Labour Economics 17 (2010) 474–486

Contents lists available at ScienceDirect

Labour Economics

journal homepage: www.elsevier.com/locate/labeco

Financial incentives to postpone retirement and further effects on employment — Evidence from a natural experiment

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ARTICLE INFO

Article history:
Received 10 June 2008
Received in revised form 22 September 2009
Accepted 4 October 2009
Available online 24 October 2009

Keywords:
Retirement insurance
Labor force participation
Natural experiment

ABSTRACT

This paper examines the effect of the introduction of permanent benefit reductions for early retirees (i) on the duration until benefit claiming and (ii) on the duration until exit from gainful employment. I estimate discrete time duration models using different error term specifications. Administrative data containing the full earnings history of the individuals are used. Since the reform implementing the benefit reductions was a natural experiment, under some assumptions a causal effect can be identified. The permanent reduction of retirement benefit amounts causes a postponement of claiming benefits by about 14 months and a delay of employment exit by about 10 months on average.

1. Introduction

The pension systems of many industrialized countries are facing severe financial problems due to aging societies. Labor market and pension reforms were therefore implemented in several European countries to encourage labor force participation of the elderly. A longer working life would on the one hand reduce benefit payments per capita and it would on the other hand raise contributions. A frequently used policy measure that sets incentives to postpone retirement and to increase labor force participation is a benefit reduction for early retirees.[1] However, especially older individuals may face employment restrictions, limiting their labor market opportunities.[2] Therefore, an increasing duration until retirement in terms of benefit claiming does not necessarily imply that the duration until exit from gainful employment increases equivalently. This paper analyzes the effect of a pension reform in Germany that introduced permanent benefit reductions for early retirees. These reductions vary between 0.3% and 18.0% of monthly benefits depending on the individual birth cohort and the timing of benefit claiming. The reform is used to examine two issues: first, does the duration until benefit claiming increase due to these benefit reductions? Second, does the duration until employment exit increase to the same extent? If the last month of employment and the first month of drawing benefits are not postponed to the same extent, there may be some relief for the retirement systems through benefit reductions, but the relief for the welfare state as a whole may be much smaller. It is therefore important to know to what extent a delay of claiming benefits implies longer employment, too.

The analysis shows that the reform causes an expected postponement of benefit claiming by about 14 months. Women and workers with low benefit entitlements delay their claiming by more than men or those with high benefit entitlements. At the same time, the expected duration until exit from gainful employment increases by about 10 months. The latter effect is stronger for men and for individuals with high benefit entitlements.

Unlike previous studies on the effect of pensions in Germany I utilize a natural experiment and can therefore identify a causal effect.[3] The analyzed sample is drawn from a new data set that provides very detailed information concerning the full employment history and the full earnings history of more than 60,000 individuals. This study appears to be the first one evaluating worker responses to this very recent reform.

The paper is organized as follows: in the next section, the German retirement benefit system and the recent reform are described in some detail, while Section 3 discusses the relevant literature and derives hypotheses. Section 4 describes the empirical strategy for estimating the effects of the reform on the duration until claiming benefits as well as on the duration until employment exit. Section 5 presents the data. In Section 6 the results of these two parts of the analysis are discussed. Section 7 concludes.

2. The recent pension reform in Germany

The first pillar of the Old-Age Security System is the main income source for elderly individuals in Germany. Nearly 80% of the labor

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[1] See Council of the European Union (2003). Actuarially adjustments in pension for early retirees were implemented for example in Italy, Sweden, Austria, and Germany.

[2] See for example Hakola and Uusitalo (2005) or Dorn and Sousa-Poza (2007). Their findings are presented below in greater detail.

[3] However, to ensure identification of the causal effect some assumptions are necessary, which are discussed below in greater detail (see Section 4).

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doi:10.1016/j.labeco.2009.10.001

force is covered and about 80% of the average retiree's income derives from claims to benefits (see Council of the European Union (2003)). Generally, two classes of the public social security system can be distinguished: (i) the tax-financed old-age system for civil servants and (ii) the mandatory retirement insurance for other employees, which is financed by contributions.[4] The first one is not considered in this article, since it is not affected by the above mentioned reform. The second one is described below in more detail.

The retirement insurance covers the vast majority of the population. About 33.5 million individuals have been insured in 2007 (Deutsche Rentenversicherung Bund (2009)), compared to about 55 million individuals in the relevant age group from age 14 to age 65 (Statistisches Bundesamt (2008)). Public benefits are the most important source for old-age-income among the whole population. The net replacement rate is 67% for an individual with 45 contribution years (OECD (2007)).[5] The cap on insurable earnings is high. In 2007 it amounted to 5250€ per month, which is 214% of the average monthly gross wage.

The insurance is organized as a pay-as-you-go-system, and financed by payroll-taxes. Individual benefit claims depend on the individual earnings history. "Premium Points" are used to calculate the amount of benefit entitlements. For every year of average contributions[6], one premium point is credited to the individuals' insurance account. For years with lower or higher contributions the amount of premium points is adjusted proportionally. The number of premium points accumulated until age 65 determines the benefit entitlement.[7] The amount of € paid for one premium point is determined by law on a yearly basis. In 2008, 26.56€ per month were paid for one premium point. In contrast to, for example, the system of social security in the U.S, all contributions are weighted equally over the lifetime. Neither the age nor the date of payments to the public retirement insurance influences the entitlement for benefits.

The minimum age for claiming benefits is 65 years as a matter of principle, but since 1972 there were several exceptions from that minimum age for certain groups of insured workers. To allow a "flexible retirement entry", unemployed persons, women, and disabled individuals who meet certain criteria concerning their employment history could retire between age 60 and age 65, while the long-term insured with more than 35 years of contribution could retire between age 63 and age 65. There were no benefit reductions following retirement prior to age 65 for those groups until 1997, and thus there was a strong incentive to retire at the earliest possible point in time. For example, about 79.9% of all men and 47.4% of all women born in 1931 started to draw benefits before 1996, i.e. before the regular retirement age of 65 years (Deutsche Rentenversicherung Bund (2008)).

In order to reduce these incentives, the "Act on the Promotion of Growth and Employment" (*Wachstums- und Beschäftigungsförderungsgesetz*) was passed, which introduced benefit reductions for workers retiring prior to the age of 65, starting in 1997. The minimum age at which full pensions can be claimed was raised to age 65 for all insured workers. The implementation of the reform stretches over a long period, as the minimum age for receiving a full pension was increased in monthly steps over several years. Thus, in a transition period (1997 to 2005), different birth cohorts could claim a full pension at different ages. For example, individuals born in January 1938 aged 61 years and 1 month can receive "old-age pension for the unemployed" with full benefits. Individuals born in February 1938 can receive the full pension when they are 61 years and 2 months old, and so on.

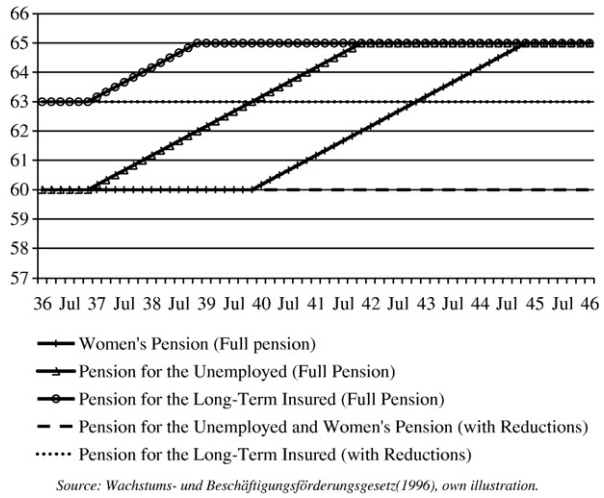

Fig. 1. Age of eligibility for retirement benefits (by month of birth).

As a further consequence of the reform, prior to the cohort-specific regular retirement age benefits can only be claimed at the price of a permanent benefit reduction. Fig. 1 illustrates the retirement options for the transition cohorts (1937–1945). For every month that benefit claiming takes place prior to the age of eligibility for the full pension, the benefits are reduced by 0.3 percentage points. Hence, given a specific retirement age, different birth cohorts have to accept different reduction rates. For example, a person starting to receive "old-age pensions for the unemployed" at age 61 and 1 month suffers no benefit reduction if born in January 1938, since for this cohort the age of 61 and 1 month is the age of entitlement for full benefits. But persons born in January 1940 with the same retirement decision would have to accept a reduction of 7.2%. In that case, the minimum age of entitlement for full benefits is 63 years and one month, and 24 months of 0.3%-points reduction accumulate. This regulatory framework allows one to identify the effect of payment reductions on the retirement decision.

3. Literature and hypotheses

There is a large literature pointing out the importance of pensions for the timing of retirement. One strand of the literature deals with the effect of expected income from social security or pension benefits (i.e. the level of social security or pension wealth) on the retirement decision. Classical life-cycle-models used for example by Gordon and Blinder (1980) or Gustman and Steinmeier (1986) show that the amount of provided benefits compared to potential wages has an influence on the retirement decision of an individual maximizing utility from income and leisure. Hurd (1990a) examined the peak in retirement entries in the United States at age 62, when benefit receipt is first available. This peak has grown over time with growing social security benefits. Blau (1994) estimated hazard rates into retirement dependent on social security wealth and found a strong connection between benefit levels and exit rates. A well-known study to be mentioned is conducted by Krueger and Pischke (1992). They used a natural experiment in the U.S. in 1972, when a sharp decline in benefit levels was introduced for given birth years onwards, while older generations remained unaffected. The main advantage of this approach is the exogenous variation in benefits. Most studies of retirement behavior suffer from a correlation between the level of benefit entitlements or the replacement rate, and the employment biography, which again should be correlated with the retirement decision. Krueger and Pischke found a significant, but only very small impact of pension levels on retirement behavior.

[4] Self-employed workers are mandatorily covered only in exceptional cases.

[5] The net replacement rate is defined as the individual net pension divided by the most recent net earnings. Another possibility of definition is relative to average lifetime earnings, typically resulting in an even higher replacement rate.

[6] This refers to the average contributions of all insured individuals in the given year.

[7] Employment after age 65 is not subject to the retirement insurance. No further contributions have to be paid, benefits can be drawn regardless of the current employment status, and it is not taken into account for the amount of benefits.