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Pension decrement rates across Europe – Are they too low?☆

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ABSTRACT

In light of an ageing population, many European countries are aiming to increase the effective retirement age. Pension decrement rates play a key role in this as they determine the financial incentives for early retirement. In the following, a model is developed to calculate decrement rates which lead to financial neutrality of the decision on when to retire. The model is applied to 19 European countries. Results show that in most countries, official decrement rates tend to be lower than neutral rates. A sensitivity analysis and several alternative model variants underscore that, for the majority of countries, this result seems to be robust to the assumptions taken.

Introduction

Over the past decade, pension systems have been under revision in almost every European country. Despite large differences among the policy measures applied, one important element of most reforms was prolonging working life and increasing the effective retirement age. On a European level, these issues have found their way into the EU growth strategy "Europe 2020" (European Commission, 2010), which aims to raise the employment rate of the population aged 20 to 64 to at least 75 percent by, among other things, increasing the participation of older workers. To reach this goal, regulations concerning early retirement were severely tightened in many countries.

One key factor in retirement decision-making has, however, remained relatively disregarded in the recent reform debate across Europe: pension decrements. They come into effect when a person retires early, causing a reduction in pension benefits to make up for the longer retirement duration. If the decrements are set at a low level, they may provide significant incentive to retire early. For example, Börsch-Supan (2004) shows that incentives for early retirement cause inequity between individuals whose contributions are the same but who retire at different ages. Without decrements, monthly benefits would be the same for persons A and B despite the fact that person A retires earlier than person B.[1] If these two persons had the same remaining life expectancy, benefit reception would be one year longer for the first person than for the second one, which may create a financial incentive to retire earlier.

The aim of pension decrements is, inter alia, to eliminate such incentives, so that at the margin it is actuarially neutral for individuals whether they retire at the statutory retirement age or before.[2] However, the level of decrements which eliminates these incentives might not necessarily be the same for different individuals. This is caused by time preference rates which can be rather heterogeneous among different individuals.[3]

Since the late 1990s, a growing body of literature has emerged studying the effect of pension system design on the decision to retire. Gruber and Wise (1998) examine benefit accrual in 11 different countries. To determine whether a pension system sets incentives to retire early, they apply the concept of social security wealth.[4] This concept is

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[1] Suppose for simplicity that the second person does not accrue any further pension rights during this one year in which he is not yet retired.

[2] Neutrality regarding the entry into retirement is not only important from the individual's point of view. For a pension agency, it is also important that the decision on when to claim pension benefits does not have an impact on its finances. For example, Börsch-Supan et al. (2007) show for Germany that pension expenditures can be decreased significantly through a reduction in early retirement incentives.

[3] For research on individually differing time preference rates see e.g. Gustman and Steinmeier (2005), Samwick (1998), and Bozio et al. (2017). More details are provided in the results section.

[4] Social security wealth is defined as the present value of accrued pension entitlements minus future taxes paid.

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also applied by Blöndal and Scarpetta (1999) as well as by Dorn and Sousa-Poza (2005) and Fischer and Sousa-Poza (2006).

Furthermore, there are several country-specific studies on incentive effects of pension reforms. Mastrobuoni (2009) for example shows for the U.S., an increase in the normal retirement age induces individuals to alter their retirement behavior. Giesecke (2014), Hanel (2010), and Hanel and Riphahn (2012) examine effects of pension decrements for early retirement. All three studies find that individuals respond to these reforms by postponing retirement.

While these studies focus on the extent of behavioral responses and do not calculate actuarially neutral decrement rates, Burkhauser (1980) provides an early application of actuarial concepts to examine incentives to retire. Disney and Whitehouse (1999) as well as Queisser and Whitehouse (2006) compare official decrement rates to rates that would be actuarially neutral. These studies cannot, however, reflect the legal changes enacted across European pension systems over the last decade. The aim of this paper is to bridge this gap. With a sample of 19 European countries[5], we provide one of the largest cross-country estimations of actuarially neutral decrement rates so far.

The main question we want to answer is whether decrement rates for first-pillar pay-as-you-go pensions across European countries are lower than actuarial neutral rates for individuals whose characteristics follow national averages.[6] Our results indicate that this might be the case in many European pension systems. In other words, in these schemes early retirees have a financial advantage over those who retire at the statutory retirement age. This advantage could be eliminated via an increase in decrement rates. This outcome is also relevant for the common European policy goal to raise employment rates, because one can expect that an increase in decrement rates will go along with fewer scheme members opting for early retirement compared to the legal status quo.[7] To this end, actuarially neutral decrement rates for entry into retirement one year prior to the regular entry age[8] are computed and compared to official decrement rates. For these estimations we apply the concept of marginal individual[9] neutrality. This concept requires that the present value of early pension benefits equals the present value of regular pension benefits minus the present value of contribution payments saved by retiring early.[10]

The paper is structured as follows: The first section presents early retirement regulations and decrements as they are currently applied in European countries. Next, an actuarial model is developed for the calculation of marginally individually neutral decrement rates. It is subsequently enlarged to be able to incorporate different specifications. The results of the calculations are presented in the following section; followed by a sensitivity analysis. The final section summarizes our main findings. A discussion of underlying assumptions and data applied in the model can be found in the appendix.

Official decrements and early retirement options across Europe

Early retirement schemes can be characterized both by the amount of years a pension can be claimed early and by the decrements that apply for early retirement. Early retirement rules (outlining the conditions for receiving retirement benefits before the standard retirement age) vary across Europe. There are countries which do not grant old age pension benefits before the legal retirement age or do so only for a small fraction of scheme members (e.g. Denmark, Poland, and the United Kingdom). These countries are excluded from the following analysis.[11] Other countries generally grant early pensions to all scheme members who fulfill certain contribution requirements. Often, a person featuring the average working duration of the respective country does however not fulfill these requirements. This is the case for both genders in Belgium, Bulgaria, Luxembourg, Portugal, Romania, and Slovenia and for women in Austria, Cyprus, Malta and Spain.

Table 1 shows that while early retirement rules differ widely among the countries considered in this study, legal retirement at the age of 65 years seems to have become more and more a standard.[12]

As regards decrement rates applied for claiming pension benefits early, there is also much variation.[13] – not only between countries but also within them. In six countries there are no decrements at all, as can be seen from the last column of Table 1.[14] In the remaining countries, decrements for retiring one year early without being eligible for special allowances lie between 3.6 percent in the Czech Republic, Germany, and Slovenia, and 8 percent in Spain. The Czech Republic is the only country in the sample in which retirement age-dependent decrements are applied.

As with early retirement regulations, reforms are also under way in terms of pension decrements, though in fewer countries. In Austria early retirement deductions are to increase to 5.1 percent, and in Cyprus, pension decrements of 6 percent were first introduced in 2013.[15]. In contrast to raising the early retirement age only, increasing decrement rates allows individuals to decide on their retirement age more flexibly. They can choose when to start claiming benefits; albeit with any applicable decrement rates in mind.

Determination of marginally individually neutral pension decrements

Main concepts

The paper of Queisser and Whitehouse (2006) is one of the most important contributions to the study of neutral decrement rates. The authors differentiate between two concepts, *actuarial fairness* and *actuarial neutrality*. Actuarial fairness is defined as the equality of the

[5] Originally, the sample contained the EU-27 plus Switzerland. However, in six countries (Denmark, Ireland, the Netherlands, Poland, Hungary, and the United Kingdom) early retirement is, generally, not possible. Furthermore, for Italy, Latvia, and Sweden, where notional defined contribution systems with individual accounts are in place, it is assumed that in these systems decrement rates are close to neutrality by definition. Thus, the sample analysed in the following contains 18 EU countries plus Switzerland.

[6] This question is in line with the proposal by the European Commission which recommends applying actuarial neutral decrement rates in earnings-related retirement systems (European Commission, 2015b, p. 183).

[7] This is supported by the results of e.g. Mastrobuoni (2009), Giesecke (2014), Hanel (2010), and Hanel and Riphahn (2012)

[8] This is the base case scenario. We also compute marginally individually neutral decrement rates for two years of early retirement.

[9] We use the term "individual" to indicate that we calculate decrement rates from an individual's point of view, not from the perspective of the pension system.

[10] This concept is a modification of the concept used by Queisser and Whitehouse (2006); it is also applied by Gasche (2012). For a more detailed discussion see the section on main concepts.

[11] Recently, more countries have applied policies pointing in the same direction. For example, early retirement was suspended in Portugal in 2012 for the duration of the Economic and Financial Adjustment Programme (OECD (2014: 79)). However, in the following we will assume that early retirement is still possible in Portugal.

[12] However, in several countries increases in early retirement age are already under way. Despite these reforms, there are examples of retrograde steps: In France, the age at which pension claiming is possible without any deductions was lowered from 62 to 60 years for certain groups. In Germany, a similar reform making retirement without decrements possible from the age of 63 years for exceptionally long-insured persons came into effect in 2014.

[13] Variation does not only occur between countries but also within them. Often, several different early retirement schemes are in place. Some allow early retirement without any decrements, for instance for individuals who have fulfilled a predefined contribution period, who are disabled or unemployed, or who have been working under unhealthy conditions.

[14] Finland, decrements only exist for national pensions. They amount to 4.8% per year of early pension. However, a person whose characteristics follow national averages will not be entitled to national pensions. Pension decrements do not exist in the earnings-related pension system; but the accrual rate for working from age 63 on amounts to 4.5% (in contrast to 1.9% or 1.5% for earlier ages). This non-linear accrual schedule is taken into account in the following calculations.

[15] See OECD (2014: 72) and European Commission (2015a: 65).