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Economic Crisis and Old Age Employment in Europe

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Abstract

Population ageing represents a significant change in human history, with far-reaching economic repercussions. The increase in the number of old and inactive populations, rearticulates the debates regarding labor market participation of old-age workers. However, while compulsory and official age of retirement is similar across Europe, actual labor market exit age varies to a great extent and is below the official levels. In this paper, we examine how employment levels among old-age workers (50-65) in Europe have evolved during the last decade and how they have been affected by the recent economic crisis. To this end, we pool together the four waves of the Survey of Health, Ageing and Retirement in Europe (SHARE) and focus on individuals between 50 and 65 years of age who are in the last stage of their working careers and who are facing important labor market participation decisions.

1. Introduction

In most of the European countries, population older than 60, is soon expected to be almost one third of the total population, which means an increasing old age dependency ratio, huge number of old and inactive population (Borsch-Supan, 2001). Supporting the expeditiously ageing populations by creating necessary income and tax revenue to compensate pensions and medical care does not seem to be sustainable, considering the shrinking size of the working-age population (Coleman, 1992).

In this paper, we try to answer the following questions: How did old age employment evolve in Europe during the last decade? To what extent older workers are affected by the recent economic crisis and the ongoing economic slowdown. We exploit Survey of Health, Ageing and Retirement in Europe (SHARE) for our analysis. SHARE is concentrated on health, socioeconomic status and family networks of individuals aged 50 or over which makes it appropriate for our analysis. However, we concentrate on individuals aged 50-65 who are facing the real labor force participation decisions. Four waves of SHARE are pooled together to capture the period from 2004 to 2011 for the ten countries which participated in all of the 4 waves: Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Switzerland and Belgium.

The present text has the following structure: Firstly, a brief description of theoretical approaches to old age employment is presented in Section 2. This is followed by the presentation of the main research questions and hypothesis in Section 3. Data, variables and methodology are explained in Section 4. Our findings are discussed in Section 5 and finally, a brief discussion is provided in Section 6.

2. Theoretical Background

United Nations (UN) Report on ageing populations of the world provides a presentation of the general trends of ageing in the world according to the development regions as well as across countries. UN Report acquaints that the developed world will be followed

by the less developed world in 21st century and that the percentage of people over 60 in less developed countries will reach the levels of the developed countries in 2000s (UN, 2001). However, ageing emerges as a bigger problem in contemporary Europe, since populations of various European countries have already started to decline[1].

European Commission (EC)'s Report on age and employment puts emphasis on these recent trends as well. This Report highlights the significant role of diverging national legislations as well as country specific characteristics of employment, age requirements, retirement ages and pension schemes in Europe (O´Dempsey *et al*., 2011). Likewise, World Health Organization (WHO)'s Report, emphasizing the problem of increasing health care and social security costs, also draws attention to the importance of planning and appropriate policy choices which can make it possible to deal with the challenges of ageing populations (WHO, 2002).

Changing age structure of the European labour market is a vital consequence of the ageing process Europe has been going through. As a consequence of the ageing process, younger cohorts entering into the European labour market is smaller than the cohorts retiring and leaving the labour market. This process results in changing labour market dynamics in Europe, escalating the importance of participation rates of the older workers. Labour market participation emerged as one of the mostly debated phenomena within the European context, especially in the countries with decreasing proportions of active males after the age of 50 and with low levels of female labour force participation (Lesthaeghe, 2000).

Evolution of the shares of the main age-groups: 0-15, 15-64 and 65+ from 1992 to 2012 is presented in Table 1 in the Appendix. While a decline in the share of the youngest age-group (0-15) can be distinguished clearly, an increase in the share of the oldest age-group (65+) is observed. Despite the common downward trend in the (15-64) age-group, divergences among European countries can be discerned.

[1] According to Eurostat 2010 figures populations of Bulgary, Estonia, Germany, Latvia, Lithuania, Hungary, Romania and Croatia are declining both in terms of natural change and total change (natural change+ net migration+ statistical adjustment). For further details:
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:Crude_rates_of_population_change,_2008-2010_(per_1_000_inhabitants).png&filetimestamp=20111130162518

While compulsory age of retirement is approximately the same across Europe, actual labour market exit age varies to a greater extent, in most being below the official levels (Romans, 2007). This divergence drew considerable attention recently, with a series of studies focusing on various push and pull factors influencing older workers´ retirement decisions (Blondal and Scarpetta, 1998; Burtless and Quinn, 2002; von Nordheim, 2004; Oorschot and Jensen, 2009; Pitt-Catsouphes and Smyer, 2005; Shurtz et al., 1998).

As a result of the promotion of early exit for older workers due to high unemployment rates experienced during late 1970s and 1980s, labour force participation of older workers declined enormously during the recent decades (Oorschot and Jensen, 2009). However, realization of the ageing of European populations led European states to start a fight against this problem and to try to find ways to reverse this ongoing decline. Emerging challenges of the new century; ageing populations, globalization and increasing competition necessitated Europe to take some measures to reduce the unused capacity of labour, increase the effectiveness of its markets and consequently increase its competitiveness in the global world.

European Council's Lisbon Strategy[2] launched in 2000 was an outcome of this quest. One of the major issues highlighted in the Lisbon Strategy is the low employment rates of females and young old individuals (50-64 age-group) prevailing in most of the European countries. Therefore, specific employment rates were set with the Lisbon Strategy: Overall employment rate of 70 percent, female employment rate of 60 percent and employment rate of 50 percent for the older aged workers (55-64 age-group) in 2010. Moreover, the EU´s already set two ambitious objectives, the Stockholm target of 50 per cent increase in the employment rates of older workers and the Barcelona target of 5 year delay of the age at which old workers stop working, highlight the importance of the issue for the Europeans (von Nordheim, 2004).

European countries, having realized the need to increase the labour market participation of elderly, are reinforcing new measures to encourage employment of older

[2] For further information information: http://ec.europa.eu/europe2020/pdf/lisbon_strategy_evaluation_en.pdf

workers and to discourage their dismissal as well as introducing protective measures on health and safety. Albeit inevitable divergences observed among countries, some of the prominent policy instruments adopted are the escalation of the legal pension age, regulation of the disability insurance, termination of special early retirement schemes, shifting towards more active labour market policies and promotion of gradual pensions as well as part time work (Matagne, 2008). Whilst, encouragement of older workers recruitment is promoted in terms of subsidies and reimbursements in various European countries like Belgium, Bulgaria and Hungary, or with tax incentives like in Romania; special assistance is also provided for the older workers like training courses directed at registered unemployed elderly in Malta and the UK (O´Dempsey *et al*., 2011).

An official mandatory retirement age does not exist in most of the European countries. Public and private sector pensionable ages are also almost the same, neither falling below the age of 60. However actual retirement age diverges to a great extent among European countries. This divergence is commonly attributed to the differences in pension systems and income support programmes like unemployment-related benefits and special early retirement benefits. A brief summary of pensionable and mandatory ages in Europe is given in Table 2 in the Appendix.

Differences in the generosity of both public and private pensions and the degree of State interference in various private pension schemes are among the main factors determining the retirement decisions of people in different countries in Europe. According to Ebbinghaus (2006) in Matagne (2008), a mediation mechanism between the protection-related pull and production-related push factors plays a crucial role in the explanation of cross-country differences: While on the one hand welfare regimes may provide older workers with incentives to quit working at earlier ages, on the other hand potential exit pathways can be created by firms or labour-shedding strategies can be adopted.

Confronting the challenge of an ageing workforce, European countries have introduced reforms regarding their pension schemes. Recent reforms aiming at lower rates of early retirement focus on a shift from state to market pension providers, to occupational and private pension schemes in particular (Schils, 2008). Another path followed is the

lowering of public pension benefits to courage people to stay longer in the labour market. However, these kinds of measures are criticized since they have the potential to result in exploration of alternative pathways to early retirement such as disability and unemployment (Kohli *et al*., 1991). Disability pensions which are usually paid without even a test are therefore very commonly used as substitutes for old age pensions (Borsch-Supan, 2007). Shift towards market provided pension systems has the risk of making early retirement eligible only for a selective part of the population who are more privileged like workers working in high-paid jobs (Schils, 2008).

More flexible programmes are proposed to make age of retirement an individual choice and to adjust the pension level accordingly. As it is argued by Blondal and Scarpetta (1999), systems structured this way would be both more neutral and efficient, allowing people to retire at the age of 50 with the accompanying costs of a lower pension stream and rewarding people who stay in the labour market until their late 60s.

3. Research Questions and Hypothesis

Old age employment is a complex phenomenon with numerous dynamics operating simultaneously at both individual and institutional levels. Firstly, participation in the labour market is an individual decision depending on various factors like accumulated wealth, expectations about future, perceived health status and life standards, satisfaction at the work place, individual conceptions of family, leisure and cultural elements. However, employment decisions are also directly affected by the labour market regulations, generosity of the welfare regimes, early retirement schemes, statutory retirement age, benefits provided by the pension systems and other income support programmes like unemployment related benefits.

Firstly, we focus on how old age employment evolved in the last decade. The longitudinal nature of SHARE data allows us to analyze how employment of older workers evolved since 2004. Employment rates for the whole working-age population experienced an increase as a consequence of the economic expansion experienced at the beginning of the century. This trend, however, came to a sudden conclusion with the

recent economic crises. Effects of the economic downturn were felt not later than 2010 in most European labour markets, although its timing varied across Europe.

Inevitably, older people have also felt the effects of the recession like all segments of the population. However, the publicly available statistics show how older people were less severely affected by the recession in comparison with younger people, at least in terms of their employment levels. Therefore, our hypothesis with respect to the time dimension is that employment levels of people aged 50 and over have not experienced a significant decline for the period 2004 to 2012.

We attribute this trend to various elements, one of the most significant being the seniority principle, which prevents older workers from being fired in uncertain economic times. Experience accumulated as well as different types of contracts to which younger and older workers are subjected to[3] also have a protective effect for the older aged workers. Moreover, households or families would attempt to keep their employed members in the labour market when jobs are scarce, postponing the retirement of older workers. The crisis might, in this regard, activate or reinforce the intergenerational support relationships within families. Older workers might be pushed to stay in the labour market longer than they would prefer to support other family members who might have been laid off or who are unable to find jobs.

Secondly, we concentrate on the cross country differences observed in Europe. Although it is difficult to define clear cut boundaries, different welfare regimes and consequently diverse institutional settings and social protection mechanisms can be found in Europe. Miscellaneous pension schemes, public or private provision of basic pensions, existence of supplementary provisions and levels of decommodification are some of the main factors explaining the variations among different regimes (Esping-Andersen, 1990). In addition to the institutional level, cultural regimes, family networks and gender norms are also among the most influential factors in the explanation of the different ways in which people make decisions about their jobs.

[3] The fact that temporary working contracts are mostly applied to younger people makes them more fragile in terms of economic downturns since employers would simply choose not to renew them.

We control for various variables such as age, educational attainment, gender, marital status and having children living in the same household in order to account for individual heterogeneity. We then focus on the gender differences since we expect women's labour market participation levels to be lower than that of men[4] for all countries and for the whole period covered. While women experience regular interruptions or total withdrawal from the labour market as a consequence of the responsibilities they usually assume within families, men usually stay longer in the labour markets to support their families. We expect this divergence to be more discernible in Southern European countries. In order to scrutinize the gender differences, we run two separate models for males and females. However, when the recent economic downturn is considered, women are expected to be less affected since the sectors hit the hardest are the male dominated sectors.

4. Data, Variables and Methodology

4.1. Data

SHARE is an interdisciplinary database bringing together different fields of sociology, economics and demography, designed particularly for the comprehension of different aspects of the ageing process. SHARE is a cross-national panel database providing us with individual micro data on more than 85000 individuals aged 50 and over in 19 European countries.

In Table 1 countries participated in SHARE are presented. Number of countries participating in SHARE survey increased in each wave, from 12 in the 1st Wave to 14 in the 2nd Wave and finally to 16 in the 4th Wave. 10 countries that participated in all 4 Waves are displayed in the first part of Table 1. Our analyses are concentrated on these 10 countries: Austria, Belgium, Denmark, Germany, France, Italy, Netherlands, Spain, Switzerland and Sweden. SHARE data enables us to make cross country and longitudinal analysis of labor market participation of old age workers in these 10 European countries for the period 2004 to 2012.

[4] For detailed analysis of the factors affecting female labour market participation: Mincer, 1962.

Target population of individuals participated in the baseline SHARE interview is demarcated as: *"All individuals born in 1954 or earlier, speaking the official language of the country and not living abroad or in an institution such as a prison during the duration of the field work and their spouses/partners independent of age"* (Klevmarken et al., 2005).

Table 1. Participation of Countries in SHARE Waves

	Countries	Wave 1	Wave 2	Wave 3	Wave 4
1	Austria	2004	2006/07	2008/09	2011
2	Germany	2004	2006/07	2008/09	2011/12
3	Sweden	2004	2006/07	2008/09	2011
4	Netherlands	2004	2007	2008/09	2011
5	Spain	2004	2006/07	2008/09	2011
6	Italy	2004	2006/07	2008/09	2011
7	France	2004/05	2006/07	2009	2011
8	Belgium	2004/05	2006/07	2008/09	2011
9	Switzerland	2004	2006/07	2008/09	2011
10	Denmark	2004	2006/07	2008/09	2011
11	Greece	2004/05	2007	2008/09	-
12	Israel	2005/06	-	-	-
13	Czech	-	2006/07	2008/09	2011
14	Poland	-	2006/07	2008/09	2011/12
15	Ireland	-	2007	-	-
16	Hungary	-	-	-	2011
17	Portugal	-	-	-	2011
18	Slovenia	-	-	-	2011
19	Estonia	-	-	-	2010/11

Source: SHARE Release Guide 1.1.1 Wave 4

However, some eligible respondents of the baseline interview turned out to be ineligible through the consequent waves as a result of loss of contact or simply due to their refusal to participate. Moreover, as a consequence of the panel mortality, initial sample sizes and age structures changed throughout the successive waves, necessitating certain modifications[5]. Various adjustment mechanisms needed to be introduced to

[5] Evolution of the age structure of the SHARE sample throughout 4 waves is presented in Table 1 in Appendix
.

tackle the main challenges of the survey data, nonresponse, panel mortality and the consequent attrition problem.

Therefore, following the 1st Wave, refreshment samples were introduced to complement the baseline samples to maintain the representation of the population. While baseline samples of the 1st Wave was composed of individuals born in 1954 and earlier, refreshment sample of Wave 2 involved people born in 1955 and 1956. Refreshment samples of those countries that did not have a refreshment sample in Wave 2, included individuals born between 1955 and 1960 in Wave 4[6] (Lynn et al., 2013). For the unit nonresponse and panel attrition issues, SHARE relies on the ex-post calibration procedure[7]. Table 2 displays the sample sizes for each wave corresponding to the number of observations for the main interest group of the SHARE survey: individuals who are 50 and over.

Table 2. Sample sizes of SHARE Waves

	WAVE-1			WAVE-2			WAVE-3			WAVE-4		
Country	male	female	total	male	female	total	male	female	total	male	female	total
Austria	778	1071	1849	543	779	1322	338	480	818	2211	2945	5156
Germany	1370	1572	2942	1183	1344	2527	859	967	1826	753	826	1579
Sweden	1405	1592	2997	1261	1446	2707	842	1034	1876	976	1131	2107
Netherlands	1348	1522	2870	1203	1412	2615	996	1176	2172	1245	1525	2770
Spain	991	1363	2354	1000	1182	2182	900	1114	2014	1652	1962	3614
Italy	1126	1382	2508	1341	1586	2927	1126	1335	2461	1655	1951	3606
France	1368	1684	3052	1255	1596	2851	1039	1333	2372	2537	3215	5752
Denmark	757	858	1615	1165	1368	2533	941	1134	2075	1079	1256	2335
Greece	1241	1439	2680	1393	1687	3080	1273	1592	2865			
Switzerland	457	504	961	640	785	1425	552	706	1258	1689	1981	3670
Belgium	1723	1976	3699	1422	1663	3085	1252	1516	2768	2374	2863	5237
Israel	1136	1362	2498									
Czechia				1184	1565	2749	787	1055	1842	2576	3419	5995
Poland				1071	1354	2425	848	1043	1891	839	1028	1867
Ireland				512	595	1107						
Hungary										1314	1683	2997
Portugal										886	1123	2009
Slovenia										1194	1522	2716
Estonia										2652	3848	6500
Total	*13700*	*16325*	*30025*	*15173*	*18362*	*33535*	*11753*	*14485*	*26238*	*25632*	*32278*	*57910*

Source: SHARE Wave 1 Release 2.5.0, Wave 2 Release 2.5.0, Wave 3 Release 1, Wave 4 Release 1

[6] No new refreshment sample was introduced in Wave 3.
[7] More detailed information about the post-calibration procedure can be found in Deville and Särndal (1992).

SHARE questionnaire is made up of 2 main components: Coverscreen and the main questionnaire. Coverscreen provides the whole list of household members and is used to determine the eligible members to participate in the main questionnaire which is only asked to these eligible members (Das *et al*., 2005).

SHARE questionnaire is composed of various modules covering wide range of areas which are demonstrated in Table 3.

Table 3. CAPI Modules in 4 Waves of SHARE

CAPI Modules			
Coverscreen (CV)	Mental Health (MH)	Children (CH)	Consumption (CO)
Demographics (DN)	Health Care (HC)	Social Support (SP)	Assets (AS)
Physical Health (PH)	Employment and Pensions (EP)	Financial Transfer (FT)	Activities (AC)
Behavioral Risks (BR)	Grip Strength (GS)	Housing (HO)	Expectations (EX)
Cognitive Function (CF)	Walking Speed (WS)	Household Income (HH)	Interviewer Observations (IV)
New Modules in Wave 2			
Chair Stand (CS)	Peak Flow (PF)	End-of-Life Interview (XT)	
New Modules in Wave 4			
Social Networks (SN)			
Modules in Wave 3			
Accommodation (AC)	Childhood Health Care (HC)	Partner (RP)	Work History (RE)
Childhood (CS)	Childhood Health (HS)	Grip Strength (GS)	Demographics (ST)
Disability (DQ)	Interviewer (IV)	Work Quality (WQ)	
General Life Questions (GL)	Retrospective Children (RC)	End-of-Life Interview (XT)	

4 modules are used to construct our dataset:

1. Coverscreen (CV) module is the beginning of the interview and answered by one respondent per household. Coverscreen includes questions in the household level and provides information on the age, gender, marital status of all the individuals living in the household. According to the information from this module, individuals who are eligible (age eligibility) for the main interview are determined.

2. Demographics (DN) module provided us information on the highest educational degree obtained by the respondent. Education requires special attention in

terms of international comparability. Therefore, SHARE uses the 1997 International Standard Classification of Education ISCED-97[8] for the categorization of education. Country teams designed the ISCED coding for each country and SHARE education questions were routed to respective ISCED-97 codes by these country teams (MEA, 2011).

3. Children (CH) module presents detailed information on children and grandchildren. We obtained the information on the number of children living in the same household with the respondent from the CH module.

4. Employment and Pensions (EP) module includes great variety of information on the current job status of the respondent as well as the job characteristics, terms of the job, total hours worked per week, job satisfaction, frequency, amount and sources of payments and pensions, opportunities to work past retirement age.

4.2. Variables

Employment status: Current job situation is questioned in Employment and Pensions (EP) Module in Waves 1, 2 and 4 with the question *"In general, how would you describe your current situation?"* We used this question for the determination of the current employment status of the respondent, which is the dependent variable of our analysis. Answers are classified under 6 main categories: retired, employed or self-employed, unemployed, permanently sick or disabled, homemaker and other[9]. We dichotomize this variable as being currently *employed* and currently *not employed*. Retired, unemployed, permanently sick or disabled, homemaker and other are grouped together under the *not employed* category. Currently *employed* means respondent was actively participating in the labour market at the time of the interview. Currently *not employed* means respondent was not actively participating in the labour market because either he/she was retired or unemployed or permanently sick or disabled or homemaker or because of

[8] For detailed information on ISCED coding, see: http://www.uis.unesco.org/Library/Documents/isced97-en.pdf
[9] Being a rentier, living off own property, student, voluntary work are included under *other* category.

another reason specified. Our dichotomous dependent variable takes the value 1 if the respondent is *employed* and 0 if he/she is *not employed*.

Structure of the 3rd Wave of SHARE: SHARELIFE is different than the aforementioned waves, since it aims at collecting information on the retrospective life histories of the respondents. Employment History (RE) Module embraces a wide range of questions starting from the very first job of the respondent straight after leaving full-time education, followed by the subsequent changes in the working situations, timings and reasons of these changes, description of all previous jobs, industries, part time/full time and public sector/private sector distinctions, monthly wages earned in each of these jobs as well as questions regarding gaps between employed periods. Current employment status of the respondent is not explicitly questioned in SHARELIFE. Therefore, dichotomous employment variable is created by using questions about *year stopped in this job*[10]. Following answers provided for these successive questions, we tracked if the respondent is still employed or already left his/her job and fell into the category of *not employed*[11].

In addition to the respondents who are aged 50 and over, SHARE provides information about the partners of the respondents regardless of their age. This information is provided in the Coverscreen (CV) Module of each wave. However, we excluded these individuals who are under the age of 50 and created 7 age-groups of 5 years each: 50-54, 55-59, 60-64, 65-69, 70-74, 75-79 and 80+ to avoid zero or small cell problems for various ages.

Country, gender and marital status variables are also extracted from the CV module. Country variable has 10 levels which are the countries included in 4 waves of SHARE survey. Reference category for the analysis is Netherlands. Gender is a binary variable with *male* and *female* levels. We also dichotomized marital status variable bringing living with a partner and living with a spouse categories together: *single* and being *non-single*.

[10] A special code was assigned if the respondent is still in this job under question.

[11] We are aware of the fact that dealing with retrospective data could be challenging because of the recall biases. In SHARELIFE, as people over 50 are covered, the problem appears to be even more significant. In SHARELIFE, recall bias is tried to be handled by the use of Event History Calendars approach (Schroder, 2011).

In SHARE, the highest educational degree obtained and further education/vocational training are asked in two different questions in the baseline interview. Education is assumed to be among the information not changing over time and therefore asked only the first time the respondent is interviewed, in the baseline interview[12]. Hence, if educational attainment of the respondent has already been questioned in the first or second wave, this question was not asked again in the 4th Wave. This results in high percentage of missing values for the highest educational degree attained variable in the 4th Wave. Hence, baseline interview information was extracted from either Wave 1 or Wave 2 - depending on which wave was the baseline interview and merged with Wave 4 information. We finally categorized education under 3 main groups: “primary” (ISCED 0 to 3), “secondary” (ISCED 4 to 5) and “higher” (ISCED 6).

Our last variable is constructed to measure the effect of having children living in the same household on respondent’s employment behavior. In Wave 1, 2 and 4, this information is obtained for each child with the question: *Where does child n live?* Categories are: In the same household, in the same building, less than 1 km away, between 1 and 5 km away, between 5 and 25 km away, between 25 and 100 km away, between 100 and 500 km away, more than 500 km away, more than 500 km away in another country. Albeit the detailed information provided within this question, we concentrated on having a child living in the same household, expecting a strong effect on the employment decisions of the respondents. Therefore, we dichotomized this variable as *having no children in the same household* and *having at least one child living in the same household* with the respondent. Although comprehensive retrospective information regarding all alive or dead children is gathered in Wave 3, where children live or used to live is not questioned. So, for the 3rd Wave, we constructed this variable gathering information from the previous waves.

[12] For further information see:
http://www.share-project.org/fileadmin/pdf_documentation/SHARE_wave_4_release_guide_1.1.1.pdf

4.3. Methodology

For our analyses, 4 waves of SHARE are pooled together and a panel of almost one decade, from 2004 to 2011, is created. Ten countries which participated in all of the waves are included in our analyses. We introduce these 10 countries into our model individually, being aware of the complexity of the European welfare states and that a clear cut distinction fails to explain the divergences in Europe[13].

Our analyses have two levels, observations nested in individuals. We have an unbalanced panel data with up to four observations for each individual, ranging from one to four observations for each individual. This is a consequence of panel mortality and attrition. Also new individuals appear in the panel since refreshment samples are introduced in 2nd and 4th waves. Hence, we fit a generalized linear mixed-effects model with nested observations in individuals. Our Level 1 sub-model showing the individual growth can be written as:

$$emp_{ij} = \pi_{0i} + \pi_{1i}\, year_{ij} + \varepsilon_{ij}$$

Where,

emp_{ij} is individual i's probability of being employed on occasion j

π_{0i} is individual i's true initial status of employment (when year_{ij} is 0)

π_{1i} is individual i's true rate of change during the period under study

ε_{ij} is the portion of individual i's outcome that is unpredicted on occasion j

[13] Borsc-Supan (2007), scrutinizing the size and the generosity of the European States towards elderly, concludes that Esping-Andersen (1990)'s clustering of welfare states is too simplistic to elucidate the European context. He rather puts emphasis on the diverging demographic forces of population ageing and political preferences and the prevalence of incentive effects in various European countries. He argues that these incentive effects lead to increased demand for social expenditures towards the elderly via early retirement and disability benefits.

Level 2 sub-model equations, representing the inter-individual differences in change, are as follows:

$$\pi_{0i} = \gamma_{00} + \gamma_{01} country_i + \gamma_{02} age_i + \gamma_{03} educ_i + \gamma_{04} mstat_i + \gamma_{05} gender_i + \gamma_{06} child.hh_i + \omega_{0i}$$

$$\pi_{1i} = \gamma_{10} + \gamma_{11} country_i + \gamma_{12} age_i + \gamma_{13} educ_i + \gamma_{14} mstat_i + \gamma_{15} gender_i + \gamma_{16} child.hh_i + \omega_{1i}$$

γ_{00} and $\gamma_{10}$are the level-2 intercepts representing the whole population's average initial status and rate of change respectively. γ_{01},γ_{02}, γ_{03}, γ_{04}, γ_{05}, γ_{06} are the level-2 slopes representing the effects of the covariates on change trajectories providing increments or decrements to the initial status. γ_{11}, γ_{12}, γ_{13}, γ_{14}, γ_{15}, γ_{16} are the level-2 slopes representing the rates of change. ω_{0i} and ω_{1i} are the level-2 residuals representing the portions of initial status and rate of change unexplained at level-2. They represent deviations of the individual change trajectories around their respective group average trends (Singer and Willet, 2003). ε_{ij}, ω_{0i} and $\omega_{1i}$are normally distributed with zero means, independent of one another, ω_{0i} and ω_{1i} being independent across individuals and ε_{ij} being independent across individuals and occasions (Rabe-Hesketh and Skrondal, 2005). Therefore, emp_{ij} depends on the Level-1 predictor ($year_{ij}$) and the Level-2 predictors: country($country_i$), age (age_i), educational attainment ($educ_i$), marital status ($mstat_i$), gender ($gender_i$), having children living in the same household ($child.hh_i$).

5. Results

Before presenting the results of our models, we introduce some descriptive results derived from the 1st Wave of SHARE. We chose to use Wave 1 for the descriptive analyses given that it is the starting point of the panel and it has not been yet affected by attrition as the subsequent waves.

Figure 1 presents a snapshot of the current employment situation of males and females aged 50 and over in 3 European countries: Spain, Germany and Sweden. We constructed 5 age-groups: 50-54, 55-59, 60-64, 65-69 and 70+, given our interest in the effects of age on the decisions regarding the permanence in the labour market. The last group includes individuals aged 70+ because as it can be seen in the figure at this age the percentage employed falls below 10 percent. Figure 1 clearly shows also the employment gap observed between females and males in the selected countries. This gap is most significant in Spain where employment rates of females are at very low levels even in our younger age-groups and yet continues falling further with age. In Germany, this gap is less significant compared to Spain in all age- groups. Sweden represents a clear departure from this trend having almost the same percentages of females and males employed at each age. Only a small difference is observed in the earlier ages, but even then proportions employed are higher compared to Spain and Germany and these high levels are sustained until the age of 65. Even after this age decline is not as drastic as it is observed in Germany or Spain.

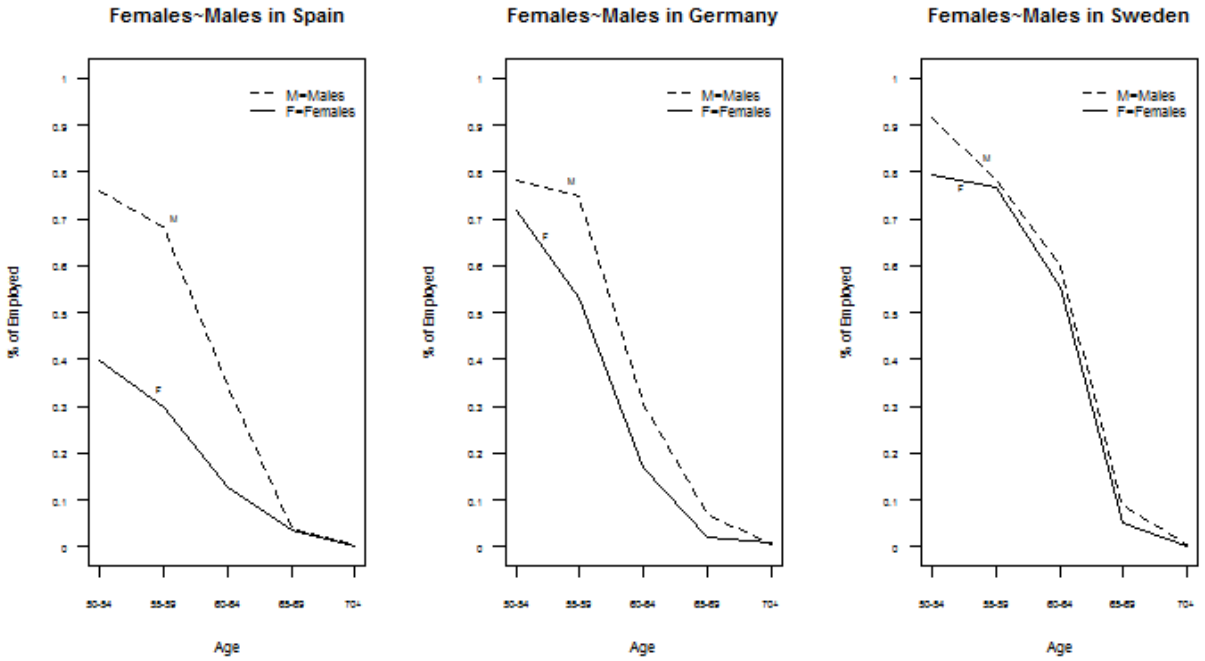

Figure.1. Percentage of Employed Females and Males in Spain, Germany and Sweden by Age

According to Eurostat figures, presented in Table 4, the employment rate for the age-group 15+ shows an increasing trend during the expansion period of 2004-2008 but returns back to the levels of 2004 due to the economic crises hitting the labour markets of almost all European countries. Eurostat figures reveal that the strongest adverse effects of the crisis have been felt on the youngest age-groups of the working-age population. In most European countries employment rates fell far below the levels experienced in 2004 and this fall was experienced even more dramatically in some countries such as Spain and Italy.

Table 4. Employment Rates by Main Age-Groups

	15+			15-24			50+		
Countries	2004	2008	2012	2004	2008	2012	2004	2008	2012
EU 27	51.3	53.5	51.7	35.7	37.4	32.9	29.1	32	33.2
EU 15	52.2	54	52.1	39.5	40.8	35.5	29.3	31.9	33.4
Belgium	48.2	49.9	49.2	28.1	27.4	25.3	22.7	26.1	28.7
Denmark	62.5	63.7	58.4	61.3	66.4	55	40.4	40.1	38.6
Germany	50.8	54.8	56.8	41.3	46.6	46.6	28.4	32.9	37.6
Spain	49.4	52.4	44.5	34.7	36	18.2	25.4	28.6	27.4
France	51.2	52.3	51.1	29.3	31.3	28.8	28.4	29.5	31.6
Italy	45.7	45.9	44	27.6	24.4	18.6	22.6	24.6	26.7
Netherlands	61.9	64.7	61.8	66.2	69.3	63.3	34.8	39.1	40.2
Austria	54.5	58.8	58.8	49.9	55.9	54.6	24.3	31.2	33.5
Sweden	58.4	59.9	58.8	39.5	42.2	40.2	41.7	42.4	42.2
Switzerland	64.4	65.9	65.3	61.9	62.4	61.7	42.4	44.5	45.4

Source: Eurostat

On the other hand, according to the Eurostat data, employment rates of those aged over 50 appear to be less affected by the crisis. Both in the EU-27 and EU-15 employment levels appear to be sustaining its increasing trend from 2008 to 2012. Albeit cross country divergences, in almost all European countries an increase is observed in 2012 compared to 2008 levels. Even in the countries experiencing lower levels of employment compared to 2008, this decline is rather small, never falling below 2004 levels.

Table 5 presents the cross country divergences between male and female employment rates of individuals aged 50 and over for 2008 and 2012. Although female employment

rates are at lower levels in comparison with that of men, women are observed to be less affected by the economic crisis.

Table 5. Employment Rates of (50+) by Age

	Males		Females	
Countries	2008	2012	2008	2012
EU 27	39.8	39.8	25.4	27.5
EU 15	39.5	39.8	25.5	27.9
Belgium	33.8	35.3	19.5	22.9
Denmark	46.9	44.0	34.0	33.6
Germany	39.4	43.7	27.3	32.2
Spain	38.9	33.8	19.8	22.0
France	33.7	35.6	26.0	28.2
Italy	34.3	35.4	16.5	19.3
Netherlands	48.1	48.1	30.9	32.8
Austria	39.3	40.7	24.4	27.3
Sweden	47.8	46.9	37.6	37.9
Switzerland	53.2	54.3	36.9	37.5

Source: Eurostat

The findings from our multivariate analyses are in line with the figures of EUROSTAT, although SHARE data does not allow making comparisons between the older age workers and the younger groups of the working-age population. We fit a generalized linear mixed model in R to capture how employment of older workers evolved over time (2004 to 2012). Our reference category is 2004/2005 (1st Wave of SHARE). Country, age, education, gender, marital status, having children living in the same household are the additional covariates included in our model.

According to the results from our model, which are presented in Table 6, employment rates of old-age workers increased not only in 2006/2007 and 2008/2009, but also in 2011/2012 compared to the reference year of 2004/2005. Since the coefficient for the year 2011/2012 was smaller than the coefficient for 2008/2009, we ran another model changing the reference year to 2008/2009 to test if this smaller coefficient could mean a decline in employment from 2008/2009 to 2011/2012. However, this model revealed that no significant change was experienced in 2011/2012 compared to 2008/2009

although the trend is negative. While coefficients for 2004/2005 and 2006/2007 changed their direction and turned out to be negative as expected, the effects of the year 2011/2012 did not show any significance, even at the 10 percent level. So, our data does not provide us with solid evidence of a negative impact of the economic crisis on the employment levels of older workers. Certainly, the 5th Wave of SHARE will give us the opportunity of testing this hypothesis more rigorously.

Table 6. Main Model Results

Generalized linear mixed model fit by the Laplace approximation

Formula:emp~year+country+age+educ+mstat+gender+child.hh+(1|mergeid)

Data: waves

AIC	BIC	logLik	deviance
49826	50011	-24892	49784

Random effects:

Groups	Name	Variance	Std.Dev.
mergeid	(Intercept)	13.27	3.6428

Number of obs: 50329, groups: mergeid, 28655

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	3.03233	0.12065	25.13	< 2e-16	***
year2006/2007	0.34352	0.05396	6.37	1.94E-10	***
year2008/2009	0.78189	0.06099	12.82	< 2e-16	***
year2011/2012	1.00578	0.06046	16.64	< 2e-16	***
countryaustria	-1.73078	0.13421	-12.9	< 2e-16	***
countryspain	-1.18382	0.13574	-8.72	< 2e-16	***
countrygermany	0.32885	0.13879	2.37	0.017817	*
countrysweden	3.30971	0.1471	22.5	< 2e-16	***
countryitaly	-1.61526	0.13444	-12.01	< 2e-16	***
countryfrance	-0.52541	0.12124	-4.33	1.47E-05	***
countrydenmark	1.6661	0.14421	11.55	< 2e-16	***
countryswitzerl	2.07372	0.14815	14	< 2e-16	***
countrybelgium	-1.06962	0.1208	-8.85	< 2e-16	***
age55-59	-1.71639	0.0577	-29.75	< 2e-16	***
age60-64	-5.35548	0.07377	-72.6	< 2e-16	***
educsecondary	0.28679	0.05225	5.49	4.06E-08	***
educhigher	1.0205	0.0639	15.97	< 2e-16	***
mstatsingle	-0.22535	0.07304	-3.09	0.002033	**
genderfemale	-1.80807	0.06211	-29.11	< 2e-16	***
child.hh1+	0.19518	0.0587	3.32	0.000884	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Our findings also reveal some cross country differences, the Netherlands being the reference category. Employment levels in Germany, Sweden, Switzerland and Denmark appear to be higher compared to the Netherlands and lower in France, Belgium, Austria, Spain and Italy. Regarding age, we see a significant decline in the employment levels when we move to the older age groups. According to our model results, educational attainment has significant positive effects on employment levels of old-age individuals. Both those with secondary education and those with higher education have significantly higher employment levels than those with only primary education. Moreover, our findings reveal that being single has a significant negative impact while having children living in the same household has a positive effect on the employment levels of old-age workers.

A crucial variable in our analysis is gender. Table 7 demonstrates the percentages of employed males and females by our main age groups. Lower female employment rates are observed for all age groups.

Table 7. Percentage of employed by main age groups

	TOTAL				MALES				FEMALES			
Age	2004/5	2006/7	2008/9	2011/2	2004/5	2006/7	2008/9	2011/2	2004/5	2006/7	2008/9	2011/2
(50-54)	0.72	0.76	0.74	0.76	0.82	0.85	0.86	0.84	0.63	0.69	0.68	0.70
(55-59)	0.55	0.60	0.66	0.65	0.66	0.70	0.75	0.71	0.46	0.52	0.58	0.59
(60-64)	0.24	0.30	0.32	0.30	0.30	0.36	0.39	0.37	0.19	0.24	0.27	0.25

Source: SHARE Wave 1 Release 2.5.0, Wave 2 Release 2.5.0, Wave 3 Release 1, Wave 4 Release 1

Employment levels of old-age workers are also affected by the cohorts they belong to and this cohort effect can serve to explain a part of the gap between the male and female employment levels. While a cohort effect exists both for males and females, it is more dominant in the case of female labour market participation. Table 8 displays the big gap between the employment levels of older and younger female cohorts. It is not only the fact that employment levels of younger female cohorts are higher than the employment levels of older female cohorts, but also the decline in employment levels of

older female cohorts in our period of analysis is more noticeable compared to younger female cohorts.

Table 8. Percentage of employed by cohorts

	TOTAL				MALES				FEMALES			
Cohorts	2004/5	2006/7	2008/9	2011/2	2004/5	2006/7	2008/9	2011/2	2004/5	2006/7	2008/9	2011/2
1940	0.14				0.19				0.09			
1941	0.16				0.20				0.13			
1942	0.25	0.15			0.33	0.17			0.19	0.13		
1943	0.27	0.18			0.34	0.22			0.21	0.15		
1944	0.33	0.25	0.21		0.40	0.32	0.30		0.27	0.19	0.14	
1945	0.47	0.30	0.24		0.51	0.35	0.29		0.44	0.27	0.20	
1946	0.49	0.37	0.27		0.60	0.46	0.33		0.38	0.29	0.20	
1947	0.54	0.42	0.31	0.17	0.66	0.51	0.38	0.23	0.44	0.36	0.26	0.12
1948	0.57	0.50	0.37	0.23	0.70	0.59	0.48	0.30	0.48	0.42	0.30	0.18
1949	0.64	0.55	0.49	0.30	0.75	0.63	0.53	0.33	0.55	0.48	0.44	0.26
1950	0.68	0.65	0.61	0.36	0.78	0.76	0.69	0.44	0.58	0.54	0.54	0.29
1951	0.70	0.68	0.62	0.46	0.83	0.80	0.71	0.53	0.60	0.59	0.55	0.40
1952	0.71	0.74	0.67	0.57	0.82	0.83	0.77	0.65	0.61	0.66	0.57	0.51
1953	0.75	0.76	0.73	0.61	0.83	0.83	0.83	0.66	0.68	0.69	0.65	0.56
1954	0.72	0.74	0.73	0.64	0.81	0.83	0.82	0.69	0.66	0.66	0.66	0.60
1955	0.65	0.75	0.73	0.67	0.78	0.87	0.85	0.76	0.63	0.67	0.66	0.61
1956		0.78	0.79	0.73		0.88	0.88	0.80		0.71	0.73	0.68
1957		0.72	0.69	0.73		0.82	0.86	0.84		0.70	0.65	0.66
1958			0.75	0.75			1.00	0.82			0.71	0.72
1959			0.70	0.76			1.00	0.83			0.67	0.70
1960				0.78				0.84				0.74
1961				0.73				0.93				0.70

Source: SHARE Wave 1 Release 2.5.0, Wave 2 Release 2.5.0, Wave 3 Release 1, Wave 4 Release 1

We run separate models for females and males in order to capture the gender difference. Our results for these two sub-groups are presented in Tables 9 and 10. As it can be seen in Table 10, employment levels of females display an increase in 2011/2012 period. This increase in the female labour participation rates can be attributed to the aforementioned increase in the female labour force participation throughout years.

Table 9. Model Results for Males

Generalized linear mixed model fit by the Laplace approximation

Formula:emp~year+country+age+educ+mstat+child.hh+(1|mergeid)

Data: female

AIC	BIC	logLik	deviance
27559	27723	-13759	27519

Random effects:

Groups	Name	Variance	Std.Dev.
mergeid	(Intercept)	13.524	3.6775

Number of obs: 27881, groups: mergeid, 15705

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	0.737012	0.150423	4.9	9.6E-07	***
year2006/2007	0.431118	0.073167	5.89	3.81E-09	***
year2008/2009	0.868375	0.081687	10.63	< 2e-16	***
year2011/2012	1.295563	0.081423	15.91	< 2e-16	***
countryaustria	-1.597248	0.182042	-8.77	< 2e-16	***
countryspain	-1.820354	0.188359	-9.66	< 2e-16	***
countrygermany	0.745227	0.187245	3.98	0.0000689	***
countrysweden	3.92785	0.196041	20.04	< 2e-16	***
countryitaly	-2.001657	0.18681	-10.71	< 2e-16	***
countryfrance	0.214085	0.162877	1.31	1.89E-01	
countrydenmark	2.17549	0.194907	11.16	< 2e-16	***
countryswitzerl	2.06779	0.191976	10.77	< 2e-16	***
countrybelgium	-0.684752	0.163667	-4.18	0.0000287	***
age55-59	-1.710651	0.072715	-23.53	< 2e-16	***
age60-64	-5.166329	0.098302	-52.56	< 2e-16	***
educsecondary	0.226064	0.069685	3.24	1.18E-03	**
educhigher	1.009714	0.085463	11.81	< 2e-16	***
mstatsingle	0.356616	0.094422	3.78	0.000159	***
child.hh1+	0.007119	0.078388	0.09	0.927639	

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Table 10. Model Results for Females

Generalized linear mixed model fit by the Laplace approximation

Formula:emp~year+country+age+educ+mstat+child.hh+(1|mergeid)

Data: female

AIC	BIC	logLik	deviance
27559	27723	-13759	27519

Random effects:

Groups	Name	Variance	Std.Dev.
mergeid	(Intercept)	13.524	3.6775

Number of obs: 27881, groups: mergeid, 15705

Fixed effects:

	Estimate	Std. Error	z value	Pr(>|z|)	
(Intercept)	0.737012	0.150423	4.9	9.6E-07	***
year2006/2007	0.431118	0.073167	5.89	3.81E-09	***
year2008/2009	0.868375	0.081687	10.63	< 2e-16	***
year2011/2012	1.295563	0.081423	15.91	< 2e-16	***
countryaustria	-1.597248	0.182042	-8.77	< 2e-16	***
countryspain	-1.820354	0.188359	-9.66	< 2e-16	***
countrygermany	0.745227	0.187245	3.98	0.0000689	***
countrysweden	3.92785	0.196041	20.04	< 2e-16	***
countryitaly	-2.001657	0.18681	-10.71	< 2e-16	***
countryfrance	0.214085	0.162877	1.31	1.89E-01	
countrydenmark	2.17549	0.194907	11.16	< 2e-16	***
countryswitzerl	2.06779	0.191976	10.77	< 2e-16	***
countrybelgium	-0.684752	0.163667	-4.18	0.0000287	***
age55-59	-1.710651	0.072715	-23.53	< 2e-16	***
age60-64	-5.166329	0.098302	-52.56	< 2e-16	***
educsecondary	0.226064	0.069685	3.24	1.18E-03	**
educhigher	1.009714	0.085463	11.81	< 2e-16	***
mstatsingle	0.356616	0.094422	3.78	0.000159	***
child.hh1+	0.007119	0.078388	0.09	0.927639	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

6. Discussion

The changing age structure of the European labour market as a consequence of the ageing process and labour market participation rates of old-age workers are examined in this paper. Cross-country differences regarding employment levels of European countries are explored by using SHARE data. Longitudinal nature of SHARE also allowed us to analyze how employment levels of older workers evolved over the last decade. Four waves of SHARE are pooled together and a generalized linear mixed model is fit to analyze the evolution of old age employment from 2004 to 2012. We also fit separate models for males and females, to shed some light on the gender differences.

Our hypothesis with respect to the time dimension was that employment levels of old-age workers have not experienced a significant decline for the period 2004 to 2012. Our findings from the multivariate analyses support this hypothesis. We find a significant increase not only in 2006/2007 and 2008/2009, but also in 2011/2012 compared to the levels of 2004/2005. Therefore, we conclude that our data does not provide us with solid evidence of a negative impact of the economic crisis on the employment levels of older workers. Our findings also show significant cross country differences in employment levels of workers aged 50 and over. Germany, Sweden, Switzerland and Denmark emerged as the four countries with the highest employment levels for almost all age-groups.

SHARELIFE provides retrospective data regarding lifelong employment patterns of the respondents in addition to comprehensive information available on demographic and socio-economic characteristics which are crucial for understanding the mechanisms behind the retirement and employment decisions of individuals. This rich information could be exploited to a greater extent by event history analysis and brought together with the subsequent waves in order to present a sectoral analysis of old age employment with a time dimension and in order to analyze the intergenerational occupational change between the older cohorts and the younger cohorts. Integrating

cohort effect into our analysis will allow us to further analyze the differences in the labour market participation levels of males and females.

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Appendix

Table 1: Evolution of Population Age Structure in Europe between 1992 and 2012

	0-15 years old		15-64 years old		65+ years old	
Countries	1992	2012	1992	2012	1992	2012
EU (27 countries)	19.0	15.6	66.9	66.6	14.1	17.8
Euro area (15 countries)	17.8	15.4	67.6	65.9	14.6	18.8
Belgium	18.2	17.0	66.6	65.7	15.2	17.3
Bulgaria	19.6	13.4	66.6	67.8	13.8	18.8
Czech Republic	20.6	14.7	66.7	69.1	12.8	16.2
Denmark	16.9	17.7	67.5	65.0	15.6	17.3
Germany	16.3	13.2	68.7	66.1	15.0	20.6
Estonia	22.0	15.5	66.0	67.3	12.0	17.2
Ireland	26.3	21.6	62.3	66.5	11.4	11.9
Greece	18.8	14.4	67.1	65.9	14.1	19.7
Spain	18.8	15.2	67.1	67.4	14.1	17.4
France	20.2	18.6	65.6	64.3	14.2	17.1
Italy	15.4	14.0	69.1	65.3	15.5	20.6
Cyprus	25.6	16.5	63.4	70.7	11.0	12.8
Latvia	21.5	14.3	66.2	67.1	12.3	18.6
Lithuania	22.5	14.9	66.3	67.0	11.3	18.1
Luxembourg	17.7	17.1	68.8	68.9	13.5	14.0
Hungary	19.5	14.5	66.9	68.6	13.6	16.9
Malta	23.0	14.7	66.3	68.8	10.6	16.5
Netherlands	18.3	17.3	68.8	66.5	13.0	16.2
Austria	17.6	14.5	67.4	67.7	14.9	17.8
Poland	24.6	15.1	65.1	71.1	10.3	13.8
Portugal	19.4	14.8	66.7	65.8	13.9	19.4
Romania	22.7	15.0	66.3	70.0	11.0	15.0
Slovenia	20.1	14.3	68.9	68.9	11.1	16.8
Slovakia	24.6	15.4	65.0	71.8	10.4	12.8
Finland	19.2	16.5	67.2	65.4	13.6	18.1
Sweden	18.2	16.7	64.0	64.5	17.7	18.8
United Kingdom	19.3	17.5	65.0	65.6	15.8	16.9
Norway	19.0	18.5	64.7	66.1	16.3	15.4
Switzerland	17.2	15.0	68.2	67.8	14.6	17.2

Source: EUROSTAT

Table 2: Mandatory and Pensionable Age in Europe

Countries	Mandatory Age for Retirement	Pensionable Age
AUSTRIA	None in private sector. 61.5 for civil servants in the existence of official reasons.	65 for men and 60 for women in private sector and 61.5 in public sector.
BELGIUM	None in private sector. 65 for public sector.	65 for both men and women. Some specific age limits apply in specific sectors. After age 60, workers satisfying 35 years of employment can be pensioned.
DENMARK	None in private sector. 70 for public sector.	65. Age determined pension.
FRANCE	None in private sector. 65 for public sector.	60-65, depending on number of years of contribution at 60 and fully payable after 65 independent of contributions.
GERMANY	None in private sector. Many professions have specific retirement ages in law.	67 for born after 1964. Reduced pension after 63 provided 35 years or more of work
ITALY	65 for men and 60 for women both in public and private sectors. Women can postpone until 65. Some sectors have specific regulations as well.	65 for men and 60 for women. However, women can retire at the same age as men.
NETHERLANDS	None. Only some professions have some age limitations.	65, regardless of whether the person has had a job or not
SPAIN	None in private sector. 65 for public servants, 72 for judges and 70 for publicly employed university professors.	65, early retirement is available at the age of 61, if certain requirements are met.
SWEDEN	None in public and private sectors.	61-65, based on principle of lifelong earnings. Therefore, postponement of retirement adds to the pension benefits.

Table 3: Evolution of the age structure of SHARE sample

Country	Wave	50-64	65+	Total	%(50-64)	%(65+)
netherlands	2004/2005	1693	1177	2870	0.59	0.41
	2006/2007	1478	1137	2615	0.57	0.43
	2008/2009	1038	1057	2095	0.50	0.50
	2011/2012	1325	1386	2711	0.49	0.51
germany	2004/2005	1569	1373	2942	0.53	0.47
	2006/2007	1245	1282	2527	0.49	0.51
	2008/2009	771	1011	1782	0.43	0.57
	2011/2012	589	939	1528	0.39	0.61
sweden	2004/2005	1589	1408	2997	0.53	0.47
	2006/2007	1294	1413	2707	0.48	0.52
	2008/2009	696	1121	1817	0.38	0.62
	2011/2012	601	1337	1938	0.31	0.69
austria	2004/2005	949	900	1849	0.51	0.49
	2006/2007	544	778	1322	0.41	0.59
	2008/2009	278	500	778	0.36	0.64
	2011/2012	2497	2614	5111	0.49	0.51
spain	2004/2005	1079	1275	2354	0.46	0.54
	2006/2007	958	1224	2182	0.44	0.56
	2008/2009	740	1116	1856	0.40	0.60
	2011/2012	1445	2049	3494	0.41	0.59
italy	2004/2005	1342	1166	2508	0.54	0.46
	2006/2007	1365	1562	2927	0.47	0.53
	2008/2009	995	1406	2401	0.41	0.59
	2011/2012	1537	1980	3517	0.44	0.56
france	2004/2005	1627	1425	3052	0.53	0.47
	2006/2007	1518	1333	2851	0.53	0.47
	2008/2009	1092	1242	2334	0.47	0.53
	2011/2012	2837	2819	5656	0.50	0.50
belgium	2004/2005	1947	1752	3699	0.53	0.47
	2006/2007	1615	1470	3085	0.52	0.48
	2008/2009	1239	1485	2724	0.45	0.55
	2011/2012	2785	2364	5149	0.54	0.46
denmark	2004/2005	916	699	1615	0.57	0.43
	2006/2007	1409	1124	2533	0.56	0.44
	2008/2009	1051	988	2039	0.52	0.48
	2011/2012	1177	1042	2219	0.53	0.47
switzerland	2004/2005	505	456	961	0.53	0.47
	2006/2007	770	655	1425	0.54	0.46
	2008/2009	578	623	1201	0.48	0.52
	2011/2012	1825	1810	3635	0.50	0.50