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## Pathways to Retirement in Europe: Individual Determinants and the Role of Social Protection

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In Europe, the pathways to retirement are determined by individual factors such as age, gender, education level and health status, and contextual factors such as family and professional environments. In addition to these usual explanatory factors, this analysis equally focuses on the role of social protection systems. It demonstrates that European disparities in the employment rate of older workers, varying from 34% in Italy to 70% in Sweden, can largely be explained by the complementary and combined effects of the three facets of social protection: employment, pensions, disability.

Any public policy aiming to increase the workforce participation of older citizens in Europe should therefore take into account not only the complexity of individual determinants influencing the retirement decision, but also the interactive effect of all social protection categories and not simply those relating to pensions.

One of the key structural weaknesses observed in European labour markets is the low employment rate of older workers. It has led European Union member states to assert their intention to reach a 50% employment rate for citizens aged between 55 and 64 by 2010. The latest Eurostat statistics appear to corroborate this since the employment rate has risen on average from 36% in 1997 to 45% in 2007. Despite a common trend towards higher employment, this average increase however masks extremely heterogeneous cross-country situations. The employment rate has already exceeded the set goals in certain countries such as Sweden (70%), Denmark (59%), the United Kingdom (57%) and Germany (52%). Other countries, on the contrary, record significantly lower rates such as

Austria (39%), France (38%), Belgium and Italy (34%).

These variations in employment rate can be explained by two different factors: on the one hand, a deficiency in demand due to economic constraints on industry, and on the other, the labour supply of older workers. In the latter case, disparities in the employment rate are largely determined by personal choices related to health status, the family environment, labour market structure or institutional differences from one country to the next. This analysis fits in the framework of research on labour supply.

More specifically, the determinants of labour force participation and pathways to retirement in older workers are analysed in terms of both 'stocks' (labour force

participation) and 'flows' (withdrawal from the labour market to retirement). In addition to the usual explanatory factors such as individual and household characteristics, the role of social protection systems in the broadest sense of the term will equally be examined. To date, labour supply analyses essentially focus on individual determinants or provide a partial analysis based on the influence of one social protection system such as pensions [Blanchet, Debrand, 2007] or disability [Börsch-Supan, 2007]. The influence of one single social protection system on the retirement decision is, however, questionable. Unemployment and disability constitute alternative means of withdrawing from the labour market prior to the eligible retirement age. The complementarity of these alternative means of withdrawing from

the labour market (unemployment, disability, retirement) suggests that the different social protection systems should be approached as an interacting whole.

To carry the analysis through to a successful conclusion, data sets from the first two waves of SHARE (2004-2006) were used and completed by macro-economic data sets describing three social protection systems common to all European countries: systems relating to labour and unemployment, those relating to sickness and disability, and those relating to retirement and pensions.

### Current literature presents three major dimensions

The determinants influencing the labour force participation of older workers are generally classified in financial or non-financial terms. Given the variety of determinants influencing the retirement decision, they are grouped here into three domains: individuals' characteristics (personal data), individuals' immediate environment (contextual data) and finally, the social protection system currently in force in the country concerned (institutional data). These domains are naturally interactive: there are no strict borderlines and determinants can therefore belong to any one or other of the three groups.

#### Individual determinants: health status and anticipated life expectancy in core position

Among the most commonly used factors to explain individual retirement decisions such as age, nature and level of education, health status is a major determinant. Several empirical studies point out that health status, and more particularly disability, is one of the determinant variables in the labour force participation of older workers [Currie, Madrian, 1999]. If the relationship between health status and labour supply appears obvious, understanding causality can nevertheless prove complex if not ambiguous. Two effects appear to simultaneously play in opposite directions: work conditions can be the source of health deterioration at

the end of the working cycle and at the same time, poor health can be the cause of withdrawal from the labour market.

Anticipated life expectancy is another indicator with an idiosyncratic effect on the retirement decision. Economic theory postulates that through a certain number of mechanisms, this indicator modifies individual behaviour in the face of retirement: a wealth effect at the end of the life cycle, an uncertainty effect on savings and an effect related to the risk of longevity. Several studies reveal that individuals have quite a precise idea regarding their probability of survival and adjust their retirement decision accordingly. Other expectations can equally influence the retirement decision such as anticipated pension reforms in a near fut.

#### Contextual determinants: the weight of family context and professional environment

Factors defined as 'contextual' are extremely varied but all attempt to describe the interactions between an individual's personal situation and their immediate environment. Here, the contextual domain refers to the relationship between salaried employees and their immediate environment: family context and working conditions.

In the retirement decision, family context plays an important role that is well illustrated by the problem of coordinating projected retirement dates between spouses. In a household, the decision to retire is rarely taken independently. The preference for 'leisure' has greater value if the spouse has already withdrawn from the labour market. Household revenue permitting, it would appear logical that a couple seek to coordinate their retirement dates. Other social constraints can also weigh on and influence individual retirement decisions, notably a spouse's or other family member's health status. Having to care for a dependent member of the family thus tends to have a positive impact on the retirement decision.

The second contextual effect concerns the relationship between health and working conditions. Various analyses thus

## BACKGROUND

SHARE, European data base on health and ageing is an international research infrastructure recognised by the European Community. In each participating country, the survey is supervised by researchers or universities. In France, the survey is jointly conducted by the Irdes and Insee.

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highlight the impact of working conditions on health status [Karasek, Theorell, 1990; Siegrist, 1996]. Moreover, over the last thirty years, European countries have been faced with a deep transformation of their production base creating a source of anxiety for employees and more particularly older employees. This has been accentuated by the current economic crisis affecting all western economies.

#### Institutional determinants: the role of social protection systems

Even if there is some convergence regarding public policy and the legislative and regulatory frameworks governing social protection in Europe, each system nevertheless remains distinct by virtue of its historical context, government priorities and also the apprehension country's residents can feel regarding forthcoming reforms.

In the 1980s and 1990s, European countries set up early retirement systems as part of an employment policy aimed at countering the threat of mass unemployment and absorbing the shock of industrial restructuring in the modernisation of its production base. Confronted with the failure of this employment policy and the costs it generated, collective early retirement schemes were progressively abandoned. New 'individualised' schemes such as disability pensions and schemes allowing early retirement for health reasons were introduced. Initially designed as benefits to compensate against a deteriorated health status, they do not, however, always benefit the entire population in poor health. Entitlement criteria effectively differ significantly

throughout Europe and correspond to institutional differences rather than real differences in health status.

Existing literature analysing the impact of social protection systems on retirement decisions essentially focuses on financial determinants, or in other words, the different rights acquired through age, gender, salary, etc. Whether it concerns pensions or disability schemes, financial considerations can affect retirement decisions. For example, explicative models of the work to retirement transition frequently refer to a choice between 'leisure' and work influenced by pension amount (at the replacement rate) and expected pension wealth during retirement [Gruber, Wise, 1998]. The labour supply of older workers can also be affected by disability schemes [Börsch-Supan, 2007] where the amount and duration of benefits granted on disability can be equivalent to a salary.

Legal or statutory eligibility must, however, be taken into account in both pension and disability systems: for example, the statutory retirement age, health criteria defining disability, etc. A third system, relating to employment protection and unemployment may equally intervene in the retirement decision. If numerous studies focus on one or other of these social protection systems, no study to date simultaneously takes into account the interactive influence of all three systems.

### Key findings from SHARE (2004-2006)

#### Specific characteristics of workers who made the transition from work to retirement between 2004 and 2006

A reading of the first series of descriptive statistics (table 1) reveals differences

between workers who retired between 2004 and 2006 and those who were still working in 2006. The retirement set concerns more men, more individuals in the older age range, more public sector employees and less self-employed workers, more couples (especially those in which the spouse is not in paid employment), more employees declaring relatively poor job satisfaction and individuals with a poorer health status. If we look anticipated life-expectancy, there equally appears to be a difference between individuals still working and those that have retired.

#### Labour force participation and the retirement decision: the weight of individual and contextual factors

Determinants influencing labour force participation and withdrawal from the labour market are numerous and multi-dimensional. **Concerning the labour force participation of older workers, the analyses**, all other things being equal, reveal the influence of the usual determinants (table 2). At individual level, the probability of being employed logically decreases with age and increases significantly the higher an individual's level of education and among the self-employed. The paramount influence of health status is confirmed since individuals self-reporting good health have a higher probability of being employed. The role played by contextual factors is equally significant since the spouse's employment situation has an influence on whether or not an individual remains at work. The probability of an individual remaining in employment is notably higher if the spouse is equally employed. In addition, the provision of informal care (either within or outside the household) lowers the probability of being employed.

**Concerning the withdrawal from the labour market**, the analyses, all other things being equal, confirm the key observations extracted from the descriptive statistics (table 2). Age, education level, family situation, professional situation and job satisfaction are effectively determinants in the retirement decision in the same way as a change in health status between 2004 and 2006. Furthermore,

## SOURCES

### Individual data

In order to study the dynamics of retirement, that is to say the reasons behind individual decisions to retire or not, individual data was taken from the Survey of Health, Ageing, and Retirement in Europe (SHARE). SHARE constitutes a sample of 20,000 households (in which at least one member is aged 50 or over) interrogated in 2004 and again in 2006 in 11 European countries.

### Institutional variables

The institutional variables describing the different social protection systems were taken from OECD data. We opted for homogeneous inter-country indicators produced by the OECD and, where possible, differentiated variables according to individual characteristics (male/female, income quartiles).

Data sources:

- for pension systems: Whitehouse and Queisser (2006);
- for the other social protection systems: 'Employment perspectives' (OECD, 2004) for employment and unemployment and 'Transforming Disability into Ability' (OECD, 2003) for sickness and disability systems.

### Indicators describing health systems

For pensions::

- **Distance\_retirement**: this is the simplest indicator used to measure the gap between an individual's actual age and the minimum

statutory retirement age (by gender) in each country concerned.

- **Replacement\_rate**: refers to the old-age pension replacement rate at 60 years old, which corresponds to pension system income to replace an individual's last salary.
- **Wealth\_var**: refers to the variation in individuals' pension wealth if they decide to retire at 65 rather than 60 years of age. Pension wealth (the actuarial present value of benefits that a person would receive by retiring) is a complementary indicator to the replacement rate at 60 years old that combines the replacement rate effect, life expectancy and adjusted accrued pension.

For sickness and disability:

- **Coverage**: synthetic indicator created by the OECD to account for the percentage of the population covered by sickness and disability systems.
- **Generosity**: synthetic indicator created by the OECD to account for the financial generosity of sickness and disability systems.

For employment:

- **Employment\_protection**: synthetic indicator describing employment protection legislation and regulation.
- **Unemployment\_rate**: refers to the unemployment rate (by gender) in 2004.

For more detailed information, please refer to the working paper [Debrand, Sirven, 2009].

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**Senior workers in employment in 2004  
and transition to retirement between 2004 and 2006**

	Study sample	In employment in 2004	Transition to retirement between 2004 and 2006			
<b>SHARE variables</b>						
<b>Status on the labour market</b>						
Retired between the 2 waves	-	14.6%	-			
In employment	63.1%	-	-			
<b>Age</b>						
50-51	13.1%	19.3%	1.1%			
52-53	14.0%	19.9%	4.4%			
54-55	13.7%	18.4%	10.5%			
56-57	13.3%	15.2%	13.0%			
58-59	13.0%	12.5%	23.9%			
60-61	13.1%	7.8%	16.5%			
62-63	13.1%	5.2%	22.1%			
64 and over	6.7%	1.8%	8.5%			
<b>Education level</b>						
< Secondary education	35.5%	31.1%	38.0%			
Secondary education	32.3%	32.0%	30.2%			
Higher education	31.5%	36.3%	31.1%			
<b>Self-reported health status</b>						
Good in 2004	43.4%	50.8%	42.4%			
Good between 2004 and 2006	27.1%	32.7%	26.1%			
Deteriorated between 2004/2006	16.3%	18.1%	16.3%			
Improvement between 2004/2006	10.4%	10.7%	8.7%			
Bad in 2004 and in 2006	46.1%	38.5%	48.9%			
<b>Expectations</b>						
Female: Live until 75 years old	28.1%	29.2%	26.7%			
Male: Live until 75 years old	35.0%	35.7%	39.2%			
Gvt. Increases statutory retirement	27.9%	39.5%	19.8%			
Gvt. Reduces pensions	29.4%	41.3%	27.1%			
<b>Family context</b>						
Spouse in good health	26.5%	29.3%	24.1%			
Spouse in paid employment	30.5%	38.7%	25.8%			
No spouse	36.0%	36.3%	34.3%			
Household with children	53.9%	64.3%	33.4%			
Natural carer (provides informal care)	16.0%	15.3%	14.6%			
<b>Professional context</b>						
Private sector employee	66.1%	63.7%	64.3%			
Public sector employee	17.9%	17.5%	20.3%			
Self-employed	15.7%	18.8%	15.2%			
<b>Working conditions</b>						
Satisfied with job	61.5%	91.7%	88.6%			
Fearful of losing job	51.7%	77.8%	77.4%			
<b>Numbers</b>	<b>7,109</b>	<b>4,486</b>	<b>656</b>			
<b>OECD Variables</b>						
	<b>Average</b>	<b>Standard deviation</b>	<b>Average</b>	<b>Standard deviation</b>	<b>Average</b>	<b>Standard deviation</b>
<b>Social protection indicators used in the study</b>						
Replacement_rate*	79.411	19.23	79.134	19.541	78.304	18.597
Wealth_Var *	-18.323	31.11	-17.857	32.222	-11.268	26.837
Distance_retirement*	2.682	5.042	4.574	4.522	0.942	3.856
Coverage*	3.43	1.042	3.582	1.057	3.492	1.088
Generosity*	3.062	1.375	3.211	1.412	3.245	1.366
Unemployment_rate*	7.783	2.522	7.65	2.557	7.391	2.35
Employment_protection*	2.233	0.507	2.231	0.526	2.182	0.498

\* The indicators are described in the Sources insert p. 3.

**Field:** individuals aged from 50 to 64 in 2004, having participated in the two first waves of SHARE.

**Reading guide:** 46.1% of respondents self-reported being in bad health in 2004 and in 2006; 38.5% of respondents in employment in 2004 and 48.9% of respondents having withdrawn from the labour market between 2004 and 2006 self-reported bad health in 2004 and in 2006 (respective samples: 7,109, 4,486 and 656 respondents). The unemployment rate is at 7.8% for the population concerned; this rate is at 7.65% among the working population in 2004 and 7.4% among individuals who retired between 2004 and 2006.

**Data:** SHARE 2004-2006.

job satisfaction or the fear of losing one's job are factors that delay the retirement decision in the same way as good health or an improvement in health status between the two waves of the survey.

Finally, in certain cases we observe a statistical relationship between individual expectations concerning future pension reforms and the decision to retire. If the relationship cannot be established with regards to pension amount, it appears significant with regards to an increase in the statutory retirement age. There are two possible explanations: employees are either more sensitive to the statutory retirement age, or they have internalised the fact that age-increase reforms are generally more 'rapid' than those increasing pensions.

### The influence of social protection on the labour force participation of older workers

**Concerning the labour force participation of older workers,** the characteristics of social protection systems effectively influence the employment rate. If each system is taken individually, several observations can be made. For the system related to pensions, the probability of being employed is lower when the replacement rate and the net present wealth is high (sources insert p. 3). Fairly logically, the greater the 'distance' between an individual's age and the statutory retirement age, the higher the probability of being employed. For systems related to sickness and disability, there is a positive correlation with the indicator measuring the percentage of the population covered by disability systems. For the institutional variables relating to the labour market, the employment protection legislation indicator has a positive effect on the probability of being employed (sources insert p. 3).

**Concerning the pathway to retirement,** the influence of each system is observed. Fairly logically, the probability of moving from employment to retirement increases all the more when the variation in the net present wealth rises, and with the generosity of sickness and disability systems. Inversely, the move from employment to retirement is negatively correlated the further the distance



from the statutory retirement age, the coverage rate of disability systems, and unemployment levels (sources insert p. 3).

### The differences between European countries explained by variations in the employment, disability and pension systems of social protection

Inter-country differences in the labour force participation and retirement pathways of older workers can largely be explained by institutional determinants and thus variations in the social protection systems from one country to the next.

**Concerning the labour force participation of older workers**, individual and contextual factors explain 31% of inter-country variance. The introduction of labour market indicators does not significantly explain the differences (+6%), contrary to pension system specificities (+13%). Similarly, sickness and disability coverage indicators contribute significantly in explaining in inter-country differences (+42%) [Debrand, Sirven, 2009]. In effect, since the end of the 1980's, the majority of European countries have added systems that facilitate the withdrawal from the labour market for health reasons [Börsch-Supan, 2007].

**Concerning the pathway to retirement**, as a whole, the role played by individual and contextual determinants is negligible since they explain less than 4% of inter-country differences (diagram 1). This estimation increases significantly, however, when the collective effect of the three social protections systems are taken into account simultaneously, as it

## METHOD

The analysis is carried out in two phases. In the first phase, determinants in the transition from work to retirement in Europe are identified by a joint estimation of labour force participation and pathway to retirement determinants. Secondly, from the results of preceding estimations, the chosen methodology allows us to apprehend the factors explicative of inter-country differences. Finally, the intention to explain the differences between European countries imposes a global analysis of all the national samples.

For more detailed information, please refer to the working paper [Debrand, Sirven, 2009].

T2 Determinants of labour force participation of older workers in 2004 and the transition to retirement between 2004 and 2006		
Variables	In employment in 2004	Transition to retirement between 2004 and 2006
<b>Gender</b>		
Men	Ref.	-
Women	0.13**	-
<b>Age</b>		
50-51	Ref.	Ref.
52-53	0.02	0.34*
54-55	0.01	0.55**
56-57	-0.27**	0.53**
58-59	-0.46**	0.91**
60-61	-0.88**	0.83**
62-63	-1.05**	1.41**
64 and over	-1.26**	1.42**
<b>Education level</b>		
< Secondary education	Ref.	-
Secondary education	0.12**	-
Higher education	0.33**	-
<b>Self-reported health status</b>		
Poor in 2004	Ref.	-
Good 2004	0.36**	-
<b>Good in 2004 and 2006</b>		
Deterioration between 2004 and 2006	-	-0.17**
Improvement between 2004 and 2006	-	-0.14
Bad in 2004 and 2006	-	-0.19*
<b>Expectations</b>		
<b>Life expectancy</b>		
<i>Female: life expectancy less than 75 years old</i>		
Female: life expectancy at 75 years old	0.16**	-
<i>Male: life expectancy less than 75 years old</i>		
Male: life expectancy at 75 years old	0.05	-
<b>Statutory framework on retirement</b>		
<i>Lowering of the statutory minimum retirement age</i>		
Increase of the statutory minimum retirement age	-	Ref.
Rise in pension allowance	-	Ref.
Drop in pension allowance	-	-0.08
<b>Family environment</b>		
Spouse in good health	-0.03	-0.11
Spouse in paid employment	0.38**	-0.22**
No spouse	0.17**	-0.26**
Household with children	0.05*	-0.12**
Natural carer (provides informal care)	-0.17**	0.04
<b>Professional environment</b>		
<i>Private sector employee</i>		
Public sector employee	-0.01	0.15**
Self-employed	0.72**	-0.40**
<b>Working conditions</b>		
Is satisfied with job	-	-0.36**
Is afraid of losing job	-	-0.16**
<b>Characteristics</b>		
Period of time between waves 1 and 2	-	-0.01
<b>Social protection indicators used in the study</b>		
Replacement_rate*	-0.46**	0.26
Wealth_Var *	-0.25*	0.93**
Distance_retirement*	0.09**	-0.11**
Coverage*	0.35**	-0.47**
Generosity*	-0.02	0.12**
Unemployment_rate*	0.02	-0.07**
Employment_protection*	0.27**	-0.18
<b>Numbers</b>	<b>7,109</b>	<b>4,869</b>

\* The indicators are described in the Sources insert p. 3.

**Reading guide:** having a spouse in employment has a positive effect on labour force participation in 2004 and a negative effect on the transition to retirement between 2004 and 2006. The gap between the minimum statutory retirement age and an individual's actual age has a positive effect on labour force participation in 2004 and a negative affect on the transition to retirement between 2004 and 2006. These effects have a 5% threshold of significance%.

**Thresholds of significance:** \* 10%, \*\* 5%.

**Data:** SHARE 2004-2006.

explains 68.3% of inter-country differences. Furthermore, the characteristics of each social protection system taken individually provide more information in the explanation of inter-country differences than the sum of the combined effects: 25.4% of inter-country variance is explained by the pension system, rising to 26.4% with the disability system. Contrary to these two systems, however, indicators relating to employment add little information in understanding the differences between European countries (1% of variance explained).

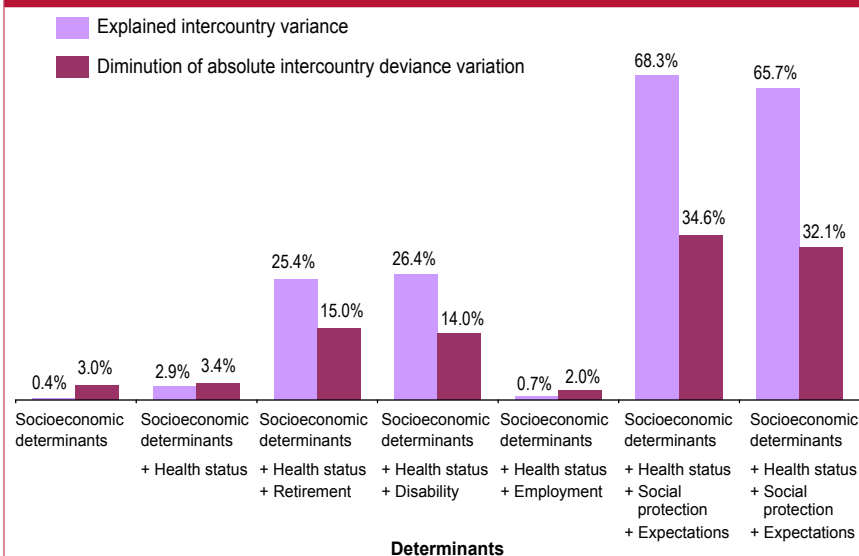
\* \* \*

In terms of age, gender, education level and health status, the pathways to retirement of older workers are comparable from one European country to the next. Among the contextual determinants, once again we find that the spouse's employment situation has an influence on an individual's retirement decision. The three social protection systems (employment, pensions and disability) are equally significant determinants in the retirement decision. These results corroborate the existence of a multitude of explicative factors in the transition from employment to retirement.

As a whole, individual and contextual determinants do not really explain cross-country differences. On the contrary, it is the characteristics of the three social protection systems (employment, pensions and disability) that explain the vast majority of cross-country differences. More precisely, the social protection systems have a lesser influence when taken individually and are dominated by the pensions and disability systems. Yet, if the collective effect of the three systems is superior to the sum of idiosyncratic effects, one could conclude that there exists a form of complementary effect between social protection systems. This theory is all the more likely since a system is rarely created *ex-nihilo*, but rather created and gauged according to other existing systems. This being the case, the differences between countries are not to be sought in the differences between

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### Transition from employment to retirement between 2004 and 2006: explanation of inter-country differences



Data: SHARE 2004-2006.

individual socio-economic characteristics but in the differences between national social protection systems.

The results suggest that any European social policy aiming to increase the labour force participation of older workers should be based on two premises: firstly, they

should take into account the complexity of determinants affecting the retirement decision and secondly, converging factors should be sought within the heterogeneous European institutional systems and take into consideration the totality of social protection systems and not simply those relating to pensions. ♦

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