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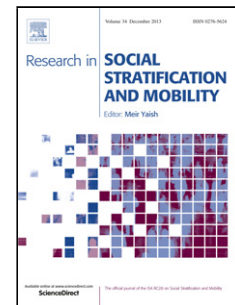
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Highlights:

- About every third retiree in Europe is prematurely pushed out of work
- Objectively forced exits and perceived involuntariness often do not coincide
- Self-assessments more elusive, less socially stratified than objective constraints
- Raised pension ages may lead to more constrained retirement transitions
- Stricter labor market regulation is associated with higher incidence of forced exits

Pushed out prematurely? Comparing objectively forced exits and subjective assessments of involuntary retirement across Europe

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Abstract

Given the efforts in raising the statutory pension age in an aging Europe, this cross-national analysis investigates constrained retirement from a comparative perspective. Based on a conceptualization of retirement transitions as a multi-faceted phenomenon, the study distinguishes objective (external) constraints and the subjective self-assessment of involuntary retirement. Exploiting two survey items from the fifth round of the European Social Survey (ESS Round 5, 2010/11), we examine which workers were objectively forced to retire due to economic or health reasons as well as which workers subjectively evaluate their retirement as involuntary as they would have wished to work longer. Using multilevel modeling, the study investigates the impact of national context conditions on both the individual risk to be objectively forced to terminate work and the subjective perception of retirement as occurring too early. We analyze institutional factors such as statutory pension ages and pension generosity, but also explore the role of structural factors such as unemployment and health. At the individual level, the empirical analysis reveals that objectively forced exits and subjective involuntariness do not always overlap. Objectively forced exits are more readily explained by socio-economic characteristics like social class and unemployment experience. At the macro level, there are considerable cross-national variations that cannot be explained by compositional factors only. Relevant predictors of international differences in constrained retirement include early retirement options, statutory pension conditions, unemployment rates, labor market regulation and life expectancy.

Key words: Europe; international comparison; multi-level analysis; active aging; involuntary retirement; early exit from work.

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Abstract

Given the efforts in raising the statutory pension age in an aging Europe, this cross-national analysis investigates constrained retirement from a comparative perspective. Based on a conceptualization of retirement transitions as a multi-faceted phenomenon, the study distinguishes objective (external) constraints and the subjective self-assessment of involuntary retirement. Exploiting two survey items from the fifth round of the European Social Survey (ESS Round 5, 2010/11), we examine which workers were objectively forced to retire due to economic or health reasons as well as which workers subjectively evaluate their retirement as involuntary as they would have wished to work longer. Using multilevel modeling, the study investigates the impact of national context conditions on both the individual risk to be objectively forced to terminate work and the subjective perception of retirement as occurring too early. We analyze institutional factors such as statutory pension ages and pension generosity, but also explore the role of structural factors such as unemployment and health. At the individual level, the empirical analysis reveals that objectively forced exits and subjective involuntariness do not always overlap. Objectively forced exits are more readily explained by socio-economic characteristics like social class and unemployment experience. At the macro level, there are considerable cross-national variations that cannot be explained by compositional factors only. Relevant predictors of international differences in constrained retirement include early retirement options, statutory pension conditions, unemployment rates, labor market regulation and life expectancy.

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1. Introduction

Across Europe retirement has been institutionalized as a major transition ending an individual's working life. Many experts thus see the decision to retire as a free choice of leisure over work, largely induced by generous pension benefits that "pull" people out of work by providing sufficient income in old age. The retirement decision, however, is not always without constraints: some older workers are pushed out of work through mandatory retirement rules; others are forced to retire because of economic problems of their firm or personal health reasons. The individual retirement decision is thus dependent on the opportunities provided by national social policy arrangements but it may also be due to socio-economic conditions at the time of exit from work. Cross-national variations in the causes and timing of retirement have therefore been attributed to a combination of both pull and push factors varying across Europe. However, whether retired people perceive such constrained retirement as "involuntary" remains an empirical question. In some cases, retirees would have liked to work longer, while others preferred leisure over continued work. In order to disentangle external constraints and personal motivation, we analyze the cross-national and individual predictors of the incidence of forced exits due to economic or health-related reasons as well as the individual self-assessment of involuntary retirement indicated by the wish to have worked longer.

By conceptualizing constrained retirement in both its objective and subjective dimensions and by analyzing it from the pull and push perspectives, this study can contribute to a better understanding of involuntary retirement as a multifaceted phenomenon. This topic is of policy relevance given recent reforms to postpone retirement driven by concerns about financial sustainability in ageing societies. Many European welfare states have experienced a trend toward early retirement since the onset of mass unemployment in the 1970s, leading to expectations about ever earlier retirement. Yet, more recently a paradigm shift has led to reform efforts to reverse early exit from work by raising statutory pension ages and reprimand early exit through benefit deductions. It remains an open question whether retirement will become less voluntary as people are forced to work longer or get less favorable conditions when retiring prematurely. Moreover, as long as older workers are being made redundant before statutory pension age or have to quit work for health reasons, retirement may not be voluntary but forced upon them. Such forced exits have negative consequences for individual workers' well-being: leading to lower old-age income (Heisig, 2015), worse self-rated health and poorer life satisfaction (Shultz, Morton, & Weckerle, 1998) as well as higher risk of depression and antidepressant prescriptions (Hyde, Hanson, Chungkham, Leineweber, & Westerlund, 2015). Given these severe implications, it is important to understand the conditions under which forced exits and involuntary retirements occur.

To our knowledge, this study is the first to examine constrained retirement in respect to the objective (external) forces as well as subjective self-assessment of (premature) retirement from a comparative perspective, combining macro-social context indicators and individual level survey data. We are interested in studying to what degree premature exit from work is forced for economic or health-related causes that are beyond an individual's own choice. We analyse individual and contextual factors that shape these risky life events. In addition, we are investigating whether retirees (retrospectively) evaluate their retirement decision as "involuntary", measured by the wish to have worked longer. Again we study whether these constrained retirements depend on individual factors such as gender and other socio-demographic factors or are shaped by the context. Our analysis explores the role of social stratification, in particular social class, labor market experience and sectoral employment, for the individual exposure to forced exit and involuntary retirement. At the macro-level, our multilevel analysis tests whether certain institutional and structural contexts mitigate or exacerbate employment constraints, thus explaining cross-national variations in constrained retirement across Europe. Specifically, we examine the potential influence of welfare-state arrangements – such as

statutory pension ages, early pension opportunities, pension generosity, and employment protection – as well as structural conditions in the form of unemployment rates and life expectancy.

In a first step, we discuss different conceptualizations of constrained retirement transitions and review the available evidence on the prevalence of involuntary retirement across Europe. Even when adopting a subjective perspective, our analytical focus in this sociological study lies on the objective factors that potentially affect the individual self-assessment of involuntary retirement, we abstain from explaining motivations with other subjective factors. Our analysis is based on the fifth round of the European Social Survey (ESS) from the years 2010/11, featuring a special module on “Work, Family, and Well-Being”, which included specific questions on the timing and voluntariness of work-exit transitions. In terms of methodology, the comparative study applies a hierarchical (multilevel) design to examine the macro-social context factors contributing to forced exits and involuntary retirements for 24 European countries. Although the survey is cross-sectional, we use birth cohorts and the self-reported timing of work exits or retirement transitions to test time-variant macro-context covariates within a cross-classified model. Our multilevel analysis thus not only exploits cross-national variations in context but also their changes over time to gain additional analytical leverage.

2. Constrained retirement transitions: previous research and conceptualizations

Since early retirement became a widespread phenomenon across Europe, several comparative studies on retirement patterns have established solid knowledge on the institutional and structural variations between early-exit and late-exit countries (e.g. Blossfeld, Buchholz, & Hofäcker, 2006; Ebbinghaus 2006; Ebbinghaus & Hofäcker, 2013;). We thus expect context factors to matter in explaining cross-national variations in the occurrence of constrained retirement, even after controlling for individual characteristics. These national institutional and structural contexts shape the opportunity and incentive structure for individuals exiting from work as well as choosing to retire at a particular age.

Comparative research on early retirement has taken two explanatory approaches (Ebbinghaus, 2006; Hofäcker, 2010; Radl, 2013b): the *pull* perspective focuses on institutionalized pathways towards retirement (Kohli, Rein, Guillemard, & van Gunsteren, 1991) and the incentive effect to retire early as an implicit tax on continued work (Blöndal & Scarpetta, 1998; Gruber & Wise, 1999), whereas the *push* perspective investigates the impact of economic and other external pressures that compel older workers to early exit from work (Lazear, 1986), or public benefits that are used to subsidize labor shedding (Hutchens, 1999; Naschold, de Vroom, & Casey, 1994). The pull perspective has thus often been used to explain voluntary retirement, while the push perspective is often applied to account for forced early exits from work.

In addition, other research analyzed the transition from work to retirement at an individual level (e.g. Blossfeld, Buchholz, & Kurz, 2011; Radl, 2013b), accumulating evidence about socio-economic differences according to gender, social class, education, working conditions, and sectors. However, studies on the particular question of constrained or involuntary retirement have been much rarer, and we find rather different conceptualizations and empirical operationalizations of constrained or “involuntary” retirement.¹ Some studies apply a rather *objective* classification based on the external constraints for exit from work, while other experts mostly draw on people’s *subjective* motivation (or preferences) in respect to unwanted retirement transition. Our analysis contributes by distinguishing

¹ In their study, Dorn and Sousa-Poza (2010) define voluntary retirement as a „relative preference for leisure versus the feasible alternative of continuing work“, but they shift concepts when defining involuntary early retirement as resulting „from a situation with (often unexpected) employment constraints“. While the former (preferences) seems to refer to an individual’s decision (i.e. subjectively voluntary retirement in our usage), the latter defines „involuntary“ as externally imposed by employment circumstances (i.e. objectively forced exits in our conceptualization).

these two aspects of constrained retirement, and by empirically analyzing their similarities and differences. We therefore separate objective constraints, what we call the incidence of “forced” exits, from subjective preferences, what we label as “involuntary” retirement. In some cases, retirement may have been forced by economic push or health-related conditions, but not every retiree will necessarily perceive this as involuntary. From the subjective perspective, a person may choose freely to retire, while others under the same circumstances would have preferred to work longer.

<Table 1>

Conceptual and measurement differences between existing studies have led to dissimilar empirical results regarding constrained retirement. Studies using an objective measure capturing the external circumstances report a frequency of about one third of forced exits for countries as diverse as Germany, Spain, and the United States (Heisig, 2015; Radl & Himmelreicher, 2014). Using a subjective measure based on people’s motivations, Szinovacz and Davey (2005) also arrive at about one third of involuntary retirements for the United States, but other studies on self-assessed involuntariness report much more diverse incidence rates, varying between 9 percent in Denmark and 62 percent in Hungary (Dorn & Sousa-Poza, 2010). In a Dutch study using a subjective conceptualization, van Solinge and Henkens (2007) construct a multidimensional index (based on Likert scales): retirement was experienced as entirely voluntary by two thirds of respondents and as entirely involuntary by 12 percent, while the remaining 23 percent occupied positions in between. While most previous research were single-country studies, there are very few comparative analyses investigating the macro-contexts affecting constrained retirement. An exception is the analysis by Dorn and Sousa-Poza (2010), which uses 1997 ISSP data covering 19 countries, applying a micro-economic individual and firm-related explanatory model (Hutchens, 1999). Analyzing only workers on early retirement aged 45-65, their findings suggest that self-assessed “involuntary” retirement is more prevalent in countries with low levels of economic growth (GDP) and high levels of unemployment. They also report a weakly significant positive effect of employment protection legislation on the incidence of involuntary retirement, but their analyses fail to show an association with life expectancy. According to their reported estimates, there is no significant effect of pension replacement rates or early retirement incentives of public pensions.

A comparative sociological analysis (Radl, 2013a) studies the timing of in/voluntary retirement across 11 Western European countries, using the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE) from 2004/05. Considering retirees aged 50 and older who were previously employed, this event history analysis examines the age of leaving the last job, investigating the heterogeneity in terms of social class, family situation, and gender differences. By distinguishing involuntary early retirees as those who were “made redundant” or left due to “own ill health”, the survival curves show considerable differences in the process of early retirement: such constrained retirement occurred up to 3 to 4 years earlier for the median retirees at age 56 for women and 57 for men compared with voluntarily retired people at age 60 (see Radl, 2013a, Fig 2, p. 661). Note that this study measured constrained early retirement similarly to our concept of objectively forced exits, though it operationalized varying degrees of involuntariness. Due to the low number of countries, however, the study abstained from analyzing the influence of macro-level factors. Given the contradicting conceptualization and lack of comparative studies, our present study seeks to fill a gap in research by comparing constrained retirement across European societies, differentiating between objective external forced exits and subjectively self-assessed involuntary retirement.

3. Individual and context level hypotheses

3.1 Individual level hypotheses

Our first hypothesis addresses the basic relationship between timing and involuntariness of retirement at the individual level. Voluntary retirement should tend to take place later than involuntary retirement because the benefits tend to be higher with age or contribution years. Since old-age pensions become increasingly available as workers approach the statutory age limit, there should be a negative relationship between the individual age at exit from work or retirement and the risk of forced exit. Similarly, the retrospective self-assessment of involuntary retirement should decrease with a later age of withdrawal because individuals are less willing to work longer the later they retire. Retiring at the statutory age is often considered to be voluntary because it is a social norm, that is, the conditions are considered to reflect the society's commonly accepted "deal". Nevertheless, it could be that individuals would prefer to work longer, but that formal rules or informal norms exclude the possibility of continuing working beyond the statutory pension age. In fact, a majority of Europeans believes that people above age 65 are "too old to work" (Radl 2012) and mandatory retirement at a particular age is still a reality in many European countries.

Hi (retirement age): A later retirement is associated with (a) a lower risk of forced exit and (b) lower self-assessment of the wish to have worked longer.

Drawing on Neo-Weberian class theory, Radl (2013a) has argued that late-career employment constraints are unequally distributed because social classes differ with respect to both health and employability. While the general risk of job loss is known to vary by class (Layte, Levin, Hendrickx, & Bison, 2000), health and mortality are socially stratified too (McFadden, Luben, Wareham, Bingham, & Khaw, 2008). Hazardous working conditions and work strain are concentrated in some manual occupations and unhealthy lifestyles (e.g. smoking, diet quality, and alcohol consumption) are more prevalent in less educated and lower social strata, probably further contributing to bad health conditions among the working classes (Barbeau, Krieger, & Soobader, 2004; Darmon & Drewnowski, 2008). More specifically, employment constraints should be minimal for the (upper and lower) salariat as well as the petite bourgeoisie, at medium levels for intermediate occupations as well as lower sales and service workers, and reach maximum levels for manual supervisors, skilled manual workers as well as routine occupations (Radl 2013a: 657). As for the subjective evaluation of involuntary retirement, it has also been shown that the working class regards a lower retirement age as "just", hence more frequently embracing an "early exit culture" (Radl 2012). Thus it can be expected that workers in lower occupations perceive their retirement as less involuntary once we take the timing and circumstances of their exits into account.

Hii (social class): (a) The working class is more likely to be pushed out of work early for economic or health-related reasons, but (b) the working class will be less willing to work longer at a given age, i.e. less likely to evaluate retirement as involuntary, due to a strong early exit culture.

Finally, we assume that involuntary retirement will be more frequent in the case of externally forced exits be it for economic or health reasons. In other words, we would expect the subjective involuntariness to depend on the objective constraints that the individual experiences.

Hiii (forced exits): Retirees who have been forced out of work due to economic or health reasons will be more likely to have preferred working longer than others without such external constraints.

3.2 Context-level pull hypotheses

Many continental European countries offer opportunities for early pension drawing, often with favorable rules for workers with long work histories, long contributions or lower eligibility ages for women. However, following pension reforms since the 1990s, the statutory pension age has been

gradually increased across many European countries and early exit options were phased out (Ebbinghaus, 2006; Ebbinghaus & Hofäcker, 2013). These cross-national variations and changes over time in statutory pension age and early exit options need to be taken into account when considering objectively forced exits from work and involuntary retirements. Since institutional and structural conditions vary between men and women, the contextual determinants of involuntariness may be gender-specific. In general, we would expect that early exit from work is more driven by economic push factors and special early exit opportunities for men than for women, while special retirement rules should matter more for women. Therefore, we will carry out the macro-level analysis separately for men and women.

Although the effect would be indirect, an earlier statutory pension age should lower the risk to be (objectively) forced out earlier than desired. In countries with lower statutory pension age, older workers are more likely to immediately draw on old age pensions upon employment exit instead of using sequential pathways via unemployment or disability benefits. This would lead to lower rates of forced exit because even if people cannot continue in a given job or have health problems, they would prefer to immediately use the old-age pension pathway instead of first claiming unemployment or disability benefits. Unlike old-age pensions which are perceived as an earned right, unemployment and disability benefits are based on deservingness criteria, often with means-tests and potential stigma. Given a certain demand for labor, higher pensionable ages thus increase the odds of being pushed out of work at a given age. In addition, a low statutory pension age might have a normative effect on subjectively involuntary retirement by altering preferences. As the age boundaries implicit in public policies serve as blueprint for the “normal” life course (Kohli, 2007), people living in a country with late statutory pension age would be more likely to perceive an early exit as involuntary because of the larger gap from the social norm. We would thus expect a positive effect of statutory pension age on forced exits and involuntary retirement across Europe.

H1 (statutory pension age): The higher the statutory pension age in a country (a) the more likely that older workers are forced out of the labor market; and (b) the more likely that they perceive their retirement as premature.

Additionally we need to consider the availability of pre-retirement options; in particular, the age by which early retirement is possible according to pension legislation. In countries with low early retirement age, older workers are more likely to use such pension pathways instead of unemployment bridges or disability pensions, whereas the reverse is the case when early retirement options are absent. We would thus expect that the earlier pre-retirement is possible, the less likely it is objectively forced.

H2 (early pension age): In pension systems offering limited options for early retirement (i.e. higher early pension age), (a) older workers are more likely to be forced out of work early, and (b) retirees that retire early are more likely to prefer working longer.

Not only the timing but also the generosity of pension benefits matters. For an individual's subjective evaluation, it is one thing to retire earlier than expected with a generous arrangement, and it is quite another when early exit implies substantial benefit reductions. The higher the generosity of benefits (pension replacement rate) in a country, the more likely an early exit is considered to be voluntary. When pension benefits are more generous then it is more likely that people choose early over later exit. We thus expect a negative relationship between generosity and our two dependent variables.

H3 (pension generosity): In countries with more generous pensions (higher replacement rate), (a) older workers are less forced to exit work; (b) and workers are less likely to prefer working longer.

3.3 Context-level push hypotheses

The rise of mass unemployment since the 1970s has been seen as a major factor in the expansion of early retirement practices in many European countries. High unemployment might thus indicate a rather difficult economic situation, mass dismissal and lacking job opportunities for older workers seeking reemployment. Seen from the push perspective, we consider the national unemployment rate at the time of exit from work as an important contextual factor. We would expect that forced exits from work for economic reasons would be higher in times of high unemployment; while retirees would then be more inclined to have worked longer than they actually did.

H4 (unemployment rate): The higher the national unemployment rate at the time of exit, (a) the higher the rate of forced exits from work, and (b) the more retirees perceive their retirement as involuntary.

The effect of labor market regulation on involuntary retirement is theoretically under-defined since competing claims can be found (Naschold et al., 1994; Lazear, 1986). Employment protection should prevent job losses for workers with long tenure since employers would face higher costs of firing, this should then lead to fewer redundancies among older workers. However, it has also been argued that in coordinated market economies with high employment regulation and seniority wages, employers are seeking to shed older workers through public early exit options and their own “golden “handshakes” (Ebbinghaus, 2006). Moreover, it is also often argued that employment regulation diminishes labor demand because it is more costly to release workers again. In labor markets with high employment protection, employers should thus be disproportionally hesitant to employ older workers seeking a new job, which in turn limits chances for re-employment, leading to long-term unemployment or exit from labour market via preretirement pathways. The findings of Dorn and Sousa-Poza (2010) support the latter hypothesis over the former. The same effect (combined with favorable early retirement incentives) would also derive from the firm’s labor shedding strategy in highly regulated labor markets. Hence, we formulate two pairs of competing hypotheses:

H5 (employment regulation prevents labor shedding): The more restrictions on hiring and firing exist, (a) the less likely it is that firms use labor shedding strategies to induce older workers to retire, and (b) the less older workers will be prone to perceive retirement as involuntary.

Alternatively, H6 (regulation leads to labor shedding): The more restrictions on hiring and firing exist, (a) the more likely it is that firms use labor shedding strategies to induce older workers to retire, and (b) the more older workers will be prone to perceive retirement as involuntary.

Among the non-economic push factors, we use life expectancy at age 60 as a gender-specific indicator for a society’s health situation and the expected length of retirement. Disability is a major reason for forced exits, and thus could be considered involuntary as retirees might have liked working longer if their health permitted or working conditions were adapted. We would thus expect that low life expectancy would be associated with the risk of forced early exit due to disability. At the same time, life expectancy in old age will determine the expected duration of retirement. In fact, there is cross-national variation in retirement duration leading not only to personal but also important financial implications (Solinge & Henkens, 2010). Those retirees who rely on defined contribution pensions would have to buy a life annuity based on life expectancy or run the risks to outlive their savings. In contrast, the shorter the remaining life expectancy, the less people will be willing to work longer. In terms of potential retirement duration, we would thus expect a low life expectancy to be associated with a lower incidence of involuntary retirement.

H7 (life expectancy): The higher the life expectancy (at age 60) in a country, (a) the less likely it is that older workers are forced to retire due to health reasons, but (b) the more prone they are under given circumstances to have preferred working longer than they did.

4. Data and methods

4.1 Data and analytical strategy

We draw on data from the fifth round of the European Social Survey (ESS), conducted in the years 2010 and 2011, which included a special module on “Work, Family, and Well-being” featuring questions on the transition to retirement.² For data availability reasons, we restrict our analysis to 24 European countries (excluding Israel, Russia, and Ukraine). We carry out hierarchical estimations using a random-constant multi-level model with countries as macro-level units. Our analytic sample consists of individuals born between 1940 and 1961 who retired between 1990 and 2011. Because the institutional and structural framework for retirement transitions has changed significantly across these two decades (Ebbinghaus & Hofäcker 2013), a special feature of our analysis is that we not only use cross-sectional measures of national context but also time-series data. We implement some country indicators as time-variant covariates to account for changes over time, using the self-reported exit age or retirement age of the respondent as reference year to match individuals to context conditions. For instance, rather than using the current pension age (or of an arbitrary reference year) we use the statutory pension age that was in force when a respondent started retirement. Moreover, some context variables, such as the pension replacement rates, are gender-specific to account for different conditions faced by men and women.

To be able to exploit this additional variation, we use a three-level cross-classified model with individuals nested in country/gender/retirement-cohort-clusters, which in turn are nested in countries.³ Between the macro level (countries) and the micro level (individuals) we analyse at the meso level thus the clusters of people of a given sex in a given country, who retired in the same year. In this way, we are better able to match individuals to the relevant context conditions. This strategy is appropriate given the inclusion of gender-specific and time-varying covariates in a hierarchical model. Given that current retirees have exited from work and began retirement at different points in time, we use cohort-specific measures to better capture the actual conditions a respondent experienced at the time. These time-varying country-indicators provide a more accurate test of the relevant contextual effects than time-invariant, cross-sectional macro-indicators often used in comparative research. Analogously, the use of gender-sensitive measures takes relevant differences between men and women into consideration. Time-variant and/or gender-specific variables are measured at the intermediate level 2 (pertaining to country/retirement-cohort/gender-clusters) in the multi-level model. In the analysis of forced exits, time-variant variables refer to the year the last job ended, and in the analysis of voluntary retirements to the retirement year as reported by the respondent (see section 4.3 for further details).

Following research conventions, we consider retirement transitions from age 50 onwards for all persons who reported participation in the labor market and are retired at the time of interview. While our estimates of the Kaplan-Meier survival curves (Figure 1) are based on all subjects who worked beyond age 50, our multivariate analysis excludes older people not yet retired by the time of the interview (right-censoring) since we have no information whether their future retirement will be voluntary or not. For purposes of sample restriction (and the identification of the meso-level clusters), the transition year in the objective dimension refers to the year retirees left their last paid job (before

² European Social Survey (<http://www.europeansocialsurvey.org/>), Round 5, 2010-11.

³ Cross-classified models have been used for example in the immigration literature to tap into “community effects” pertaining to specific combinations of origins and destinations (Van Tubergen, Maas, & Flap 2004).

retirement, unemployment or inactivity); in the subjective dimension, our operationalization is based on the respondent's self-reported age when he or she "retired". Our calculation of the average age are congruent with the respective definitions of constrained retirement: the year when (non-)forced exits from work and the year when (in)voluntary retirement occurred. This also implies slightly different samples for the two dependent variables ($N=4,859$ and $4,758$ respectively), particularly due to diverging exit and retirement ages that result from a varying share of people reporting "retirement" ages below age 50 as well as other diverging metrics, e.g. due to bridging periods of unemployment or other forms of non-employment (for instance, unpaid care giving) before old age pensions are drawn. For technical convenience we report the results from a linear probability model, but we also carried out the same estimations using a logit link function as a robustness check, which did not produce substantially different results.

4.2 The two dependent variables

Overcoming the ambiguity of past research, our analysis conceptually and empirically separates the *objective* causes for exit from work from the *subjective* self-assessed involuntariness to retire (factually, the expressed wish to have worked longer). Although we build on earlier contributions looking at the influence of restrictive circumstances on perceptions of involuntary retirement (Solinge & Henkens, 2007; Szinovacz & Davey, 2005), we believe this is the first comparative study that analyzes both outcomes systematically in parallel and is able to reveal similarities and inconsistencies between both phenomena. Objective causes refer to external constraints beyond the reach of an individual, including dismissal by an employer and health-related reasons that force workers to retire. Subjective involuntariness is based on the explicit individual preference in favor of having worked longer than was actually the case, i.e. a retrospective evaluation. We thus conceptualize "involuntary" retirement as the subjective self-assessment by retirees that their retirement timing was not a personal choice but to a considerable degree imposed by circumstances beyond their control.

Following our conceptual distinction (see Table 1), we use two items from the ESS to measure our two dependent variables. The *objective* measure of "forced" exits from work thus captures external "push" factors that compel individuals to leave their job permanently.⁴ In this regard, we will consider here economic push (dismissal, plant closure, and inability to find another job after a contract ended) or health-related pressures (disability, mental illness, etc.) for respondents to leave their last paid job. Notably, the ESS also includes a response option that the "own/family business was closed or sold", thus tapping into the constraints faced by self-employed persons of helping family members.

The *subjective* measure consists in a dichotomous item indicating whether respondents would have preferred to continue in paid work at time of retirement or not.⁵ "Involuntary retirement" is the individual (retrospective) self-assessment that the actual timing and conditions of retirement were not in line with one's preferences. Early exit from work might thus be considered "voluntary" if a respondent, under the given conditions, prefers leisure over work. We thus conceive this self-assessment to depend on the cost/benefit calculation between the gains and opportunity costs from going on retirement and individual work orientation.

⁴ *Objectively forced exits* are measured by the following ESS question: "Which of the reasons shown on this card best describes your main reason for leaving your last employer?" We code as *forced* the following answers: "contract ended", "was made redundant or dismissed", "employer stopped operating", "my own/family business was closed or sold" and "illness or disability", while we coded as *non-forced*: "obtained a better job", "decided to start own business/become self-employed", "retired", "personal or family reasons" and "other".

⁵ *Subjectively self-assessed involuntary retirement* is coded according to the ESS question: "Did you want to retire then or would you have preferred to continue in paid work?" We coded as *involuntary* the response "preferred to continue in paid work" and as *voluntary* "wanted to retire".

Objectively forced exits and subjectively self-assessed involuntary retirements will obviously tend to overlap but there might be also differences. For example, even if employers might have urged older workers to leave, retirees may consider this voluntary thanks to a “golden handshake” (i.e. a favorable arrangement sponsored by the employer).

4.3 Independent variables at the individual level

We control for *birth cohort* in order to allow for the potential difference that those born before 1950 have been exposed to more pull and push factors than the later born. However, note that we cannot distinguish in this cross-sectional design from concomitant age effects.

Given *gender*-specific differences in employment and retirement patterns, we control for gender at the individual level. Given that women tend to be younger than their partners they may be less willing to work longer than men. As to forced exits, we would expect them to be less affected from economic and health-related constraints, although these differences are largely controlled for by other work-related variables.

An additional socio-demographic variable is *foreign born*. Because of immigrants’ disadvantaged position in the labor market as well as their over-representation in manual (often hazardous) occupations, they should tend to retire more frequently in involuntary fashion.

Social class is measured by occupation using the European Socio-economic Classification (ESeC) (Harrison & Rose, 2006). Class divides have been shown to be powerful predictors of retirement behavior, particularly of involuntary early exit from work (Radl, 2013a). Specifically, we expect higher exposure to push factors among manual workers and the working class in general than among the service class and the self-employed. However, “early exit cultures” might lead to a relative lower incidence of involuntary retirement.

Sector of employment is considered because early retirement waves have often been concentrated in shrinking industries (Jacobs, Kohli, & Rein, 1991); we therefore include a seven-fold categorical coding of sectors based on our recoding of the two-digit branch codes of last employment available in ESS.

The *number of years worked for pay* is a variable commonly included in retirement analyses, though there are contradicting expectations. From a push perspective, it captures potential work strain during an employee’s career. We expect a positive effect on forced exits but a negative one on the wish to have worked longer. In contrast, from a pull perspective, the length of working career is closely correlated with pension entitlements, and therefore we expect a negative effect on forced exits due to alternative pathways and less willingness to work longer.

We also include two dichotomous measures of *unemployment experience*: whether respondents’ have experienced short (3–12 months) and/or longer periods (more than 12 months) of unemployment. The literature on scarring effects has demonstrated that previous unemployment spells often lead to further joblessness and lower earnings prospects (e.g. Gangl, 2006). We thus expect positive effects of individual unemployment on the incidence of forced exit or involuntary retirement, particular for longer periods of unemployment.

Age at exit from work refers to the year in which retirees reported having left their last job; though it may differ from age of retirement. It is used as covariate in the analysis of the objective dimension of forced exits and forms part of the same sequence of survey questions.

Age of retirement is measured by using the year in which respondents reported having “retired” (this is not always congruent with exit age, i.e. the year of leaving the last job). It is employed as a covariate for the analysis of subjectively involuntary retirement.

Forced exits is one of the two dependent variables, it is based on objective (albeit self-reported) external reasons (economic or health-related forces), but we also use it as an independent variable for explaining subjectively involuntary retirements (our other dependent variable) in some models. We

expect respondents with forced exits to be more prone to prefer working longer. Therefore we will test the overlap between objective constraint and subjective evaluation at the individual level.

4.4 Independent variables at the context level

For our comparative analysis we collected selected contextual indicators (see A.1 for descriptive statistics) for all of the 24 European countries under study, for some variables we use gender-specific and/or time-variant covariates.

Statutory pension age (gender-specific and time-varying covariate) is coded according to the national age for old-age (Scruggs, Jahn, & Kuitto, 2014).

Early pension age is an (time-invariant) average for the 2000s for the earliest possible age of old-age pension receipt (Hofäcker, 2014).

Pension replacement rate is a (gender-specific) Eurostat estimate based on EU-SILC; it measures the ratio of the median gross pensions of individuals aged 65-74 relative to median gross earnings of workers aged 50-59, excluding other social benefits. For each country we calculated the averages for men and women across the years 2003-2011.⁶

Unemployment rates are taken from OECD Labour Force Statistics (OECD, 2014) as time-dependent covariate.

Employment protection: we use the *hiring and firing regulation* indicator collected by the World Economic Forum (2014) since it is available for all 24 European countries, unlike the OECD employment protection legislation indicator. It is based on surveys conducted among business executives worldwide, who are asked to assess on a 7-point scale the extent to which the hiring and firing of workers is impeded by regulations. Compiled from the Economic Freedom of the World database (Gwartney, Lawson, & Hall, 2013), we recoded the annual indicator from low to high regulation and used it as a time-varying covariate.

Life expectancy at age 60 (based on Eurostat time-series); it is a proxy for time-varying and gender-specific health-conditions and expectations of retirement duration in each country.

Average exit/retirement age are national averages of the two individual-level variables (see above), referring to “exits” and “retirement” respectively.

5. Results

5.1 Descriptive results

As a first step we analyze the timing of non/forced exits and in/voluntary retirements of retirees aged 50 and older. Figure 1 presents Kaplan-Meier estimates of the survivor function by the two objective and subjective dependent variables based on the retrospectively self-reported exit and retirement years of retirees. Panel A shows that forced exits due to job loss or health conditions occur much earlier than non-forced exits. The survival curves start diverging from age 50 onwards, opening a gap of up to 25 percentage points by age 60 between forced and non-forced transitions out of last employment. In panel B the timing of involuntary compared to voluntary retirement departs less severely; the distance between the two curves is visibly smaller than in panel A. Nevertheless, involuntary retirement tends to happen at a younger age than voluntary transitions.⁷

<FIGURE 1>

⁶ For many countries the earliest data point is from 2004 or 2005; for Switzerland and Croatia the time series starts only in 2007.

⁷ Given our sample restrictions people continuing working above 50 at the time of the interview are not included (right censoring), though the observed exit patterns are largely in line with labor force series, indicating that few people in Europe work beyond age 65.

Cross-national comparison (see Table 2) reveals that the incidence as well as the timing of forced exits and involuntary retirements varies considerably across European countries. Forced exits due to economic reasons of the firm or personal health issues occur on average earlier than non-forced exits (age 56.1 vs. 59.0 – a 2.9 years' difference on average). The same holds also for the involuntarily retired, that is, those who would have preferred to work longer, in comparison to the voluntary retired, though the gap is smaller on average (age 58.1 vs. 59.4 – a 1.3 year's difference on average). Forced exits tend to occur markedly earlier, while individuals who would have preferred working longer retire not much earlier than those who retired at their preferred time.

The considerable cross-national differences in the share of forced exits warrant consideration. The Dutch and Nordic welfare states show the highest incidence of forced exits, though this is partly due to a higher share with bad health. Disability pensions have been a major pathway for these countries for lack of earlier retirement options in public pensions (Aarts et al., 1996; Ebbinghaus, 2006). High levels of forced exits in Finland (44.2%), Norway (43.5%), Sweden (30.7%) and Denmark (27.8%) but also the Netherlands (32.1%) can be accounted by the frequent mentioning of health issues as major reasons to quit (ranging from 55% of Dutch and Finnish forced exits to 81% in Norway). In most Continental welfare states with multiple early retirement pathways, most respondents have stated that they left work for (pre)retirement (i.e. counted as non-forced exits); an exception is Switzerland (with 63% of 15% forced exits due to disability). Moreover, we find among the Eastern and Southern European countries the lowest frequency of forced exits (the health-related incidence is very low) thanks to early retirement options via public pensions.

Subjectively involuntary retirement also varies across countries, but to a somewhat lesser degree: ranging from Estonia (44.7%) and Germany (41.7%) with the highest incidence to Cyprus (17.8%) and Greece (10.1%) with the lowest. We find only a meagre cross-national correlation between forced exits and of involuntary retirements: the correlation is higher between the average exit and retirement ages in a country. With few exceptions (Estonia, UK), there is a rather strong association between average ages for forced exits and involuntary retirements, even though the former tends to be earlier. These descriptive results already indicate that the objectively defined forced exits and the subjectively self-assessed involuntary retirements do not overlap as much as one might expect. The incidence of both phenomena diverges in many countries, even though both forms of anticipated withdrawal tend to occur earlier than the non-constrained forms of retirement. With the exception of the Dutch and Nordic disability-related exits, no clear welfare state regime pattern can be detected. In our multivariate analysis we therefore explore these cross-national differences by using more fine grained indicators that capture analytically derived pull and push factors.

<TABLE 2>

Having discussed our two dependent variables separately, we should also consider their interplay. Figure 2 shows, for each country in the sample, the proportion of retirees falling into the four possible combinations of non/forced exits and in/voluntary retirements. The combination of “truly voluntary” retirement (non-forced and voluntary) is most frequent, though it varies considerably across Europe: it is lowest in Germany (not even every second retiree) and highest in Greece (almost nine out of ten). Interestingly, the other extreme, the overlap between forced exits and involuntary retirement, is not as frequent as one would expect. Overall, there are about 10 percent of retirees who report to have been pushed out of work *and* would have preferred to continue working. This is not even every third respondent of those who were objectively forced and/or subjectively pushed out. The group of this consistent (“truly involuntary”) combination varies considerably across countries, reaching its maximum in Denmark (18%). These cross-national differences reinforce our argument that we need to distinguish the two dimensions of constrained retirement, and that is worthwhile to examine the patterns at the individual and national level.

<FIGURE 2>

While these two “true” extremes are intuitively straightforward, the other two combinations are more puzzling. On the one hand, several countries show a substantial share of retirees who were objectively forced out of work, but who would not have liked to continue working (i.e. classified as voluntary retired). Two Nordic countries, Finland and Norway, fall into this category, probably due to the disability pathway that allowed people with health problems to draw a generous pension at an early age. On the other, in most countries more than 15 percent of retirees (up to 30 percent in Spain) perceive their retirement as involuntary, even though they did not leave their last job via unemployment, disability or other objective causes of forced exit. Personal reasons such as having to provide care for a frail family member may be the reason for some. An alternative explanation is that people left their jobs due to ageism and saw no opportunity to continue employment elsewhere. As already mentioned, although a possible reason for leaving the last job was that the “contract ended”, we cannot know whether this was sufficient to identify forced exits that were due to mandatory retirement clauses in collective agreements or individual contracts.⁸

5.2 Multivariate analysis I: individual-level effects

We are now presenting two sets of (linear probability) multi-level models at the individual level, one for each of our two dependent variables: objectively defined forced exits and subjectively self-assessed involuntary retirement (see Table 3). We focus on the individual level first because we will later control for individual characteristics in our macro-context models. Our first model analyzes socio-demographics and social class; the later models introduce the sector of employment and finally various aspects of individual labor market experience. For involuntary retirement we add a fourth model (S4) that uses the instance of a forced exit as a covariate to test the conditionality of the subjective self-assessment on the objective dependent variable.

In respect to birth cohort (Micro O1), the older respondents (born 1940-49) exhibit lower rates of forced exit than the younger cohorts. Despite that this effect remains significant even when controlling for individual exit age (O2), we cannot distinguish whether this is secular trend or an age group effect because of our cross-sectional design. For involuntary retirement the cohort coefficient is much smaller (S1) and vanishes once we control for the age of retirement (S2), indicating that retirement age varies between cohorts.

It is important to mention gender differences. In most specifications, women show somewhat lower constraints, especially regarding the subjective self-assessment of involuntary retirement. Although women exhibit slightly lower rates of disability than men, the main reason for this difference probably resides in the earlier availability of old-age pensions for women in several European countries. The foreign-born immigrants’ risk of being (objectively) forced out of work is not higher than for natives. However, their tendency to assess their retirement as premature (involuntary) is around 10 percentage points higher than for natives, although we control for other individual socio-economic factors. This finding may reflect different cultural norms of ageing or potentially lower pensions due to shorter contribution or residence periods for first-generation migrants.⁹

<TABLE 3>

In line with our expectations, there are significant differences in the risk of forced exits according to social class (O1). In particular, there is a notable divide between the service class and the working class (including both blue-collar workers and the service proletariat). At baseline, the risk to be pushed

⁸ Another possible explanation is that, after being pushed out of their main career job, workers may have entered – and then voluntarily left – a bridge job thus constituting their last job, but were referring to their career job when answering the question about wanting to continue working, yet this is probably unlikely the reason for the majority of cases in this group.

⁹ Note that the variable “years of paid work” does not allow distinguishing between labor market experience in the host country and in the country of origin.

out of work is around 13 percent higher for routine workers than for the higher salariat, while intermediate white-collar employees occupy a position in between. The lower salariat shows no significant difference from the upper service class. By and large, these results support our hypothesis Hii(a). The finding for small employers and self-employed persons was less expected: the closing down of their business or personal health issues might lead to this somewhat higher rate than for the service class.¹⁰

Strikingly, there are no significant class differences with respect to the self-assessment of involuntary retirement (S1). In contrast to Hii(b), the retrospective wish to have worked longer seems uniformly distributed across all social classes. This unexpected finding again draws our attention to the limited overlap between objectively forced exits and subjectively involuntary retirements and may indicate the pervasiveness of retirement age norms and heterogeneous preferences. It is possible that this pattern reflects a dynamic process of adaptive expectations, where a given degree of objective constraints is perceived differently by members of different classes who adjust their expectations in accordance with typical exit trajectories in their occupations.

In the second model (O2/S2) we analyze the impact of economic sectors in which people were last employed. The estimated coefficients show that employment constraints are less pronounced in the tertiary (service) than in the primary or secondary sectors. Unlike social class, the sector does exhibit some significant effects on the willingness to have worked longer (S2), which is particularly low in agriculture & mining. Unsurprisingly, the class effects observed in O1 are attenuated in O2 as a consequence of controlling for industry.

In models O3 and S3 we add previous labor market experience along with an individual's age at exit from work. Previous unemployment experience has a markedly strong effect on forced exit: short unemployment episodes are associated with a risk increase of 14 percent, while long unemployment (lasting more than a year) adds a further 27 percentage points. The effects on involuntary retirement are also strongly significant, although notably lower in magnitude (around 10 percentage points). Again, subjectively self-assessed involuntary retirement is a more elusive phenomenon (than exit due to job loss or disability), it is less shaped by socio-economic circumstances.

Consistent with our expectation (Hi), the estimated effect of individual retirement age is negative and highly significant. The later people leave employment, the less likely this exit is forced due to job loss, business termination or health-related causes (O3). Moreover, the corresponding subjective model (S3) demonstrates that retirees who retired later were less likely to have wished working longer than those who retired earlier. In line with the descriptive findings, the estimated coefficients are slightly smaller in the subjective than in the objective domain, suggesting that involuntary retirement is less clearly a function of timing than forced exits.

In respect to social class, there are significant effects mainly for objectively forced exits, whereas self-assessed involuntary retirement is not significantly affected. While class differentials of forced exits remain largely unaltered when controlling for labor market exit age (O2), they are reduced substantially when introducing labor market experience as control (O3). Hence, the fact that forced exits due to losing one's job or disability is stratified by social class can partly be attributed to previous unemployment spells and sector-specific characteristics (including health hazards). Nevertheless, various class effects remain significant under the full set of controls, indicating that, beyond the shadow of past vulnerability, low class position remains a genuine source of disadvantage for older workers' autonomy at the end of their careers.

In the final model on subjective involuntary retirement (S4), we include as a dichotomous covariate whether retirees were objectively forced out of their jobs (i.e. the dependent variable in O1-O3). In

¹⁰ However, in some cases the reason for closure is probably the absence of an heir to continue the family business, which would not imply that the decision to retire was forced upon the retiring self-employee or employer.

line with a congruence expectation, forced exits boost the self-assessment of involuntary retirement by 25 percentage points. While this is certainly a large effect (mirroring the descriptives in Figure 2), it is still smaller than we expected given the conceptual proximity of the two measures. It is also worth noting that several covariates (such as being female, foreign born or primary sector employment) remain meaningful predictors of self-assessed involuntariness even after accounting for externally forced exits. Although most class coefficients remain close to zero, there are weakly significant negative effects among lower sales and service workers as well as skilled manual workers ($.05 < p < .1$). Thus once we account for the timing and voluntariness of retirement, these two social classes seem to perceive their transition as less involuntary than the higher salariat under similar circumstances. This supports our hypothesis Hii(c) that emphasizes the persistence of early exit culture among the working classes. In sum, we find that our subjective variable, measured here as the wish to have worked longer, does not necessarily go together with our objective variable, even though a forced exit leads often to involuntary retirement.

5.3 Multivariate analysis II: contextual effects

Having discussed the individual level factors, we now turn to the cross-national context effects. Tables 4 and 5 test whether pull or push factors at the national level matter in explaining country differences in objectively forced exits (macro O1-O3) and subjectively self-assessed involuntary retirement (macro S1-S3). Note that we apply multilevel hierarchical models that control for all socio-economic characteristics at the micro level (micro O2/S2), except for individual labour market experience due to endogeneity concerns. As indicated by the intra-class correlation coefficients (ICC), the proportion of the overall variance located at the country level only amounts to 3.5% for forced exits and 2.8% for involuntary retirements. The meso level of country-gender-retirement cohort clusters accounts for a few additional percentage points (3.0% and 2.1% respectively), but as is common in multi-level analyses the lion's share of total variance is situated at the individual level (i.e. between retirees within clusters).

With these limitations in mind, we first test the influence of all macro-variables on the dependent variable one by one (O1/S1), while the remaining models are multivariate as the contextual variables are entered simultaneously. The second model (O2/S2) includes all covariates except the national retirement age which is added in the third model (O3/S3) as a control for the dominant exit pattern. While the inclusion of a gender dummy was sufficient at the micro-level as results only slightly differed between sexes, we report in addition to the pooled macro-model (Table 4) separate ones for men and women (Table 5) because institutional contexts (e.g. statutory pension age) can differ considerably.

<TABLE 4>

Three pull factors – statutory pension age, early retirement age, and pension replacement rate – are included in all models. The time-variant and gender specific statutory pension age at time of exit from work is slightly (at 10% significance) negatively related to forced exit (O1) and involuntary retirement (S1). Statutory pension age is more significantly positively related to forced exits in the multivariate models (O2-O3), even under control of average national retirement age. As Table 5 indicates the significant effect occurs mainly among women (supporting H1a); this is because the later the statutory pension age in a country (or over time), the more prevalent are forced exits for economic or health reasons. Conversely, an early pre-retirement option (during the early 2000s) plays no role for women. An effect can only be found for men when controlling for average retirement age (O3): men are more frequently forced out of work if alternative early pension options are limited. Thus the hypothesis about early pre-retirement options (H2a) could only be supported for men under particular circumstances. However, consistent with Figure 1, the exit age is negatively related to forced exits and age of retirement is negatively related to involuntary retirement. This may indicate that our measure is

incompletely capturing available early retirement pathways across Europe and their reforms over time.

The (gender-specific) pension replacement rate has no significant effect on forced exits, and it has a positive one on involuntary retirement for women (Table 5 S1-S3). Thus H3, the core pull by incentives explanation, cannot be confirmed. The positive effect for involuntariness among women might be due to greater heterogeneity than among men, in particular the difficulty faced by many women in achieving adequate pensions: replacement rates tend to be higher in pension systems that link benefits to prior contributions and offer meagre minimum pensions. Low-earning women with fragmented careers may have preferred to work longer than they did to improve their old age income.

Three push variables control for structural conditions: adverse labour market conditions, high labour market regulation and life expectancy in old age. First, we test the influence of the national unemployment rate at the time of exit or retirement (H4). Whereas no significant effects are found for forced exits, the coefficient is positive and (weakly) statistically significant for involuntary retirement, albeit of limited magnitude. As Table 5 shows, women (but not men) would have liked to work longer when they retired during economically difficult times, indicating that they disproportionately tend to retire prematurely when employment opportunities are lacking. This possibly points toward gender discrimination on tight labor markets, with employers using women's lower pension ages as a vehicle to shed labor.

Secondly, when testing hiring and firing regulations, for which contradicting hypotheses exist (H5/6), we find a slightly positive effect of more employment regulation on forced exits for both men and women. This holds particularly when controlling for countries' average retirement age (O2-O3), thus stricter regulation is associated with a higher incidence of forced exits. However, there is no such effect in respect to self-assessed involuntary retirement. These two inconsistent findings are not necessarily contradictory since stricter employment regulation goes hand in hand with internal labor markets, a certain share of these seemingly forced exits actually represent consensual agreements between employers and employees (Ebbinghaus 2006). According to this interpretation, stricter hiring and firing regulation is connected with a larger amount of "golden handshakes" involving the instrumental usage of the unemployment or disability pathways into retirement. Indemnity payments or other financially advantageous arrangements may be the reason why these instances are not subjectively perceived as involuntary.

Finally, turning to the third push factor, life expectancy for older workers (at age 60) is negatively correlated with forced exits. In countries with low life expectancy we find that forced exits are more common than in countries with high life expectancy, this is probably due to health-related forced exits. Interestingly, the same holds for self-assessed premature retirement: in countries with lower life expectancy respondents would have liked to work longer even though this would have decreased their retirement time but would probably improve their benefits. In contrast, in countries with better health conditions the retirees were less inclined to have worked longer despite the fact that they were on average more capable to do so. These results are significant in the bivariate¹¹ and both multivariate models, which supports H7a and falsifies H7b, demonstrating the dominant role of health conditions.

5. Conclusion

This comparative analysis of constrained retirement in Europe contributes various new insights. While the pull perspective conceives early retirement as voluntary since rational actors prefer leisure over work, the push perspective has pointed at external constraints, such as disabilities or dismissals of older workers, conceiving such exits from work as involuntary. First, our study presents new evidence

¹¹ Although these models are not bivariate in the strict sense, because they control for a range of individual characteristics, we use this terminology for simplicity.

on the prevalence of constrained retirement across Europe. For about one third of retirees constraints to individual retirement decisions could be identified, leaving little doubt that this is a social problem worth the attention of social science and policy makers.

Second, we argue that constrained retirement is a multi-faceted phenomenon that should be approached from an objective and subjective angle, overcoming the conceptual ambiguity and measurement problems of prior studies. Indeed, we have shown that there is surprisingly little overlap between objectively forced exits and subjective self-assessments of involuntary early retirement. A study of the individual and national factors accounting for these two dimensions is thus an important step forward. Future research needs to choose measures carefully when analyzing constrained retirements.

Third, analyzing the two dimensions separately we discover significant differences in individual and macro-contextual factors shaping objectively forced exits vs. subjectively involuntary retirement. While forced exits can be explained rather well with the arguments and analytical tools typically used in micro-sociological research, the subjective self-assessment of involuntary retirement is a more elusive phenomenon that is not strongly stratified by socio-economic characteristics. Social class differences, employment sectors, unemployment experience and unemployment level have a substantial impact on the probability of forced (early) exits, both across countries and at an individual level. However, only a part of the tendency toward subjectively involuntary retirement is explainable by forced exits, and various predictors – both at the individual and macro-context level – showed less clear results in predicting preferences for working longer than for the objective measure of economic or health-related causes of exit from work.

Fourth, cross-national differences in objective and subjective dimensions do matter, but the country lineup is hardly following the established welfare-regime typology observed for early retirement patterns (Ebbinghaus, 2006; Ebbinghaus & Hofäcker, 2013). The incidence of forced exits is particularly high in Dutch and Nordic welfare states (though involuntariness is rather low) due to the fact that disability pensions have been the major pathway to early exit instead of preretirement pensions. Many Southern and Eastern European countries, commonly associated with an “early exit culture”, tend to have fewer forced exits (though many retirees would have liked to work longer). Interestingly, some countries with higher exit ages like the UK and (more recently) Germany have a relatively high number of forced exits, and many retirees would have liked to work longer, indicating the importance of economic constraints.

Fifth, although several macro-level hypotheses had to be either rejected or could only be partially sustained, our cross-national analysis indicated that low statutory pension ages tend to prevent constrained retirement. Given recent reforms of European pension systems, we therefore expect constrained retirement to become more frequent unless countermeasures are taken. Indeed, reform opponents have pointed at forced exits, the inability to continue working for health, economic or other reasons, as a main objection against rising statutory pension ages. If retirement “decisions” of older workers are not voluntary, for instance, because firms lay them off or they would have liked to work longer but had no opportunity to do so, there is indeed reason to question the legitimacy of welfare state reforms that severely reduce pension benefits when drawn early.

However, we found that higher life expectancy in a country is associated with a lower incidence of both forced exits and involuntary retirements. Then, demographic trends towards healthier aging may appease these mounting pressures, though longitudinal research will be needed to confirm this expectation. Labor market regulation was found to be associated with more exits via the unemployment or disability pathway, but given that no equivalent effect could be found on subjective assessments, this largely seems to reflect “golden handshake” arrangements for long-tenured workers. Further analysis is needed to investigate the potentially favorable policy mix for particular countries which would reduce the danger of forced exits and limit circumstances leading to involuntary (premature) retirement. For instance, while our study did account for pension replacement rates, we

lacked comparable data on pension adequacy at the individual level. Similarly, life expectancy is a relatively crude indicator for the health situation of a society.

Moreover, given the retrospective nature of the survey questions and its cross-sectional design, this study is limited to analyzing past retirement of retired respondents aged 50 and older around 2010. The more recent issue of involuntary *late* exit has been largely absent. However, with pension ages rising and an increased shift toward private funded pensions across Europe (Ebbinghaus, 2011), the need to work longer than desired will grow in importance over the coming decades. Understanding the processes driving involuntary late exit and identifying risk groups should thus be a focus in future research (cf. Scherger, forthcoming). While we have evidence on the negative consequences of involuntary early retirement on personal well-being, little is known about the possible adverse consequences of involuntarily postponing retirement. We conceived the wish to have worked longer as indicative of involuntary retirement, yet in the future the main form of involuntariness in retirement might consist in being forced to continue to work longer than one would have wished.

References

- Aarts, L. J. M., Burkhauser, R. V., & de Jong, P. R. (Eds.). (1996). *Curing the dutch disease: an international perspective on disability policy reform*. Aldershot: Avebury.
- Barbeau, E. M., Krieger, N., & Soobader, M.-J. (2004). Working class matters: socioeconomic disadvantage, race/ethnicity, gender, and smoking in NHIS 2000. *American Journal of Public Health*, 94(2), 269-278. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448243/>
- Blöndal, S., & Scarpetta, S. (1998). The retirement decision in OECD countries. *OECD Economic Working Papers*, 202. <http://www.oecd.org/eco/labour/1866098.pdf>
- Blossfeld, H.-P., Buchholz, S., & Hofäcker, D. (Eds.). (2006). *Globalization, uncertainty and late careers in society*. London: Routledge.
- Blossfeld, H.-P., Buchholz, S., & Kurz, K. (Eds.). (2011). *Aging populations, globalization and the labor market: Comparing late working life and retirement in modern societies*. Cheltenham: Edward Elgar.
- Darmon, N., & Drewnowski, A. (2008). Does social class predict diet quality? *The American Journal of Clinical Nutrition*, 87(5), 1107-1117. <http://ajcn.nutrition.org/content/87/5/1107.full.pdf+html>
- Dorn, D., & Sousa-Poza, A. (2010). 'Voluntary' and 'involuntary' early retirement: an international analysis. *Applied Economics*, 42(4), 427-438. DOI:<http://dx.doi.org/10.1080/00036840701663277>
- Ebbinghaus, B. (2006). *Reforming early retirement in Europe, Japan and the USA*. Oxford: Oxford University Press. <http://dx.doi.org/10.1093/0199286116.001.0001>
- Ebbinghaus, B. (Ed.). (2011). *The varieties of pension governance: Pension privatization in Europe*. Oxford: Oxford University Press. <http://dx.doi.org/10.1093/acprof:oso/9780199586028.001.0001>
- Ebbinghaus, B., & Hofäcker, D. (2013). Reversing early retirement in advanced welfare economies: A paradigm shift to overcome push and pull factors. *Comparative Population Studies*, 38(4), 807-840. DOI:<http://dx.doi.org/10.12765/CPoS-2013-24en>
- ESS (2010/11): *European Social Survey, Round 5, 2010-11*. Data file edition 3. Norwegian Social Science Data Services, Norway – Data Archive and distributor of ESS. <http://www.europeansocialsurvey.org/data/download.html?r=5>
- Gangl, M. (2006). Scar effects of unemployment: An assessment of institutional complementarities. *American Sociological Review*, 71(6), 986-1013. <http://dx.doi.org/10.1177/000312240607100606>
- Gruber, J., & Wise, D. A. (Eds.). (1999). *Social security and retirement around the world*. Chicago, IL: University of Chicago Press.
- Gwartney, J., Lawson, R., & Hall, J. (2013). *Economic freedom of the world: Annual report 2013*. Vancouver: Fraser Institute. <http://www.freetheworld.com/2013/EFW2013-complete.pdf>
- Harrison, E., & Rose, D. (2006). The european socio-economic classification (ESeC) user guide, <http://www.iser.essex.ac.uk/esec/guide/docs/UserGuide.pdf>
- Heisig, J. P. (2015). *Late-career risks in changing welfare states: Comparing Germany and the United States since the 1980s*. Amsterdam: Amsterdam University Press.
- Hofäcker, D. (2010). *Older workers in a globalizing world: An international comparison of retirement and late-career patterns in western industrialized societies*. Cheltenham, UK: Edward Elgar.
- Hofäcker, D. (2014). In line or at odds with active ageing policies? Exploring patterns of retirement preferences in Europe *Ageing and Society*, preview June 18, 2014. <http://dx.doi.org/10.1017/S0144686X1400035X>
- Hutchens, R. (1999). Social security benefits and employer behavior: Evaluating social security early retirement benefits as a form of unemployment insurance. *International Economic Review*, 40(3), 659-678. <http://dx.doi.org/10.1111/1468-2354.00033>
- Hyde, M., Hanson, L. M., Chungkham, H. S., Leineweber, C., & Westerlund, H. (2015). The impact of involuntary exit from employment in later life on the risk of major depression and being

- prescribed anti-depressant medication. *Aging & Mental Health*, 19(5):381-9.
<http://dx.doi.org/10.1080/13607863.2014.927821>
- Jacobs, K., Kohli, M., & Rein, M. (1991). Testing the industry-mix hypothesis of early exit. In M. Kohli, M. Rein, A.-M. Guillemard, & H. van Gunsteren (Eds.), *Time for retirement: Comparative studies on early exit from the labor force* (pp. 67-96). New York: Cambridge University Press.
- Kohli, M. (2007). The institutionalization of the life course: Looking back to look ahead. *Research in Human Development*, 4(3-4), 253-271.
<http://dx.doi.org/10.1080/15427600701663122>
- Kohli, M., Rein, M., Guillemard, A.-M., & van Gunsteren, H. (Eds.). (1991). *Time for retirement: Comparative studies on early exit from the labor force*. New York, NY: Cambridge University Press.
- Layte, R., Levin, H., Hendrickx, J., & Bison, I. (2000). Unemployment and cumulative disadvantage in the labour market. In D. Gallie & S. Paugam (Eds.), *Welfare regimes and the experience of unemployment in Europe* (pp. 153-174). Oxford: Oxford University Press.
- Lazear, E. P. (1986). Retirement from the labor force. In O. Ashenfelter & R. Layard (Eds.), *Handbook of labor economics* (Vol. I, pp. 305-353). Amsterdam: Elsevier.
- McFadden, E., Luben, R., Wareham, N., Bingham, S., & Khaw, K.-T. (2008). Occupational social class, educational level, smoking and body mass index, and cause-specific mortality in men and women. *European Journal of Epidemiology*, 23(8), 511-522.
<http://dx.doi.org/10.1007/s10654-008-9267-x>
- Naschold, F., de Vroom, B., & Casey, B. (1994). Regulating employment and retirement: An international comparison between firms and countries. In F. Naschold & B. de Vroom (Eds.), *Regulating employment and welfare* (pp. 433-489). Berlin: W. de Gruyter.
- OECD (2014). *Labour Force Statistics in OECD Countries*, Paris: OECD. <http://stats.oecd.org>.
- Radl, J. (2012). Too old to work, or too young to retire? the pervasiveness of age norms in Western Europe. *Work, Employment & Society*, 26(5), 755-771.
<http://dx.doi.org/10.1177/0950017012451644>
- Radl, J. (2013a). Labour market exit and social stratification in Western Europe: The effects of social class and gender on the timing of retirement. *European Sociological Review*, 29(3), 654-668.
<http://dx.doi.org/10.1093/esr/jcs045>
- Radl, J. (2013b). *Retirement timing and social stratification: A comparative study of labor market exit and age norms in Western Europe*. London: De Gruyter Open.
<http://www.degruyter.com/view/product/209757>
- Radl, J., & Himmelreich, R. K. (2014). The influence of marital status and spousal employment on retirement behavior in Germany and Spain. *Research on Aging*, preprint June 9, 2014.
<http://dx.doi.org/10.1177/0164027514536403>
- Scherger, S. (Ed.). (forthcoming). *Comparative perspectives on work beyond retirement age: Cases, contexts, consequences*. Basingstoke: Palgrave Mcmillan.
- Scruggs, L., Jahn, D., & Kuitto, K. (2014). *Comparative welfare entitlements dataset 2: Version 2014-03*. <http://sp.uconn.edu/~scruggs/cwed/cwedall12.zip>
- Shultz, K., Morton, K., & Weckerle, J. (1998). The influence of push and pull factors on voluntary and involuntary early retirees' retirement decisions and adjustments. *Journal of Vocational Behavior*, 53, 45-57. <http://dx.doi.org/10.1006/jvbe.1997.1610>
- Solinge, H. v., & Henkens, K. (2007). Involuntary retirement: The role of restrictive circumstances, timing, and social embeddedness. *Journal of Gerontology: Social Sciences*, 62B(5), S295-S303. <http://psychsocgerontology.oxfordjournals.org/content/62/5/S295.full>
- Solinge, H. v., & Henkens, K. (2010). Living longer, working longer? The impact of subjective life expectancy on retirement intentions and behaviour. *European Journal of Public Health*, 20(1), 47-51. <http://dx.doi.org/10.1093/eurpub/ckq095>
- Szinovacz, M., & Davey, A. (2005). Predictors of perceptions of involuntary retirement. *The Gerontologist*, 45(1), 36-47. <http://dx.doi.org/10.1093/geront/45.1.36>
- Van Tubergen, F., Maas, I & Flap, H. (2004). The economic incorporation of immigrants in 18 Western societies: Origin, destination, and community effects, *American Sociological Review*, 69(5), 701-724. <http://dx.doi.org/10.1177/000312240406900505>

World Economic Forum (2014). *The global competitiveness report 2014-2015*, Zürich: World Economic Forum.
http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf

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Table 1
Typology of un/constrained retirement

<i>Subjective internal motivation</i>	<i>Objective external condition</i>	
	Non-forced	Forced
Voluntary	1) truly voluntary/unforced	3) voluntary but forced
Involuntary	2) involuntary but unforced	4) truly involuntary/forced

Table 2

Forced exits and involuntary retirement among retirees: Frequency and average age (sorted by forced exits)

	Exit from work						Retirement			
	(%)	Age					(%)	Age		
	All forced	Dis-ability	Disab. (% all)	Forced	Non-forced	Gap	Invol-untary	Invol-untary	Volun-tary	Gap
Finland	44.2	24.4	(55.1)	56.4	60.9	4.5	20.5	57.6	60.3	2.7
Norway	43.5	35.2	(80.9)	57.6	63.3	5.6	19.1	60.1	63.7	3.6
Cyprus	37.5	13.6	(36.4)	56.4	60.3	3.9	17.8	60.2	61.9	1.7
Netherlands	32.1	17.6	(55.0)	57.0	61.0	4.0	19.0	60.9	62.0	1.1
Sweden	30.7	22.9	(74.5)	57.5	63.5	6.0	21.3	62.8	63.4	0.6
Germany	30.5	12.2	(40.0)	57.1	59.8	2.7	41.7	58.8	60.9	2.1
Estonia	30.4	10.3	(33.9)	58.0	59.9	1.9	44.7	57.2	58.7	1.4
U.K.	29.6	16.2	(54.5)	55.9	59.6	3.7	29.5	58.0	59.8	1.7
Belgium	29.5	16.4	(55.8)	54.7	58.0	3.2	21.9	59.3	59.6	0.4
Lithuania	28.9	16.1	(55.6)	56.0	59.6	3.6	34.2	58.4	59.8	1.3
Denmark	27.8	20.1	(72.2)	56.8	60.8	3.9	31.6	58.3	61.5	3.1
Ireland	26.2	14.0	(53.4)	57.3	59.9	2.7	29.3	60.3	60.6	0.2
Hungary	25.5	14.1	(55.1)	54.7	57.1	2.4	30.9	55.3	57.0	1.7
Spain	25.2	13.7	(54.5)	55.9	60.8	4.8	37.7	60.3	61.9	1.6
Portugal	22.0	10.6	(48.3)	57.0	59.1	2.1	23.6	57.5	59.8	2.3
France	20.1	9.1	(45.5)	55.5	58.1	2.5	23.7	57.8	58.6	0.7
Czech R.	19.4	12.2	(62.7)	55.6	58.9	3.4	24.2	58.3	58.7	0.4
Poland	18.1	10.3	(57.1)	54.9	56.1	1.3	28.8	55.8	56.6	0.7
Slovenia	17.7	3.1	(17.6)	54.8	55.9	1.1	19.5	54.8	55.8	1.0
Slovakia	16.4	6.1	(37.0)	54.1	56.7	2.6	27.6	55.4	56.8	1.4
Switzerland	15.0	9.3	(62.5)	57.7	61.1	3.5	20.2	61.5	62.3	0.8
Bulgaria	13.6	3.5	(25.9)	56.0	57.5	1.4	18.3	56.8	57.4	0.6
Croatia	12.4	5.7	(46.2)	55.4	56.3	0.9	19.3	55.1	56.4	1.3
Greece	12.3	3.6	(29.2)	56.1	58.6	2.5	10.1	59.3	59.4	0.1
Total	24.4	12.6	(51.4)	56.1	59.0	2.9	25.9	58.1	59.4	1.3

Notes: Average ages should not be interpreted in absolute but only in relative terms, as they only refer to current retirees.

Source: European Social Survey (ESS), Round 5, 2010, own calculations.

Table 3 Predictors of forced exit and involuntary retirement at individual level

	(Objectively) forced exit			(Subjectively) involuntary retirement			
	Micro O1	Micro O2	Micro O3	Micro S1	Micro S2	Micro S3	Micro S4
Birth cohort 1940-49 (ref: born later)	-0.245***	-0.246***	-0.085**	-0.066**	-0.069**	0.016	0.018
Female (ref: male)	-0.004	-0.002	-0.051**	-0.036*	-0.033*	-0.057**	-0.051**
Foreign born (ref: native)	-0.002	-0.004	-0.009	0.110*	0.105*	0.099*	0.097*
Social class (ref: higher salariat)							
Lower salariat	0.01	0.013	0.013	-0.012	-0.013	-0.022	-0.025
Intermediate occupations	0.060+	0.061+	0.039	0.018	0.018	0.001	-0.002
Small employers & self-employed	0.054*	0.025	0.047+	-0.009	-0.007	0.017	-0.006
Higher grade blue-collar	0.107***	0.083**	0.055*	0.014	-0.003	-0.023	-0.019
Lower sales & service	0.107**	0.087*	0.068+	-0.008	-0.025	-0.031	-0.044+
Skilled workers	0.098**	0.064*	0.032	-0.027	-0.045	-0.056	-0.061+
Routine workers	0.133***	0.117***	0.081**	0.013	0.003	-0.013	-0.027
Sector (Ref: Trade & hotels)							
Agriculture & Mining	--	0.004	0.01	--	-0.093**	-0.100**	-0.110**
Manufacturing	--	-0.013	-0.021	--	-0.006	-0.014	-0.016
Utilities & construction	--	0.035	0.013	--	0.044	0.039	0.028
Transport	--	-0.075**	-0.062*	--	-0.026	-0.024	-0.008
Private Services	--	-0.060*	-0.066**	--	-0.071**	-0.082**	-0.048+
Public sector & education	--	-0.091***	-0.075***	--	-0.050*	-0.053*	-0.028
Number of years worked for pay	--	--	-0.003***	--	--	-0.001	-0.001
Ever unemployed 3-12 months	--	--	0.144***	--	--	0.094***	0.059*
Ever unemployed more than 12 months	--	--	0.269***	--	--	0.097***	0.033+
Age at exit from work/retirement	--	--	-0.025***	--	--	-0.020***	-0.016***
Forced exit	--	--	--	--	--	--	0.253***
Constant	0.381***	0.420***	0.291***	0.324***	0.356***	0.293***	0.252***
N observations	4,859	4,859	4,859	4,758	4,758	4,758	4,115
N clusters:country/country-gender-cohort	24	24	24	24	24	24	24

Notes: + p<0.1, * p<0.05, ** p<0.01, *** p<0.001; Source: ESS Round 5, 2010-11, own calculations

Table 4
Predictors of forced exit and involuntary retirement at macro level (three-level cross-classified model)

	(Objectively) forced exits			(Subjectively) involuntary retirement		
	Macro O1	Macro O2	Macro O3	Macro S1	Macro S2	Macro S3
	Separately	Jointly	Jointly	Separately	Jointly	Jointly
Inclusion of covariates						
H1 Statutory pension age ^{g†}	0.008+	0.018**	0.013*	-0.008+	0.003	-0.001
H2 Early pension age (2000/2010) ^g	0.004	-0.003	-0.001	0.000	0.004	0.002
H3 Pension replacement rate ^g	-0.249	-0.282	-0.238	0.110	0.013	0.117
H4 Unemployment rate [†]	-0.003	-0.002	-0.002	0.007**	0.005+	0.006*
H5/6 Hiring and firing regulation	0.016	0.053+	0.049*	-0.012	0.010	0.004
H7 Life Expectancy at age 60 ^{g†}	-0.061***	-0.066***	-0.066***	-0.040***	-0.041***	-0.047***
Control: Average exit/retirement age	0.044***	--	0.071***	-0.004	--	0.032***
N observations	4,859	4,859	4,859	4,758	4,758	4,758
N clusters: country/country-gender-cohort	24/787	24/787	24/787	24/757	24/757	24/757
ICC/Variance at country level	0.0347	0.0219	0.0108	0.0277	0.0066	0.0051
ICC/Variance at country-gender-cohort level	0.0301	0.0047	0.0047	0.0213	0.0028	0.0028
Variance at individual level	--	0.1611	0.1610	--	0.1761	0.1759

Notes: Three-level random-constant model: (individual nested in country-gender-cohort clusters nested in countries);

g = gender-specific covariate; t = time-varying covariate: reference year is year of exiting last job for O1-O4 and year of retirement for S1-S4.

Models control for following individual-level covariates: gender, cohort, foreign born, class, sector (cf. Models Micro O2 and Micro S2 in Table 3 respectively).

ICC (columns O1 and S1) is the intraclass correlation coefficient and refers to the respective empty models.

+ p<.1, * p<0.05, ** p<0.01, *** p<0.001.

Source: ESS Round 5, 2010-11

Table 5
Predictors of forced exit and involuntary retirement at macro level (three-level cross-classified model)

MEN	(Objectively) forced exits			(Subjectively) involuntary retirement		
	Macro O1	Macro O2	Macro O3	Macro S1	Macro S2	Macro S3
Inclusion of covariates	Separately	Jointly	Jointly	Separately	Jointly	Jointly
H1 Statutory pension age ^{g†}	0.008	0.020	-0.001	-0.004	0.017	0.006
H2 Early pension age (2000/2010) ^g	0.008	0.014	0.015*	-0.003	0.002	0.002
H3 Pension replacement rate ^g	-0.343	-0.626	-0.295	-0.19	-0.382	-0.269
H4 Unemployment rate [†]	-0.006	-0.006	-0.006	0.003	0.000	0.002
H5/6 Hiring and firing regulation	0.007	.066*	0.052*	-0.001	0.037	0.030
H7 Life Expectancy at age 60 ^{g†}	-0.065***	-0.066***	-0.065***	-0.043***	-0.048***	-0.059***
Control: Average exit/retirement age	0.038***	--	0.074***	-0.004	--	0.033**
N observations	2,276	2,276	2,276	2,288	2,288	2,288
N clusters: country/country-cohort	24/386	24/386	24/386	24/373	24/373	24/373
ICC/Variance at country level	0.0317	0.0179	0.0087	0.0348	0.0076	0.0068
ICC/Variance at country-cohort level	0.0126	0.0006	0.0003	0.0000	0.0000	0.0000
Variance at individual level	--	0.1604	0.1606	--	0.1812	0.1792

(continued)

WOMEN	(Objectively) forced exits			(Subjectively) involuntary retirement		
	Macro O1	Macro O2	Macro O3	Macro S1	Macro S2	Macro S3
Inclusion of covariates	Separately	Jointly	Jointly	Separately	Jointly	Jointly
H1 Statutory pension age ^{gt}	0.014*	0.028**	0.018*	-0.008	0.005	-0.001
H2 Early pension age (2000/2010) ^g	0.007	0.006	0.003	0.002	0.008*	0.006
H3 Pension replacement rate ^g	-0.047	0.034	-0.001	0.554**	0.450*	0.502*
H4 Unemployment rate ^t	-0.003	-0.001	-0.001	0.009***	0.008**	0.008**
H5/6 Hiring and firing regulation	0.025	0.047*	0.049**	-0.022*	-0.013	-0.012
H7 Life Expectancy at age 60 ^{gt}	-0.047***	-0.063***	-0.062***	-0.024**	-0.022**	-0.025**
Control: Average exit/retirement age	0.051***	--	0.056***	-0.003	--	0.020*
N observations	2583	2583	2583	2470	2470	2470
N clusters: country/country-cohort	24/401	24/401	24/401	24/384	24/384	24/384
ICC/Variance at country level	0.0417	0.0098	0.0073	0.0214	0.0017	0.0016
ICC/Variance at country-cohort level	0.0354	0.0073	0.0071	0.0374	0.0060	0.0058
Variance at individual level	--	0.1621	0.1618	--	0.1695	0.1694

Notes: Three-level random-constant model: (individual nested in country-cohort clusters nested in countries).

g = gender-specific covariate; t = time-varying covariate: reference year is year of exiting last job for O1-O4 and year of retirement for S1-S4.

Models control for following individual-level covariates: gender, cohort, foreign born, class, sector (cf. Models Micro O2 and Micro S2 in Table 3 respectively).

+ p<.1, * p<0.05, ** p<0.01, *** p<0.001.

Source: ESS Round 5, 2010-11

Table A.1
Descriptive statistics

Dichotomous variables	%	Std error		
Demographics				
Birth Cohort 1940-49 (Ref: Born later)	77.8	0.67		
Female (Ref: Male)	52.6	0.78		
Foreign born (Ref: Native)	5.9	0.37		
Social class				
Higher salariat	9.2	0.46		
Lower Salariat	20.7	0.63		
Intermediate Occupations	8.5	0.45		
Small employers & Self-employed	7.8	0.43		
Higher Grade Blue Collar	9.8	0.46		
Lower Sales & Service	9.5	0.47		
Skilled Workers	11.7	0.51		
Routine Workers	22.8	0.65		
Economic Sector				
Trade & Hotels	7.5	0.41		
Agriculture & Mining	21.8	0.64		
Manufacturing	9.2	0.46		
Utilities & construction	13.2	0.53		
Transport	6.2	0.38		
Private Services	12.3	0.51		
Public sector & education	15.8	0.58		
Labor market experience				
Ever unemployed 3-12 months	9.2	0.45		
Ever unemployed more than 12 months	12.6	0.53		
Continuous variables	Mean	Std error	Min	Max
Individual level				
Number of years worked ¹	36.84	0.14	0	63
Country-level ²				
H1 Statutory pension age	61.85	0.11	55.0	67.0
H2 Early pension age (2000/2010)	59.43	0.12	52.0	67.0
H3 Pension Replacement Rate	0.50	0.00	0.37	0.65
H4 Unemployment rate	9.32	0.16	1.50	24.3
H5/6 Hiring and firing regulation	0.07	0.02	-2.14	1.59
H7 Life Expectancy at age 60	21.17	0.09	14.5	27.8
Control: Average exit age	58.37	0.02	55.3	61.6

Source: ESS Round 5, 2010-11, own calculations.

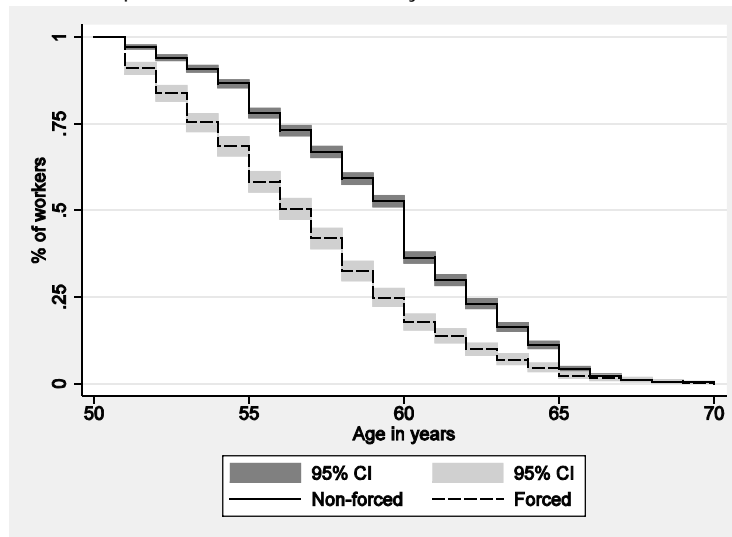
Notes: all descriptive statistics refer to objectively forced exits;

¹ Variable is group-mean centered in multivariate models

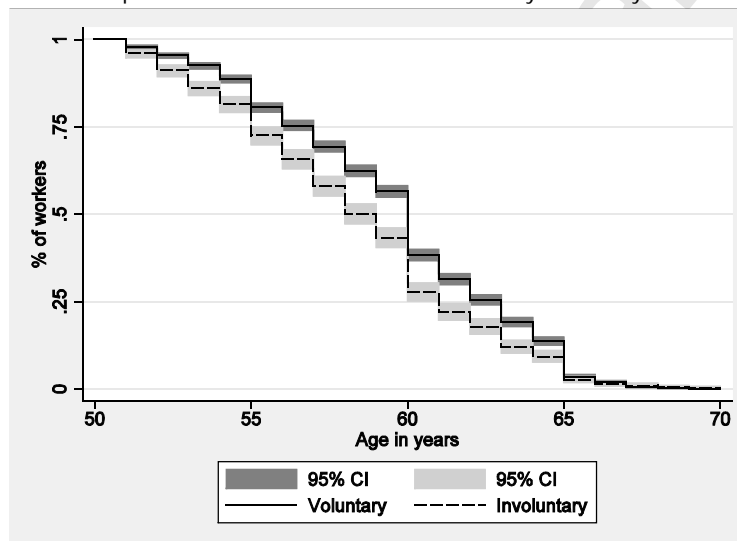
² Country-level statistics are weighed by inverse number of observations in each country to account for sample size differences

Figure 1: Kaplan-Meier survival curves of un/constraint retirements

Panel A: Kaplan-Meier survival curves by forced/non-forced exits



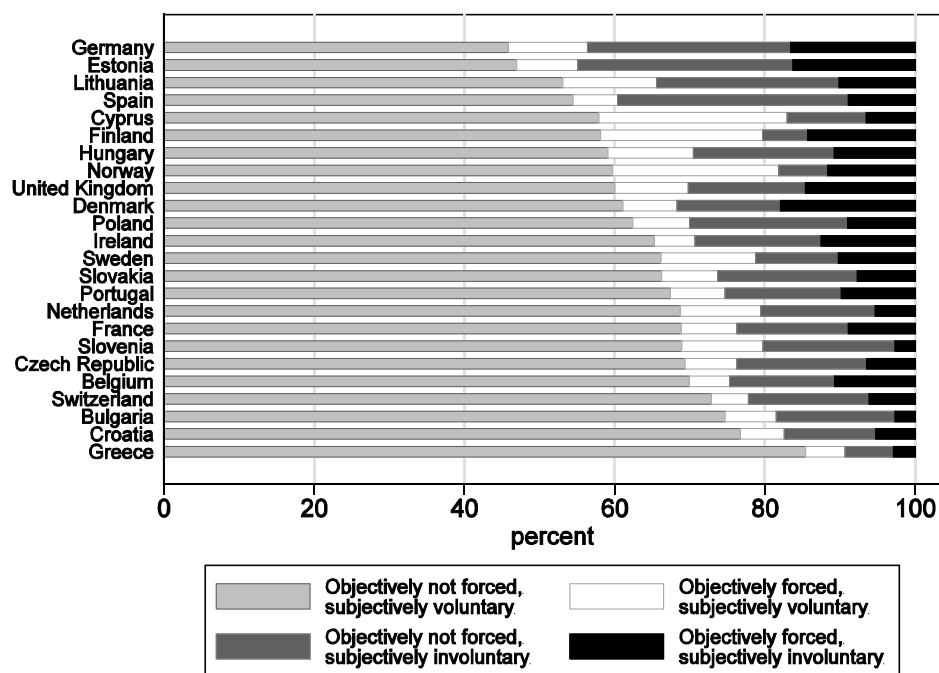
Panel B: Kaplan-Meier survival curves of involuntary/voluntary retirements



Source: ESS, Round 5, 2010/11, own calculations.

Note: Sample comprising selected 24 European countries (see Table 2).

Figure 2: Distribution of retirees according to objective and subjective constraints in Europe



Source: ESS, Round 5, 2010/11, own calculations.