-related expenses and deductions (cited from Doerrenberg et al. 2015).

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