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Reversing Early Retirement in Germany

A Longitudinal Analysis of the Effects of Recent Pension Reforms on the Timing of the Transition to Retirement and on Pension Incomes

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Abstract: This article investigates the effects and risks of recent pension reforms in Germany. While German pension policy systematically supported early retirement for many years in order to relieve the regulated labour market in times of economic stagnation, there has been a substantial change of the pension policy paradigm in the more recent past. Latest reforms expect older people to prolong working life. Using data from the German Socio-Economic Panel (GSOEP) and applying micro-level longitudinal research methods, this contribution shows that the recent reversal of early retirement in Germany has been at the price of growing social inequalities in old age.

Keywords: Early retirement · Reversal of early retirement · Social inequality · Pension income · Longitudinal research

1 Introduction

For several decades, German pension policies strongly relied on pushing older employees out of the labour market very early. The massive expansion of early retirement programmes since the 1970s had mainly an economic background. Early retirement was systematically used to relieve the comparatively regulated German labour market in times of economic stagnation and increasing unemployment rates (see, for example, *Guillemard* 1991; *Kohli et al*. 1991; *Arnds/Bonin* 2002; *Gruber/Wise* 1999, 2004, 2005; *Blossfeld e al.* 2006). As a result, the transition out of employment became strongly destandardised in Germany and the legal retirement age of 65 was (and still is) in practice meaningless for the timing of the employment exit of most older workers. In East Germany, after reunification, the actual age of employment exit was even approximately at the age of55 (i.e. ten years before legal retirement age, see *Buchholz* 2008). This strong emphasis on early retirement in Germany also becomes clear by looking at the employment rates of older men in

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pre-retirement age, which is the age group of 60- to 64-year-olds. For many years, only less than one third of the older men in this age group were still working in Germany. Indeed, in comparison to several other European and Northern American societies, the employment rates of older people have been below average in Germany for many years (*Hofäcker/Pollnerová* 2006; *Ebbinghaus* 2000, 2008; *Börsch-Supan* 1992, 2000).

Yet, for several years now, we can observe a clear policy change. German policy makers increasingly expect older people to prolong their working life. For example, reforms have been introduced increasing the penalties in case of an early withdrawal from employment, various early retirement paths were gradually closed, the share of private pensions was increased,[1] and since the beginning of 2012, the legal retirement age has been incrementally increased from the age of 65 to the age of 67. These various reforms are a reaction to the growing financial burdening of the public pension system in times of demographic aging which also creates an increasing imbalance between those persons contributing to the public pension system and those claiming pensions in Germany. Further, these reforms aim at reducing the growth of non-wage labour costs caused by increasing needs of the social insurance system. For several years now, about 20 percent of the gross wage of a regular dependent employee in Germany is spent on the public pension insurance (*Deutsche Rentenversicherung* 2012).

This article aims at analysing the effects of the profound pension policy change in Germany. At the core of our empirical analyses will be the following questions: How successful is the new policy paradigm? Are people really able to prolong their working lives, as intended by recent pension reforms or do they still exit early from employment? And, are all older people able to meet the new policy expectation to prolong working life or do specific parts of the older population fail in maintaining longer employment careers? Finally, what are the risks of recent reforms especially with regard to financial well-being during retirement?[2] To answer these questions, we investigate the late working lives and pension incomes of older people of the three birth cohorts 1934-39, 1940-45 and 1946-51. Specifically, we examine the timing of their transition to retirement, the timing of their transition to non-employment, their risks of old age unemployment as well as the level of their

[1] It has to be noted, however, that the share of private pensions is still very low in Germany (*Börsch-Supan et al.* 2008; *Börsch-Supan/Wilke* 2003), especially compared to liberal welfare states, such as the United States of America, but also compared to various European societies.

[2] This set of questions was also at the core of the international comparative research project *flex*CAREER which was recently completed at the Universities of Bamberg and Göttingen in Germany and which was funded by the German Research Foundation (DFG). The central aim of the *flex*CAREER project was to empirically investigate if, how, and to what extent, the employment and income situation of late-career employees and retirees have developed in nine European societies (that is Germany, the Netherlands, Italy, Spain, Denmark, Sweden, Great Britain, Hungary and Estonia) and the United States of America in times of demographic aging. For the detailed results of all country studies and the international comparison, please see *Blossfeld et al.* (2011).

pension incomes. Our longitudinal analyses are based on data from the German Socio-Economic Panel (GSOEP).

The structure of our article is as follows: In the next section, we present an overview of the German pension system paying special attention to the massive expansion of early retirement regulations in the 1970s and 1980s and the profound change German pension policy has undergone since the 1990s. Afterwards, we outline our research question and research design. In the succeeding section, we present the results of our empirical micro-level analyses. We conclude with a short summary and discussion of our results.

2 "Breaking with Traditions" in Germany: From a system supporting early retirement to a system increasingly penalizing early exits

In Germany, the transition to retirement was massively flexibilised and destandardised since the 1970s. Mainly as a reaction to the stagnation of economic growth after the oil price crises in the 1970s, growing unemployment rates and increasing labour market problems, the German government introduced various reforms which allowed firms to lay off older workers in a "socially peaceful" manner by sending them into early retirement (*Kohli et al.* 1991; *Wübbeke* 1999; *Buchholz* 2008). Since this time, the legal retirement age of 65 became increasingly meaningless (e.g. *Wübbeke* 1999; *Buchholz* 2008; *Ebbinghaus* 2008). The first flexibilisation of retirement was introduced with the pension reform of 1972 which allowed an early transition to retirement already at the age of 63 for large parts of the workforce (*Arnds/Bonin* 2002: 12). Although this first reform was actually introduced for reasons of work humanisation, early retirement soon became a common instrument of firms to adapt to a more tense economic situation, and sending older employees into early retirement became increasingly popular to relieve the regulated national labour market in times of growing unemployment rates (*Esping-Andersen* 1990: 227; *Gatter/Hartmann* 1995: 413; *Wübbeke* 1999: 105; *Buchholz* 2008: 105-110).

Yet, the introduction of the flexible retirement age of 63 was not the only reform. In the 1980s, various other reforms have been undertaken to allow an even earlier transition to retirement. For example, between 1984 and 1988 a special early retirement scheme (the so-called "*Vorruhestandsregelung*") was introduced to face growing labour market problems. This special scheme lead to firms already "laying off" older employees at the age of 58 while generously financing the period until these former older employees became eligible for public pensions. Further, a special programme for partial retirement was introduced which allowed an earlier withdrawal from the labour market. However, one of the most prominent early retirement programmes became the German unemployment insurance which allowed firms to "lay off" older workers already at the age of 57 years and 4 months. In the subsequent 32 months (i.e. until the age of 60), these people were eligible for generous unemployment insurance payments replacing about 60 to 67 percent of the former net income. Often, these people received additional payments from their former employer. At the age of 60, persons were then able to retire via a special scheme of the Ger-

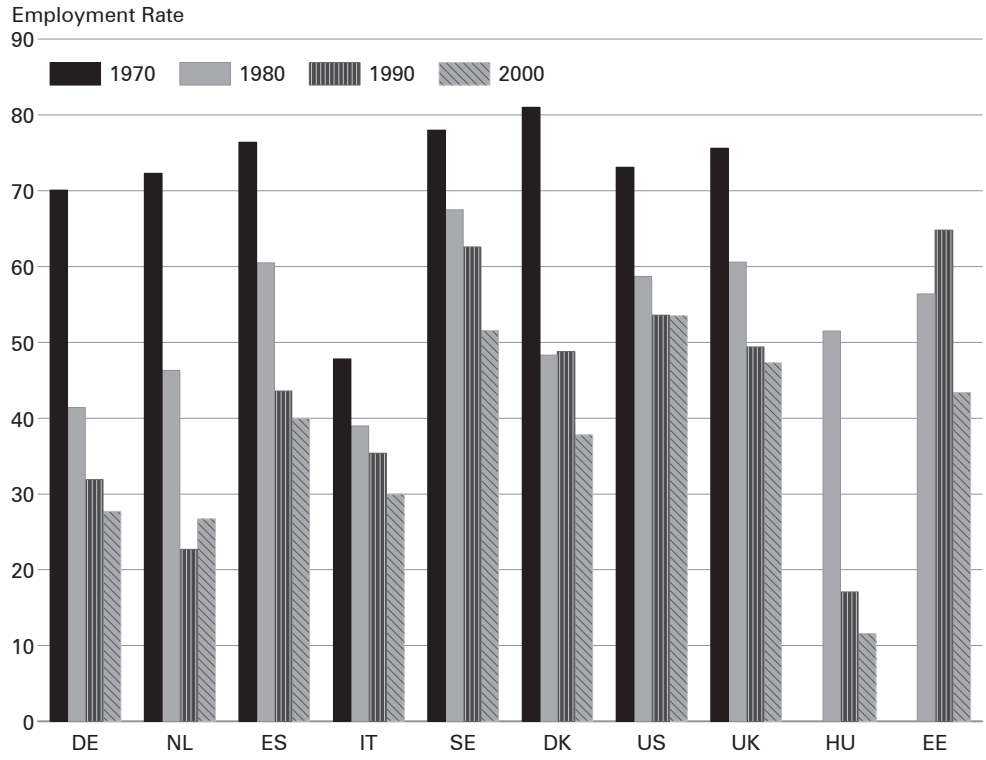
man pension system which was originally designed to allow long-term unemployed to retire earlier (*Gatter/Hartmann* 1995; *Arnds/Bonin* 2002; *Schmid* 2002; *Buchholz* 2008). It has to be noted that this unemployment path to retirement was financially highly attractive for both employers and older employees. Older employees usually did not face a significant worsening of their financial situation due to subsidy payments by their former employer. For employers, the unemployment scheme allowed to shed older workers already several years before both the legal and flexible retirement ages, while the vast part of the former payroll costs for the older workers were paid by the German unemployment and pension insurance, and employers only paid about one third of these older workers' former net wage (*Buchholz* 2008). Yet, also for the German government this solution was highly attractive because it allowed to lower the official unemployment statistics[3] and to introduce "hidden dismissals" within the highly regulated German labour market. For East Germany, the German government even extended this regulation in the first years after reunification allowing older workers to claim unemployment insurance payments not only for 32 months but even for 5 years (so-called "*Altersübergangsregelung*"). As a result of this regulation, older workers in East Germany "retired" already at the age of 55 (which is 10 years before the legal retirement age and 8 years before the flexible retirement age) in the first years after reunification (*Ernst* 1996; *Buchholz* 2008). It has to be noted that these older unemployed in East Germany never entered the official German unemployment statistics. Officially, the share of unemployed persons among those aged 55 or older was less than 5 percent in autumn 1992 although this special unemployment scheme was used by almost one million people in the first two years after German reunification (*Ernst* 1995; *Buchholz* 2008).

Against the background of this massive expansion of early retirement regulations it is thus not surprising that old age employment rates strongly decreased in Germany since the 1970s. Figure 1[4] shows the development of employment rates of 60 to 64 year old men in Germany and various other countries. It becomes clear that employment rates of workers in pre-retirement age decreased in all countries since the 1970s. Yet, the magnitude of this decline was very different, and Germany is one of the countries in which the decline was the strongest (we find a decrease of about 43 percentage points between 1970 and 2000). More detailed micro-level analyses based on longitudinal data (*Buchholz* 2008) have shown that

[3] For many years, many of the older unemployed were not presented in official unemployment statistics (*Engstler/Brussig* 2006). However, in our empirical study we will be able to capture the share of the older unemployed more realistically because our analyses will be based on data from the German Socio-Economic Panel in which persons interviewed report the labour market status. Thus, our analyses will not be (as) biased as the official unemployment statistics in Germany.

[4] In this figure, which is based on cross-sectional data, we only present the employment rates of men in order to avoid confusing the development of early retirement with increasing female employment rates which occurred in the same period. The selection of the countries presented in this figure is based on the countries that participated in our international comparative research project *flex*CAREER at the Universities of Bamberg and Göttingen in Germany (see footnote 2).

Fig. 1: Employment rates of 60–64 year old men in 1970, 1980, 1990 and 2000



Notes: NL 1971 instead of 1970, ES 1972 instead of 1970, DK 1983 instead of 1980, UK 1984 instead of 1980, HU 1992 instead of 1990; DK 1970 participation instead of employment rate; EE 1980 based on ILO estimates.

Source: Own calculations based on OECD Labour Force Statistics

the use of early retirement was highly selective and took place particularly in firms and sectors which faced growing economic uncertainties and a high pressure of rationalisation and restructuring (i.e. huge firms of the classical industrial sector). This clearly proves that employers have also been main actors for the expanding use of early retirement in Germany. A comparable picture could be drawn for the Netherlands, which also belong to the conservative welfare regime, as well as for the Southern European[5] countries in which early retirement was also massively used to relieve the economy and the regulated national labour markets.

[5] As the retirement age in Italy is very low, one would have to extend the analysis to the age group 55 to 59 years to show a development which is comparable to Germany, the Netherlands and Spain (*Hofäcker/Pollnerová* 2006).

Still, while in the 1970s, 1980s and early 1990s supporting the massive use of early retirement seemed to be an appropriate and effective measure to tackle the increasing labour market problems and economic stagnation, this has strongly changed in the more recent past which is marked by debates about the financial sustainability of the national pension system and efforts aiming at unburdening the national welfare state budget. For example, in 2000, public pension expenditures amounted to about 200 billion Euros in Germany, representing approximately 20 percent of public spending and 12 percent of the GDP (*OECD* 2001; *Börsch-Supan/Wilke* 2003). Against the background of these figures, it is hence not surprising that public debates and political decisions on pension schemes have altered dramatically in Germany in the past ten to fifteen years. Actually, the efforts of today's pension policy aim at setting incentives for maintaining long(er) working lives in order to compensate the increasing financing problems of the public pension system in times of demographic aging (*Börsch-Supan* 2003). There have been several reforms which expect people to work longer or, in case they are unable to do so, to "pay the price" for an early employment exit. With the pension reforms of 1992 and 1999, access to early retirement programmes has been increasingly restricted by gradually closing various paths to early retirement, raising the legal retirement age, and increasing pension reductions in cases of early exit from the labour market. The pension reform from 2001 aimed at reducing public pension benefits, and additionally strengthened the incentives for private pension savings. Further, the so-called "Hartz" labour market reforms led to a decrease in early retirement as the opportunities to retire early after a period of unemployment were reduced. Although we are not yet able to comprehensively access the effects of this reform, it has to be mentioned that since the beginning of 2012, the legal retirement age is being progressively increased to the age of 67.

Although the German public pension system can still be described as relatively generous compared to those of other countries (especially those of liberal welfare states such as the U.S. and Great Britain; *Börsch-Supan et al*. 2008; *Börsch-Supan/Wilke* 2003), it has to be noted that these reforms caused a fundamental shift in Germany's general pension policy paradigm. In the 1970s, 1980s and early 1990s, the German pension system was also very generous with those who "failed" to work until legal retirement age. Actuarially non-neutral early pensions enabled a secure financial situation for large parts of the older population. Consequently, Germany's original policy aimed at reducing social inequalities among older people with unequal opportunities on the labour market. However, the most recent reforms fundamentally changed this situation. The German government strongly decreased its efforts to buffer and cushion employment risks in later life. Instead, with the latest reforms, labour market risks are increasingly privatised and individualised, and older people are increasingly expected to account for those risks by themselves.

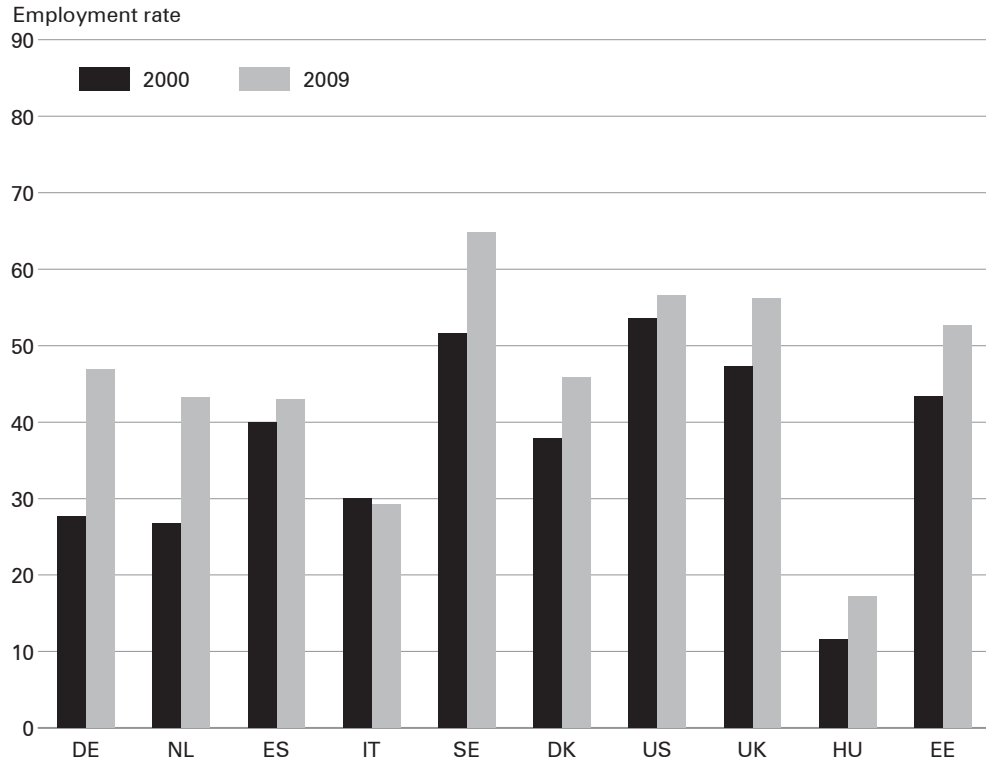
Generally, these recent reforms in Germany (and other European countries) start from the premise that the transition to retirement and the use of early retirement can be explained by micro-economic theory. It is argued that early retirement is a result of rationally acting and maximizing individuals (see, for example,

Börsch-Supan 1998; *Riphahn/Schmidt* 1997; *Siddiqui* 1997). According to this argument, older people opt for early retirement (and more leisure time) as long as the national pension system offers generous early pensions that are not or only slightly adjusted to the fact that these people leave employment earlier, no longer contribute to the social security system and claim pensions for a longer period. In this theoretical framework of modelling the transition to (early) retirement, the main (and only) actor is the older worker. According to this approach, the different rates of early retirement in various countries can be explained only by the different national (early) retirement systems. It is argued that, in Germany, the rate of early retirement is much higher than in the UK, for example, because pensions of early retirees are very generous (*Börsch-Supan* 1998; *Riphahn/Schmidt* 1997; *Siddiqui* 1997). Thus, the so-called "pull factor" of the pension system is much stronger in Germany than in the liberal welfare state model of the UK. However, the micro-economic approach is also heavily criticised, especially by sociologists (see, for example, *Kohli* 1991; *Arnds/Bonin* 2002; *Blossfeld et al.* 2006; *Ebbinghaus* 2008). These authors state that employers, governments as well as various country-specific institutional features also have to be modelled in order to appropriately understand early retirement. Further, there is not only a "pull factor" but also a "push factor" that determines early retirement. For example, employers and governments use early retirement to react to growing economic uncertainty, to realise economic restructuring and to relieve the national labour market. Thus, it has to be critically examined in our following analyses if reforms solely targeting and reducing the "pull factors" (by increasing pension reductions in case of early retirement) are likely to be successful. Further, the actual and potential risks of such reforms with regard to social inequalities among the retired population have to be identified.

Figure 2 presents the employment rates of 60- to 64 year old men in Germany and other modern societies for 2000 and 2009.[6] As can be seen, we indeed find a substantial growth of the employment rate among the older workforce in Germany. Within only nine years, the employment rate of 60 to 64 year old men increased by about 20 percentage points. Not surprisingly, German policy-makers celebrate this increase in old age employment as a huge success of their latest reforms.

[6] Again, we will focus on the employment rates of men in order to avoid mixing up early retirement trends with increasing female employment rates across cohorts. The selection of countries is again based on the countries which participated in our international comparative *flex*CAREER project (see footnote 2).

Fig. 2: Employment rates of 60-64 year old men in 2000 and 2009



Source: Own calculations based on OECD Labour Force Statistics

3 Research Approach and Design

Necessity for a longitudinal research approach to assess the reversal of early retirement

For a variety of reasons it is very risky to assess the success of recent pension reforms on the basis of broad cross-sectional figures as they are used in Figure 2:

- First of all, this simple cross-sectional approach does not allow to control whether the recent increase in old age employment is caused by a changing composition of the older workforce. It is well known that, as a result of educational expansion, the qualification level of today's cohorts of older workers is significantly higher compared to that of past cohorts. As higher qualified people tend to retire later, we would thus "automatically" find a trend towards longer working lives across time. Yet, in that case, the increase of old age employment rates would be the result of the different educational *composition* of recent cohorts of older workers and *not* the result of the

recent pension reforms. Simple cross-sectional estimations do not allow appropriately controlling for this fact.

- Second, on the basis of these cross-sectional figures, we are not able to understand whether the *whole* strata of the older workforce benefitted from increasing employment rates in later life or if only *parts* of the older workforce (namely, already privileged workers, such as the higher qualified) are able to maintain longer working lives while already disadvantaged and lowly qualified older persons still have to retire early and – compared to the 1970s, 1980s and 1990s – bear the price of significant pension reductions.
- Thirdly, with cross-sectional data, it is impossible to *causally* model and estimate the *consequences* of the timing of the transition to retirement on individuals' pension incomes. However, this would be very important in order to understand if recent reforms have been really successful or whether instead, they rather tend to be a hidden pension reduction, maybe even at the price of increasing social inequalities in old age.

In fact, a micro-level longitudinal research design is necessary to address all these important questions. Our following empirical analyses are thus based on data from the German Socio-Economic Panel (GSOEP) which provides longitudinal information on individuals and households in Germany since 1984. Using GSOEP data allows us to investigate if there remains a significant effect for the reversal of retirement after controlling for potential changes in the composition of the older workforce across cohorts (especially the increasing level of education across cohorts). Additionally, by using a micro-level research design, we are able to assess whether all parts of the older workforce benefitted from the recent increase of old age employment rates or not. Finally, we can carry out causal analyses that allow us to investigate the financial consequences of early retirement and changes therein in the light of latest pension reforms in Germany.

Research design, data used and sample description

For our purpose, we use a sub-sample of the GSOEP by selecting 50 year old people born between 1934 and 1951 and by following their working lives and their transition to retirement. Our empirical analyses are based on GSOEP data for the years 1984 till 2007. For the years 1984 to 1989, the GSOEP includes information for only Western Germany; since 1990, it also includes Eastern German households. Migrants are overrepresented in the GSOEP in order to allow detailed analyses of this sub-group of the population.

With regards to our research design, we apply the following modelling: As the transition to non-employment and the transition to retirement are not necessarily co-occurring events in Germany, it is important to differentiate between *direct* and *indirect* transitions to retirement in order to assess the success, risks and effects of the latest pension reforms appropriately. Consequently, we will investigate both the *indirect* and *direct* transition to retirement by, on the one hand, modelling the point in time of the transition to *retirement* and, on the other hand,

the point in time of the transition to *non-employment*. The transition to retirement captures the time when a person first claims pension benefits and is no longer part of the labour market. In contrast, the transition to non-employment indicates the time when persons end working life. For those who make a *direct* transition from employment to retirement, the time of the transition to non-employment would obviously be identical to the time of the transition to retirement. However, for those making an *indirect* transition to retirement after a phase of unemployment, we would no longer use the time when persons claim pension benefits for the first time (e.g. at the age of 60), but the time when these persons became unemployed (e.g. the age of 57).[7] Additionally, we model transitions to *unemployment*.[8] This enables us to assess whether the recent reversal of early retirement has also been able to bring the massive use of unemployment as a path to early retirement to a halt or if the reversal of old age unemployment has been less effective. Finally, we model the *level of pension incomes* of the persons in our sample in order to examine if the recent attempts of policy-makers to reverse early retirement have been accompanied by significant pension losses in younger birth cohorts of retirees.

Our sample for analysing the transition to retirement consists of individuals who were employed *or* unemployed at the age of 50. Following this definition, our sample for these analyses consists of 1993 men and 1422 women (55 percent West Germans, 21 percent East Germans, 24 percent with a migration background). To analyse the transition to non-employment and the risks of old age unemployment, of course, only individuals who were employed at the age of 50 were selected. According to this definition, our sample for the unemployment analyses includes on 1853 men and 1255 women (58 percent West Germans, 19 percent East Germans and 23 percent with a migration background).

To estimate developments over time, we compare three different birth cohorts, that is, people born in 1934-39, 1940-45 and 1946-51. While the two older birth cohorts benefitted from the early generous retirement regulations, the youngest birth cohort 1946-51 is the one most affected by latest pension reforms in Germany. This cohort is expected to rather prolong their working life or, in case of failing to do so, to "pay the price" for an earlier employment exit.[9] In order to study the causal relationship between older individuals' success on the labour market, their path to retirement and the resulting effects on their pension incomes, we introduce various

7 Obviously, it could be critically argued that a transition to unemployment does not necessarily have to be followed by a transition to retirement but could instead also be followed by a transition back to employment. Yet, as an additional sequence analysis with our data has shown, the transition to (first) unemployment after the age of 50 is usually connected with a subsequent transition to retirement. Thus, our analyses for transitions to non-employment and unemployment can de facto serve for modelling indirect transitions to retirement.

8 We use the self-reported labour market status of the respondents of the GSOEP which is available for all years of the panel study.

9 Unfortunately, we are not able to differentiate between more birth cohorts due to the small sample sizes. However, for the reader it is important to know that the youngest birth cohort of our analyses is the one which is most affected by the recent pension policy change in Germany.

covariates, namely the individuals' level of education and the characteristics of their employer, that is, firm size and branch of industry, into our models.

Methodology

For the longitudinal analyses presented in this article, we apply descriptive and multivariate methods of event history analysis. Event history analysis models the time-dependency and dynamics of the individuals' transitions and life events (*Blossfeld*/*Rohwer* 2002). As a descriptive method, we use product-limit estimations which calculate so-called survivor functions (*Kaplan*/*Meier* 1958) that allow us to understand how long it takes until the individuals of our sample experience the event of concern (in our case, for example, the transition to retirement). Additionally, we apply logistic regression models (*Yamaguchi* 1991) which permit to include various time-constant and time-varying covariates into our longitudinal analyses. This enables us to estimate if the rate and time of a specific event is influenced by the characteristics of the respondents (e.g. their educational level or the economic sector they are working in). To estimate the absolute pension income, we finally use linear regression models.

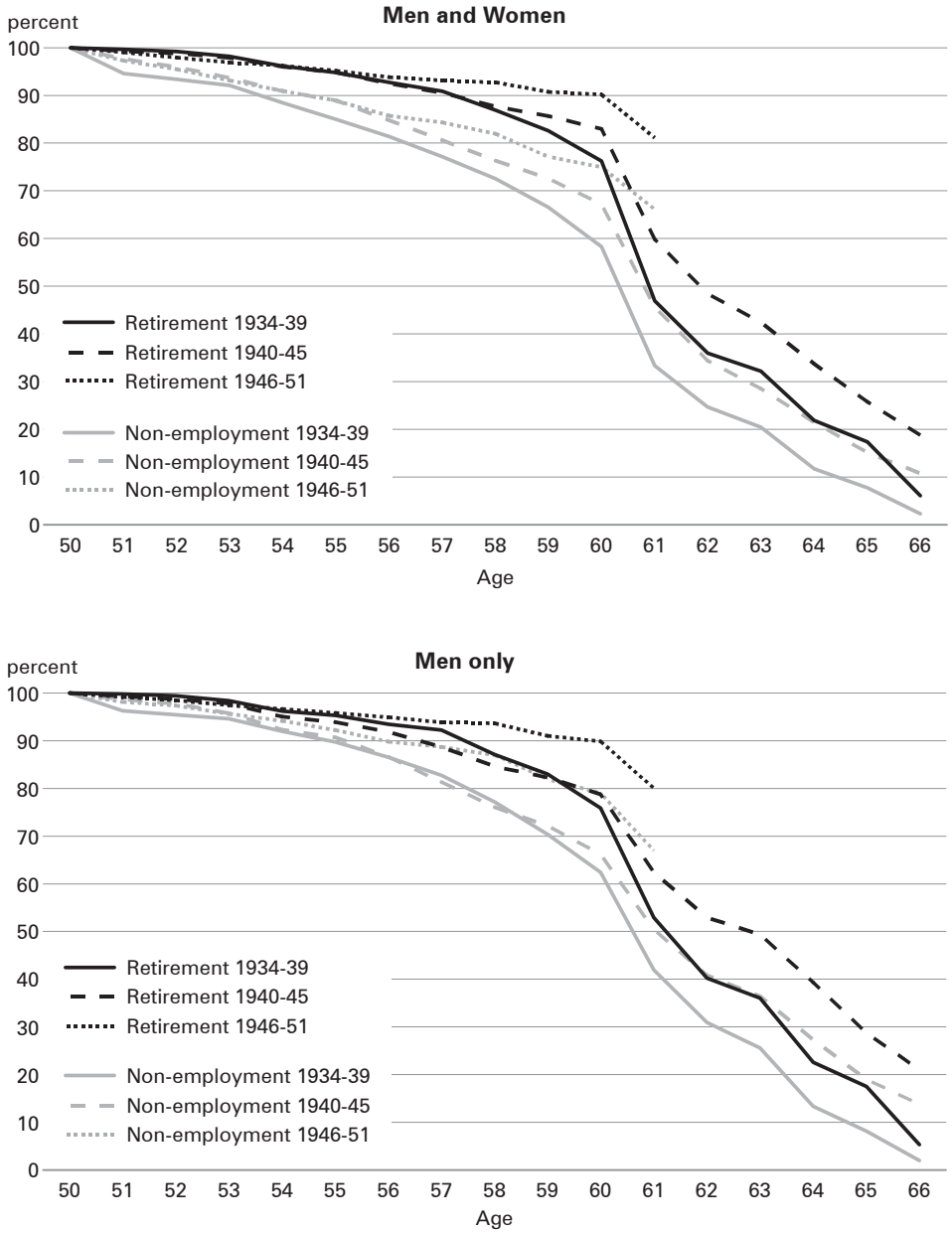
4 Empirical evidence for the effects of recent reforms

The transition to non-employment and to retirement – descriptive findings

Figure 3 presents the results of product-limit estimations for the transition to non-employment and the transition to retirement for the three birth cohorts under study (in a first step, for both men and women; in a second step for men only to make our longitudinal results more comparable to the cross-sectional results presented in Figures 1 and 2). These product-limit estimations allow us to descriptively investigate the particular time of the transition to retirement and the transition to non-employment as well as changes in these transitions across cohorts. For our youngest cohort, that is the cohort 1946-51, observations end at the age of 61, the time of their last interview in the GSOEP data we use.

These longitudinal analyses indicate a clear delay of the transition to retirement in Germany in recent years. For example, at the age of 60, almost 25 percent of the oldest cohort have retired (among men: 24 percent). In the middle cohort 1940-45, this figure reduces to 17 percent (among men: 20 percent) and amounts to only 10 percent in the youngest cohort 1946-51. At the age of 63, which was introduced as the flexible retirement age in Germany in 1972, the majority of the respondents born between 1934 and 1939, namely 68 percent, have retired (among men: 64 percent). In the cohort 1940-45, this was only the case for about 58 percent of the respondents (among men: 50 percent). Thus, we find a significant delay in the transition to retirement for younger cohorts. Yet, these estimations also highlight that neither the legal retirement age of 65 nor the flexible retirement age of 63 play an important role for structuring the timing of the retirement transitions in Germany.

Fig. 3: Transition to retirement vs. transition to non-employment by birth cohorts (survivor percent derived from product-limit-estimations)



Notes: The analyses for the transition to retirement are based on persons employed or unemployed at the age of 50. For the transition to non-employment, our estimations are based only on persons employed at the age of 50.

Source: Own calculations based on the GSOEP (1984-2007).

However, there is another important fact that can be derived from Figure 3. Comparing the estimates for the transition to retirement with the estimates for the transition to non-employment (which could be either a transition to retirement *or* a transition to unemployment) reveals that for a substantial number of older people the transition to retirement indeed takes place only indirectly after a phase of unemployment. Although the product-limit estimations for the transition to non-employment also indicate a prolongation of working life across birth cohorts, it has to be stated that in *all* cohorts of our study people tend to exit employment significantly earlier than they retire. The difference between the direct and indirect transitions to retirement amounts up to remarkable 20 percentage points. For example, in the cohort 1934-39, 24 percent entered retirement at the age of 60 while 42 percent have already left employment. In the cohort 1940-45, 17 percent retired at the age of 60 while 33 percent have already left employment at this age. In the youngest cohort 1946-51, the share of those who retired at the age of 60 amounts to 10 percent while the share of the non-employed is about 25 percent. Consequently, there is a considerable gap between these two transitions. This clearly shows that indirect transitions to retirement after a phase of unemployment are widespread in Germany. This result already indicates that reforms aiming at reversing early retirement in Germany should not only be concerned about changing pension regulations but should also target the employability of older people.

Transition to retirement

In the following, we present the results of our multivariate models for the timing of the transition to retirement and changes therein across cohorts (Table 1). This multivariate approach enables us to examine if the delayed transition to retirement across cohorts remains significant after controlling for additional factors, especially the educational level of the individuals which has risen across cohorts. In these more complex models we also find that younger birth cohorts (that is people born between 1940-45 and 1946-51) retire significantly later than the cohort of people born between 1934 and 1939. These effects remain highly significant even if we additionally control for various factors, namely the level of education, branch of industry and firm size (models 2, 3 and 4). Hence, we find a delay of retirement in Germany that is indeed *independent* of the changing composition of the population of the older workforce.

Table 1 additionally reveals an influence of individuals' educational level, although this influence is weak. Only very highly qualified people with a college or university degree retire significantly later. For the remaining people (which is the majority of the workforce), a significant difference cannot be found. Yet, it has to be noted that in the same model we control if the respondents experience the transition to retirement after a phase of unemployment or not, and it is likely that especially lower qualified people face a higher risk of retiring only indirectly after a phase of unemployment. Our following models on the risks of ending working life in unemployment (see Table 2) test if educational differences increase when we look specifically at indirect transitions to retirement which have become less favourable for individuals.

Tab. 1: Timing of the transition to retirement (logistic regression model)

	1	2	3	4
Constant	–4.36**	–4.30**	–4.18**	–4.27**
Age				
50–57 (ref.)	—	—	—	—
58–59	0.66**	0.68**	0.67**	0.65**
60–61	2.91**	2.95**	2.95**	2.96**
62–63	2.52**	2.59**	2.59**	2.61**
64 plus	3.47**	2.58**	3.61**	3.64**
Population group				
West German (ref.)	—	—	—	—
East German	–0.14	–0.06	–0.10	–0.02
Migration background	–0.28**	–0.38**	–0.38**	–0.39**
Sex				
Men (ref.)	—	—	—	—
Women	0.17*	0.12	0.15+	0.20*
Birth cohorts				
1934–39 (ref.)	—	—	—	—
1940–45	–0.51**	–0.46**	–0.45**	–0.45**
1946–51	–1.09**	–1.01**	–1.00**	–0.97**
Late career characteristics				
Currently unemployed	0.80**	0.78**	0.78**	0.77**
Employed at the age of 50	0.44**	0.46**	0.37**	0.28**
Educational level				
Lower secondary degree without occupational qualification		0.06	0.05	0.02
Lower secondary degree with occupational qualification (ref.)		—	—	—
Upper secondary degree without occupational qualification		–0.08	–0.12	–0.16
Upper secondary degree with occupational qualification		–0.06	–0.07	–0.09
College or university degree		–0.65**	–0.66**	–0.72**
Branch of industry				
Extractive industry			0.49*	0.55*
Transformative industry (ref.)			—	—
Private services			–0.12	–0.11
Social services			0.03	–0.01
Firm size				
Up to 19 employees				–0.14
20–199 employees (ref.)				—
200–1,999 employees				0.13
Over 2,000 employees				0.50**
Events	1,131	1,131	1,131	1,131
Total persons	3,415	3,415	3,415	3,415
Censored persons	2,284	2,284	2,284	2,284
–2*diff (LogL)	2,518.92	2,555.92	2,566.48	2,605.23

Notes: ** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$; + effect significant at $p < 0.10$.
In our models, we also control for the cumulative experience in unemployment, self-employment, marginal and part-time employment. Yet, as we focus on the interpretation of cohort, education, branch of industry and firm size and do not interpret the results of these covariates, we decided to not present the effects in this table. More detailed information are provided by *Rinklake* and *Buchholz* (2011).

Source: Own calculations based on the GSOEP (1984-2007)

Finally, the results in Table 1 again display a significant influence of the employer's characteristics on the timing of the transition to retirement. As other empirical studies have already revealed (*Wübbeke* 1999; *Buchholz* 2008), the option of early retirement is especially used in large firms. It is argued that especially in huge and tayloristically organised firms early retirement is used to realise restructuring and downsizing after the stagnation of the economic miracle in the 1970s. Regarding the branch of industry, we find a significant difference between the transformative sector (that is the classical industrial sector) and the so-called extractive sector which includes agriculture, but especially mining and related industries.

Risks of old age unemployment

In the next step of our empirical analyses, we concentrate on the risks of becoming unemployed after the age of 50 and consequently on the risks of making an indirect transition to retirement. Our descriptive analyses presented in Figure 3 have shown that, as a result of the massive use of the unemployment insurance as a "path to early retirement", there is a significant gap between the timing of the transition to retirement and the timing of the transition out of employment. Therefore, it is important to also analyse the transition to old age unemployment in order to appropriately understand early retirement in Germany. The results of our analyses are presented in Table 2.

Firstly, it has to be noted that the risks of unemployment are especially high at the age of 58 and 59. Before and after this age, the risks of becoming unemployed are much lower. The reason for this systematic age effect is that, for many years, at this age, the German pension system allowed for a financially secure and early withdrawal from the labour market. Thus, the unemployment insurance was used as a welfare state subsystem of the pension system (for more details, see section 2). In the recent past, however, this path to retirement was increasingly penalized.

Yet, in order to answer our research question the results of the cohort comparison are most important. Indeed, our multivariate analyses for old age unemployment display a decreasing significance for younger cohorts. Similar to the results for the transition to retirement, this cohort-specific change remains highly significant even after controlling for education, firm size and branch of industry (models 2, 3 and 4). Yet, compared to the trend reversal of early retirement, the measures to reverse the trend of using unemployment as a path to early retirement apparently were far less successful. In our analyses of the transition to retirement (Table 1), we find significant effects for both the middle *and* the youngest cohort. In our models of old age unemployment, however, the middle cohort 1940-45 does not differ significantly from our oldest birth cohort. We only find a significant effect for the youngest cohort 1946-51 and, compared to the cohort-specific coefficients estimated in our models for retirement (Table 1), the size of this coefficient is far smaller in the models for unemployment. Indeed, additional product-limit estimations show that even in the youngest cohort 1946-51, old-age unemployment is very widespread: 19 percent of this cohort became unemployed before the age of 58 compared to 24 percent in the cohort 1934-39 (*Rinklake/Buchholz* 2011). It thus can be concluded

Tab. 2: Transition to unemployment (logistic regression model)

	1	2	3	4
Constant	–3.51**	–3.39**	–3.22**	–3.08**
Age				
50–57 (ref.)	—	—	—	—
58–59	0.36**	0.39**	0.30**	0.40**
60–61	–0.27	–0.20	–0.20	–0.19
62–63	–0.34	–0.24	–0.21	–0.21
64 plus	–0.82	–0.68	–0.70	–0.70
Population group				
West German (ref.)	—	—	—	—
East German	0.89**	1.01**	1.03**	0.98**
Migration background	0.41**	0.31**	0.21*	0.23*
Sex				
Men (ref.)	—	—	—	—
Women	–0.19*	–0.21*	–0.06	–0.09*
Birth cohorts				
1934–39 (ref.)	—	—	—	—
1940–45	0.01	0.05	0.07	0.07
1946–51	–0.40**	–0.29**	–0.29**	–0.31**
Educational level				
Lower secondary degree without occupational qualification		0.01	–0.02	–0.01
Lower secondary degree with occupational qualification (ref.)		—	—	—
Upper secondary degree without occupational qualification		–0.18	–0.15	–0.12+
Upper secondary degree with occupational qualification		–0.28**	–0.22**	–0.20*
College or university degree		–0.83**	–0.61**	–0.59**
Branch of industry				
Extractive industry			–0.16	–0.16
Transformative industry (ref.)			—	—
Private services			–0.39**	–0.36**
Social services			–0.88**	–0.86**
Firm size				
Up to 19 employees				0.78
20–199 employees (ref.)				—
200–1,999 employees				–0.25*
Over 2,000 employees				–0.32**
Events	670	670	670	670
Total persons	3,108	3,108	3,108	3,108
Censored persons	2,438	2,438	2,438	2,438
–2*diff (LogL)	173.38	228.18	290.27	311.03

Notes: ** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$; + effect significant at $p < 0.10$.
In our models, we also control for the cumulative experience in unemployment, self-employment, marginal and part-time employment. Yet, as we focus on the interpretation of cohort, education, branch of industry and firm size and do not interpret the results of these covariates, we decided not to present the effects in this table. Further details are provided by *Rinklake* and *Buchholz* (2011).

Source: Own calculations based on the GSOEP (1984-2007)

that the significant increase of retirement ages is not necessarily connected to the fact that all older people were also able to maintain longer working lives.

On the basis of the results presented in Table 2, it also becomes evident that the transition to unemployment and, thus, the indirect path to retirement, is much more stratified than the timing of the transition to retirement. This applies to both individuals' characteristics (i.e. educational level) and the characteristics of their employer (i.e. branch of industry or firm size). In contrast to the results for the timing of retirement, education is far more important for the transition to unemployment. It is no longer only the highest qualified (namely individuals with college or university education) who differ from older individuals with lower secondary degree and occupational qualification. For the risks of ending working life in unemployment, we find a significant effect for those with upper secondary degree and occupational qualification (models 2, 3 and 4) and even a slight effect for those with upper secondary degree without occupational qualification (model 4).

Further, with regard to the branch of the industry, we now find a broader variety. The risks of unemployment are especially high for older workers in the transformative and extractive sector.[10] Both industries have faced a high need for economic restructuring and downsizing in Germany since the 1970s, and our results show that employers clearly made use of the unemployment path to retirement to tackle growing economic pressure (*Buchholz* 2008). It is important to highlight these significant branch effects because this clearly shows that the transition to retirement (especially the indirect transition to retirement via unemployment) can obviously not be modelled as a decision solely made by older workers as proposed by the micro-economic pull approach. On the contrary, employers significantly determine the transition to retirement, and this hidden form of employment flexibility was also publicly supported to relieve the regulated German labour market for a long time.

Transition to non-employment

This section investigates the transition to non-employment, which accounts for direct and indirect transitions at the same time (Table 3). As the findings for firm size and branch of industry remain the same as in the models for the transition to retirement, we concentrate on the results for the cohorts and the interaction between the cohort and the educational level.

In our multivariate analyses for the timing of the transition to non-employment, we find a significant cohort-specific change. Compared to the oldest cohort 1934–39, members of the birth cohorts 1940-45 and 1946-51 remain in employment longer and the effects remain significant even after controlling for education, firm size and branch of industry. Yet, compared to the models for the transition to retirement,

[10] These effects remain highly significant even if we control for occupational class in order to account for the fact that the share of manual workers is higher in this sector. Additional analyses, in which the extractive sector was used as the reference category, also revealed significant differences to the public and private service sector.

Tab. 3: Transition to non-employment (logistic regression model)

	1	2	3	4	5
Constant	–3.16**	–3.08**	–3.10**	–3.30**	–3.31**
Age					
50–57 (ref.)	—	—	—	—	—
58–59	0.70**	0.72**	0.72**	0.71**	0.72**
60–61	2.37**	2.41**	2.42**	2.42**	2.43**
62–63	2.13**	2.19**	2.19**	2.20**	2.20**
64 plus	2.92**	3.01**	3.01**	3.03**	3.04**
Population group					
West German (ref.)	—	—	—	—	—
East German	–0.41**	–0.33**	–0.36**	–0.29**	–0.30**
Migration background	–0.21**	–0.29**	–0.29**	–0.28**	–0.27**
Sex					
Men (ref.)	—	—	—	—	—
Women	0.31**	0.31**	0.27**	0.31**	0.31**
Birth cohorts					
1934–39 (ref.)	—	—	—	—	—
1940–45	–0.35**	–0.31**	–0.30**	–0.29**	–0.24*
1946–51	–0.73**	–0.66**	–0.66**	–0.63**	–0.74**
Educational level					
Lower secondary degree without occupational qualification		0.05	0.04	0.01	0.01
Lower secondary degree with occupational qualification (ref.)		—	—	—	—
Upper secondary degree without occupational qualification		–0.06	–0.07	–0.11	–0.18
Upper secondary degree with occupational qualification		–0.11	–0.10	–0.13	–0.11
College or university degree		–0.48**	–0.46**	–0.51**	–0.52*
*Interaction educational level * birth cohort*					
Birth cohort 1940–45					
Lower secondary degree without occupational qualification					–0.22
Upper secondary degree without occupational qualification					–0.06
Upper secondary degree with occupational qualification					–0.03
College or university degree					0.01
Birth cohort 1946–51					
Lower secondary degree without occupational qualification					0.56**
Upper secondary degree without occupational qualification					0.46
Upper secondary degree with occupational qualification					0.02
College or university degree					0.03
Branch of industry					
Extractive industry			0.50**	0.53**	0.54**
Transformative industry (ref.)			—	—	—
Private services			0.02	0.01	0.01
Social services			–0.01	–0.04	–0.04
Firm size					
Up to 19 employees				0.02	0.03
20–199 employees (ref.)				—	—
200–1,999 employees				0.16*	0.16*
Over 2,000 employees				0.48**	0.48**
Events	1,617	1,617	1,617	1,617	1,617
Total persons	3,108	3,108	3,108	3,108	3,108
Censored persons	1,419	1,419	1,419	1,419	1,419
–2*diff (LogL)	2,128.37	2,161.48	2,169.2	2,215.2	2,229.4

Notes: ** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$; + effect significant at $p < 0.10$.
In our models, we also control for the cumulative experience in unemployment, self-employment, marginal and part-time employment. Yet, as we focus on the interpretation of cohort, education, branch of industry and firm size and do not interpret the results of these covariates, we decided not to present the effects in this table. Further details are provided by *Rinklake* and *Buchholz* (2011).

Source: Own calculations based on the GSOEP (1984-2007)

the size of the estimated coefficients is smaller. This again supports the conclusion, which we have already drawn on the basis of our analyses for unemployment, that the delayed transition to retirement in younger cohorts cannot be fully explained by the fact that all older workers of younger cohorts are also able to maintain longer working lives.

Indeed, the interaction effects between cohort and educational level indicate that the prolongation of working life has been selective and came at the price of growing social inequalities among the older workforce. Especially the lowest qualified older workers, that is those with a lower secondary degree without occupational qualification, are not able to meet the new policy expectation to remain in employment longer. In the youngest cohort 1946-51, these low-qualified workers now significantly differ from those with a medium educational level. This was not the case in the two earlier birth cohorts, in which the length of the working life was more or less the same for the majority of the older people (with the exception of the highest qualified who always maintained longer employment careers, see above).

Pension income

In the last step, we now focus on the respondents' pension incomes. Table 4 presents the results of our analyses on the individual level of pension income after the respondents of our original sample claimed pensions for the first time. With these final empirical analyses we are able to evaluate how the income situation of retirees has developed since the mid-1980s and to what extent recent reforms have led to decreasing pension incomes.

At first glance, our results indicate that younger cohorts' financial situation is significantly better. However, it has to be noted that with our data, we are not able to control for the individuals' employment income throughout their entire working life although the individual working income strongly determines the level of pension benefits persons receive after retirement in Germany. However, other authors (e.g. *Mayer/Huinink* 1990) report that employment incomes strongly vary between the cohorts of our study as a consequence of the economic boom Germany experienced in the 1960s and early 1970s and the specific employment opportunities this boom created for the cohorts of our study. *Mayer* and *Huinink* (1990) report that it is especially the middle and the youngest cohort which benefitted from the economic boom. They entered the labour market at the time of these economically favourable conditions and therefore had better chances to achieve higher incomes. In contrast, people born in the 1930s entered the labour market after World War II when the general economic situation was less favourable. As a consequence, they started their career at a lower income level, and this had a long-term effect on their *entire* employment career (*Mayer/Huinink* 1990). Hence, the fact that the individual working incomes in our empirical study have increased for the younger cohorts, directly affects their level of pensions we observe in our analyses presented in Table 4. The absolute pension incomes of the retirees of our younger cohorts are higher compared to those born in the 1930s. Indeed, when we include an individual's last labour

Tab. 4: Absolute pension income (linear regression model)

	1	2	3	4
Constant	7.42**	6.93**	7.64**	7.29**
Age				
50–57 (ref.)	–	–	–	–
58–59	1.98*	1.07	1.67+	1.86*
60–61	1.28+	0.01	1.40*	1.55*
62–63	3.69**	2.03**	3.25**	3.39**
64 plus	4.25**	2.44**	3.47**	3.67**
Population group				
West German (ref.)	–	–	–	–
East German	–2.77**	–1.42*	–3.90**	–3.79**
Migration background	–2.54**	–2.22**	–1.45*	–1.47*
Sex				
Men (ref.)	–	–	–	–
Women	–5.01**	–4.03**	–4.41**	–4.48**
Birth cohorts				
1934–39 (ref.)	–	–	–	–
1940–45	1.35*	0.34	0.90+	1.08+
1946–51	2.95**	1.14	2.57**	3.34**
Last working income		0.01**		
Educational level				
Lower secondary degree without occupational qualification			–1.07+	–1.09+
Lower secondary degree with occupational qualification (ref.)			–	–
Upper secondary degree without occupational qualification			–0.30	–0.14
Upper secondary degree with occupational qualification			1.30+	1.41*
College or university degree			7.05**	7.03**
Late career characteristics				
Employed at the age of 50	1.95*	–0.08	0.97	1.05
Unemployment path to retirement	–1.22+	–0.77	–0.69	0.39
*Retirement path * Birth cohort*				
Unemployment path to retirement * Cohort 1940–45				–1.26
Unemployment path to retirement * Cohort 1946–51				–6.65**
Adjusted R-square	0.14	0.28	0.20	0.21
Number of cases	1,206	1,206	1,206	1,206

Notes: ** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$; + effect significant at $p < 0.10$.
Public, occupational and private pensions are included; the pension income is adjusted for inflation.
Branch of industry and firm size did not have any effect on the level of pension income and their inclusion did not improve our estimations. This is not surprising, because public pensions are still the main income source of retirees in Germany. Due to their lack of significance, the effects of firm size and branch of industry are not presented in Table 4.
Source: *Rinklake* and *Buchholz* (2011: 69-70); own calculations based on the GSOEP (1984-2007)

market income as a proxy measure for the different individual working incomes of our cohorts (model 2), the cohorts no longer differ significantly from each other.

Yet, the most important question for the purpose of this article is whether those who (have to) use the path to early retirement via unemployment receive lower pensions than those who do not (have to) use it. Indeed, in model 1 we find a significant

effect indicating that those individuals who have been unemployed receive lower pensions. However, this effect is significant only on a low level in our general model. Indeed, the introduction of interaction terms for the path to retirement and cohort into our model (see model 4) reveals that retiring via unemployment has become significantly unfavourable for younger cohorts. In contrast to our two older birth cohorts, the unemployment path to retirement is connected with significant pension losses in our youngest cohort 1946-51. This was not the case in previously born cohorts (model 4) for whom the German pension system still offered strong incentives to make use of this scheme. The profound recent pension reforms, however, put an end to this generous policy. Today, older people are expected to either prolong their working lives or accept higher penalties for early retirement. Hence, our empirical results clearly indicate that recent pension reforms in Germany which aim at reducing early retirement led to growing social inequalities in old age. This is due to specific parts of the older workforce, namely the low-qualified (see Table 3), are not able to meet the new expectation to remain employed longer. Yet, in contrast to the past, these workers have to pay the price for their "failure" in the form of significant pension losses (see Table 4).

5 Conclusion and Outlook

The aim of this contribution is to investigate the effects and risks of recent pension reforms in Germany. For many years, German pension policy systematically supported early retirement in order to relieve the regulated labour market in times of economic stagnation and growing rates of unemployment. For this purpose, various generous early retirement programmes have been introduced in the 1970s, 1980s and early-1990s. These programmes were systematically used by firms and the government to reduce the workforce in a "socially peaceful" manner. Not surprisingly, the employment rates in pre-retirement age have been very low in Germany for many years. However, in the last ten to fifteen years, we can observe a clear change in the German pension policy paradigm. Latest pension reforms increasingly expect workers to delay the transition to retirement and, in case they fail to maintain longer working lives, individuals have to accept a significant pension reduction.

Cross-sectional figures indeed indicate that employment rates in the pre-retirement age have substantially risen since 2000. However, as we argue, it is very risky to estimate the success of recent pension reforms on the basis of such broad cross-sectional figures for a variety of reasons: First, these cross-sectional estimates do not account for the fact that the increasing old age employment rates might also be caused by the changing composition of today's cohorts of older workers (especially with regard to the educational level). Second, based on such cross-sectional data, it is impossible to understand whether the whole strata of the older workforce benefitted from increasing employment rates in later life or if only specific parts of the older workforce are able to maintain longer working lives while already disadvantaged and low-qualified older persons still have to retire early – yet, compared to the 1970s, 1980s and 1990s at the price of significant pension reductions. And

finally, a simple cross-sectional approach does not allow to causally model the consequences of the timing of the transition to retirement on individuals' pension incomes. However, such a causal modelling would be necessary in order to estimate if recent reforms have been really successful or instead rather tend to be a hidden pension reduction.

To appropriately address these issues, a micro-level longitudinal research approach, as applied in our empirical study, is necessary. This allows us to statistically investigate (1) if there remains a significant effect for the reversal of retirement if it is controlled for potential changes in the composition of the older workforce across cohorts, (2) if all parts of the older workforce benefitted from the recent increase of old age employment rates, and (3) if the latest pension reforms aiming at delaying the transition to retirement have been a "hidden" pension reduction for some parts of the older population.

Regarding these matters, the central findings of our longitudinal micro-level study are as follows:

(1) There is a significant delay of the transition to retirement and out of employment across cohorts even if we control for the potentially changing composition of the older workforce. Thus, our longitudinal results indicate that there has been a significant postponement of the transition out of employment and into retirement across cohorts which is independent of the higher level of education in recent cohorts, for example. However, our results also show that the delayed transition to retirement in younger cohorts is not necessarily connected to the fact that all older people also succeed in maintaining longer employment lives. Especially, the trend reversal of old age unemployment was far less successful than the trend reversal of early retirement.

(2) Our empirical analyses have shown that the changing pension policy paradigm in Germany led to growing social inequalities in old age because the prolongation of working life has been socially selective. Especially the lowest qualified older workers are not able to meet the new policy expectation to remain in employment longer. In the youngest cohort 1946-51, there is a significant gap between lowly qualified workers and those with medium educational levels for the timing of the employment exit. This is not the case in the two earlier birth cohorts in which the length of working life was more or less the same for the majority of the older people.

(3) Finally, our results show that the new pension policy paradigm has been a pension reduction for some parts of the older population because they are not able to maintain longer working lives. While early retirement regulations have been financially very generous throughout the 1970s, 1980s and 1990s, latest pension reforms in Germany aim at punishing early retirement with significant financial cutbacks. Indeed, our empirical analyses indicate that it is especially those who still have to use the unemployment path to retirement, which are mostly the low-qualified workers, who are nowadays confronted with significant pension losses while this was not the case for the two older birth cohorts of our study.

What do these results tell us with regard to our key research interest of evaluating the effects of the changing pension policy paradigm in Germany? Obviously, the systematic expansion and the massive use of early retirement have come to a halt since 2000. Both cross-sectional data as well as our multivariate longitudinal results display a significant prolongation of working life and a substantial postponement of the transition to retirement. However, it is evident that, despite this recent trend reversal, early retirement is still predominant in Germany. Many older people experience the transition to retirement before both, flexible and legal retirement age. It also has to be noted that a substantial number of older people still exit from employment early due to the indirect paths to retirement. Especially the unemployment path to retirement still play an important role. This clearly suggests that attempts to reverse early retirement should not only concentrate on changing pension regulations but should also address the employability of older workers. Additionally, our longitudinal results show that the recent reforms have not been able to target the entire older workforce. To the contrary, especially the already disadvantaged parts of the older workforce, that is the low-qualified individuals of the latest cohort, have not been reached by the latest pension reforms and still (have to) exit employment very early. However, these workers now have to pay the price for their "failure" to meet the new policy expectation to prolong working life by accepting significant pension losses. In the past, on the other hand, their market "failure" was cushioned by more generous early pension regulations. Thus, recent pension reforms have caused growing inequalities among the older population.

What is the reason for this limited success of Germany's latest (and still ongoing) pension reforms? As we have outlined at the beginning of our contribution, these reforms are based on the assumption that early retirement can be explained by micro-economic theory. This approach suggests that early retirement is the (sole) result of rational acting and maximizing individuals who opt for an early labour market exit as long as pension systems offer incentives for early retirement (so-called pull factors). However, it has been critically stated, that the micro-economic approach fails to model the complexity of early retirement in Western societies (see, for example, *Kohli* 1991; *Wübbeke* 1999; *Arnds/Bonin* 2002; *Blossfeld et al.* 2006; *Buchholz* 2008; *Ebbinghaus* 2008). According to these authors, it is important to also take "push factors" into account to explain early retirement. These factors contribute to pushing older workers out of the labour market, for example, due to the employers' interests to carry out rationalisation and restructuring (*Wübbeke* 1999; *Arnds/Bonin* 2002; *Buchholz* 2008), due to the governments' interests to unburden the labour market (*Kohli* 1991; *Blossfeld et al.* 2006; *Ebbinghaus* 2008; *Blossfeld et al.* 2011) or due to the countries' institutional characteristics, which hinder the employability of older workers (e.g. a lacking infrastructure for lifelong learning and low support of active labour market policies) (*Blossfeld et al.* 2006; *Ebbinghaus* 2008; *Blossfeld et al.* 2011). Further, our results clearly show that early retirement is not only caused by "pull factors" but also by "push factors" as we find strong empirical evidence that early retirement takes place especially in firms, sectors and jobs, which have been confronted with the high pressure of rationalisation and restructuring. This means that, as long as Germany exclusively relies on weakening the "pull factors" of early

retirement without aiming at minimizing the "push factors" at the same time, the reforms remain unlikely to successfully enable the prolongation of the working life of *all* older people. These one-sided reforms merely targeting the pull factors may be useful to lower the financial burdening of the public pension insurance. However, as our longitudinal results clearly demonstrate, this policy leads to growing social inequalities in old age. Thus, for the weaker parts of the older workforce, these reforms are actually hidden pension reductions. For inducing a more successful trend reversal of early retirement, the social-democratic welfare states of Scandinavia can serve as role models. These countries prove the importance and the success of an integrated institutional framework that does not only *expect* people to work longer but also *allows* them to remain employed – namely, by offering a well-established infrastructure for lifelong learning and by putting more efforts into active labour market policies (*Ebbinghaus* 2005; *Blossfeld et al.* 2006; *Blossfeld et al.* 2011).

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