The determinants of early retirement across Europe

Virginia Hernanz

Universidad de Alcalá

ZEW
Zentrum für Europäische Wirtschaftsforschung GmbH
Centre for European Economic Research

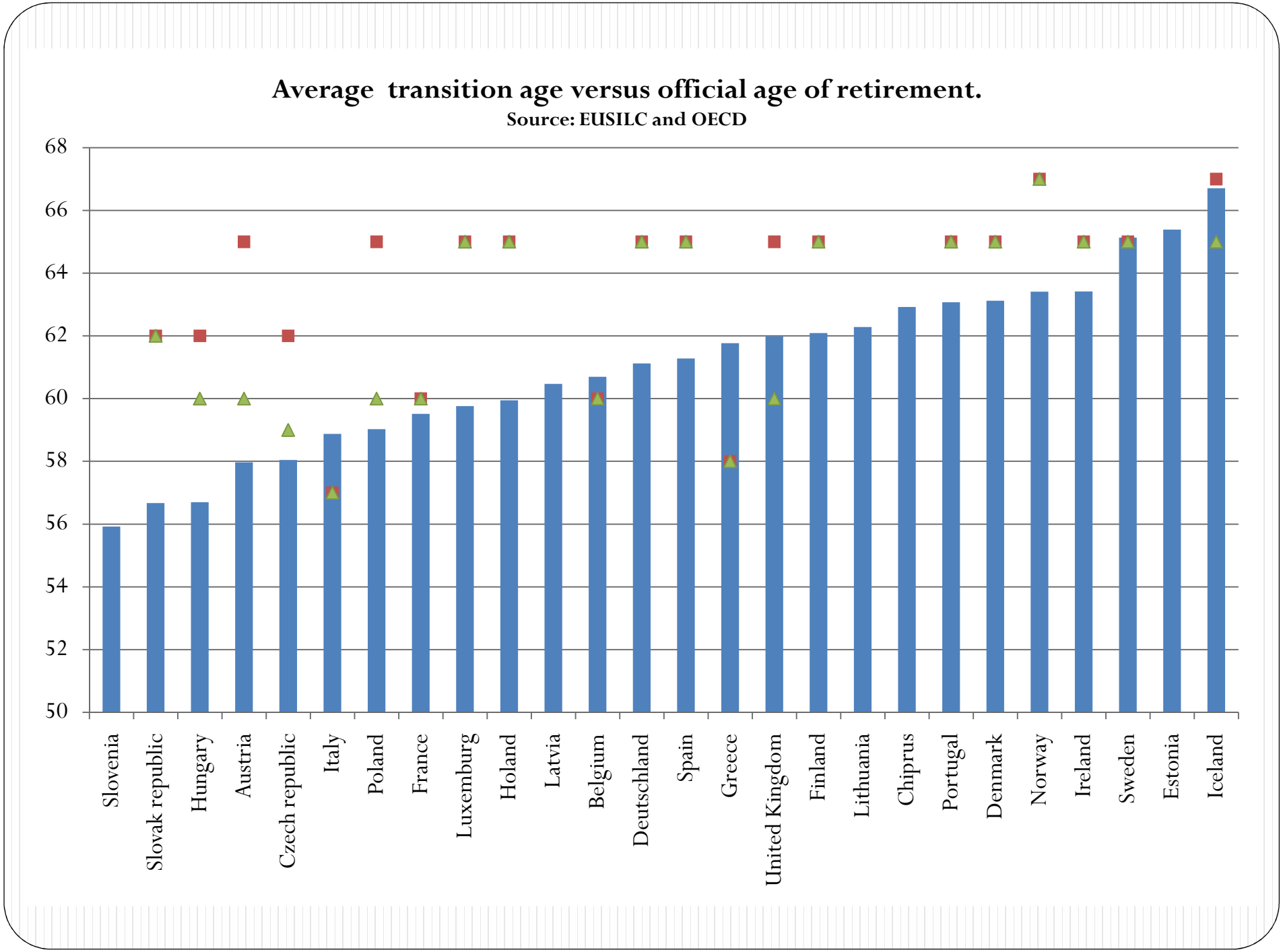
European Labor Survey (EU-LFS) and European Union Statistics on Income and Living Conditions (EU-SILC Force):
2nd European User Conference
Mannheim, March 31 - April 1, 2011

Structure of the presentation

1. **Motivation and Previous Empirical Results**
2. **Data: Dependent and independent variables**
   - Which variables and countries I am using,
   - Similarities with other data sources (OECD)
3. **Descriptive graphs and some estimations results on:**
   - The probability of retirement from unemployment
   - The probability of being early retired
   - The determinants of the retirement age
4. **Very preliminary conclusions and further work**

Why to study the determinants of early retirement?

- Pension reform has become a major political and economic issue in many European countries.
- In particular, many of the recent reforms (France, Spain and Greece, among others) include the enlargement of the statutory retirement age.
- However, legal (statutory) retirement age is not the sole determinant of effective retirement age.
- Variability in the effective retirement age is much larger than in the statutory retirement age.


Average transition age versus official age of retirement.
Source: EUSILC and OECD
68
66
64
62
60
58
56
54
52
50
Slovenia
Slovak republic
Hungary
Austria
Czech republic
Italy
Poland
France
Luxemburg
Holand
Latvia
Belgium
Deutschland
Spain
Greece
United Kingdom
Finland
Lithuania
Chiprus
Portugal
Denmark
Norway
Ireland
Sweden
Estonia
Iceland

What we already know about early retirement across countries

- **Blondal and Scarpeta (1997**) study the forces that contributed to lower retirement age, more specifically the try to analyse the role of the financial incentives to retire early. And they conclude that Incentives to retire early are amplified in countries where other incomes support schemes which were originally designed to deal with other contingencies such as unemployment have been used to financed early retirement.

- **Gruber and Wise (1999)** conduct a cross country analysis for 12 countries (many of them from EU) and find a strong correlation between social security programs incentives to early retirement and the proportion of older persons that have left the labour force.

Among others…

- **Also Duval (2003)** get similar conclusions about the important role of social transfer programmes in early retirement.

- **Michael Fuchs & Mattia Makovec & Asghar Zaidi, 2006**. "**Transition from Work to Retirement in EU25**,". In this paper the authors use the data from EU Labour Force Survey (1998-2005) and analyze the differences in labour force participation across EU25. They find that in some countries the effective age at which individuals retire is 5 years less than the official age. And also they stress that many of these early retires do since they cannot find suitable jobs to retains.

Following DORN and SOUSA-POZA (2010): 'Voluntary' and 'Involuntary' early retirement: an international analysis.

- The most common approach to early retirement is from a microeconomic labour supply perspective is..
- The optimal retirement decision ***(choice)*** is taking by individuals in order to maximize their future expected utility
- So, more generous public old-age benefices will increase the incidence of transition to early retirement .

Following DORN and SOUSA-POZA (2010)…

But, what about the role of labour demand on early retirement decisions?

- Firms can use pensions structure to influence or even determine workers transitions to early retirement.
- Social security benefits can act as a form of unemployment insurance.
- ”Early retirement are often better accepted that layoff by employees, labour union, and the public”.
- **Furthermore,** workers could be layoff and then, after exhausting unemployment insurance, go to early retirement.

Data: EUSILC 2004-2007 for 16 countries

- EUSILC information allows to explore the determinants of:
  - **Early-retirement probability,**
  - **Labour market origin of the retirees**. (employment vs. unemployment)
  - **Effective retirement age**

Based on information contained in the variable **PL180: MOST RECENT CHANGE IN THE INDIVIDUAL'S ACTIVITY STATUS** we consider retirees to those who change from employment or unemployment to retirement.

Data: EUSILC 2004-2007 and others

- **Early retirement:** Effective retirement age is lower the official retirement age (Source: Pensions at the Glance 2009, OECD)

- **"Free choice or forced":** We consider that the transition from employment to retirement (early retirement) involve a greater degree of choice according traditional theoretical models of labour supply Only employees can really choose between leisure and work and the optimal date of retirement.

- While unemployment status is more influenced by the demand determinants and institutional determinants: the rigidity of employment protection legislation, the generosity of unemployment insurance, etc..

Data: EUSILC 2004-2007 and others

- **Main explanatory variables used:**

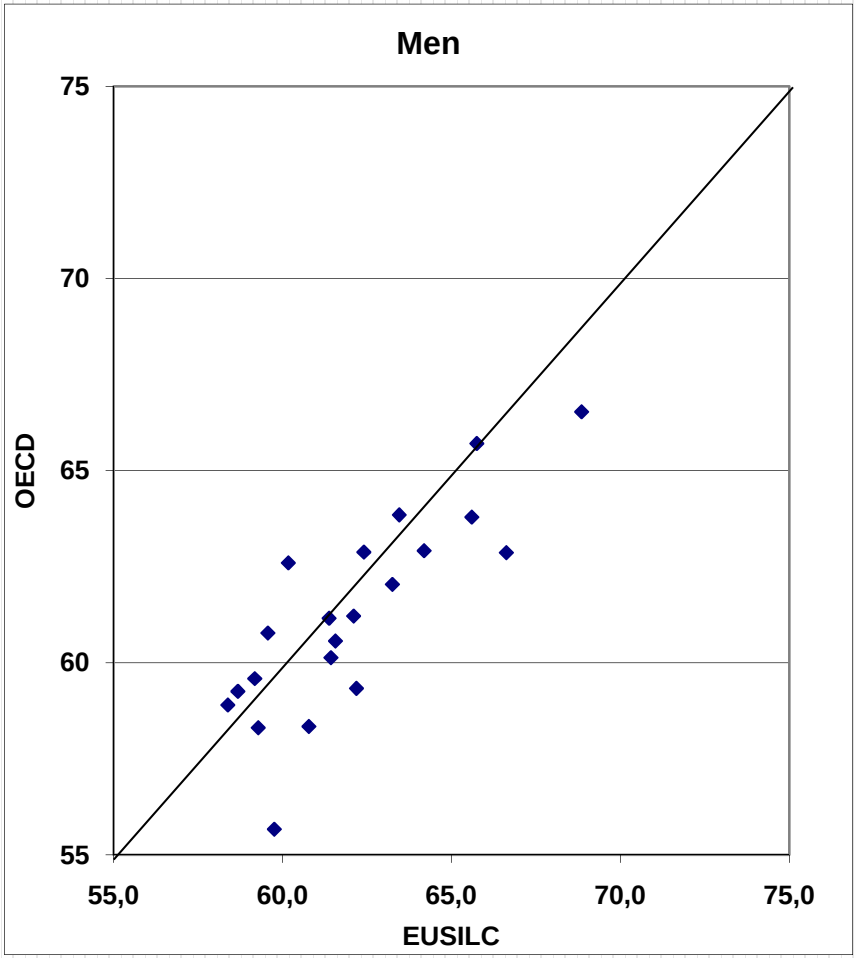
1. **Personal characteristics**: nationality, sex, education, marital status, health status.

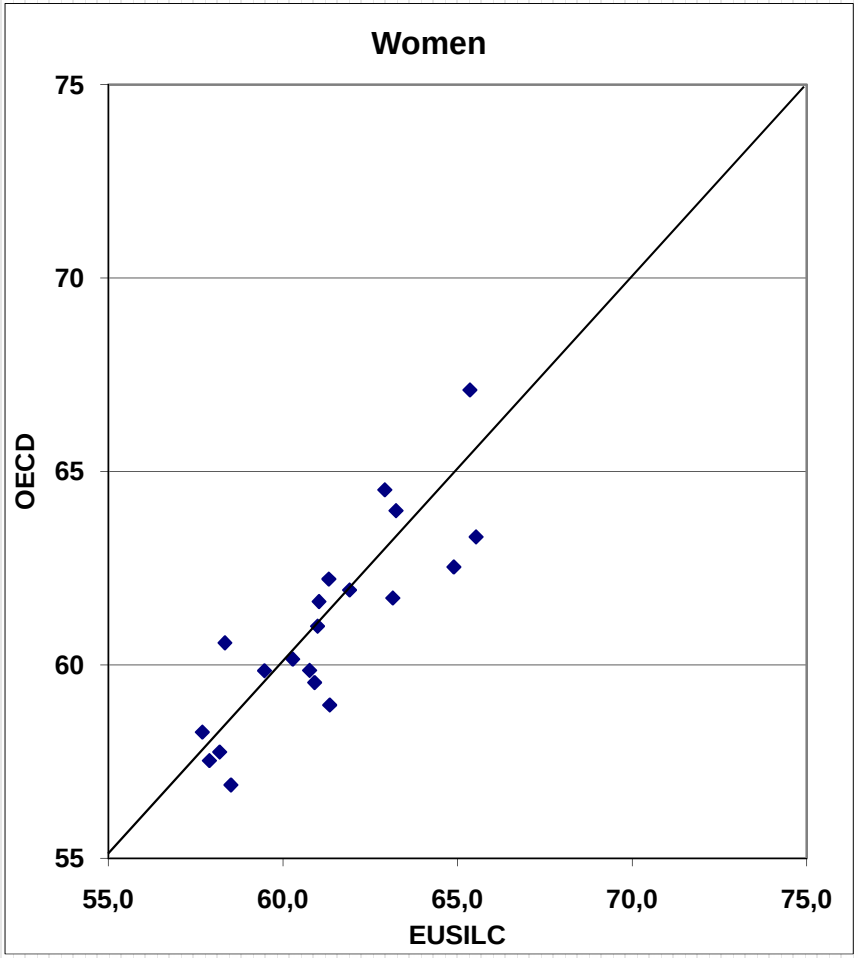
2. **Job characteristics**: Work experience. (we could consider previous economic activity or occupation only for those that come from employment.)

3. **External data sources**. Cross-country information on:

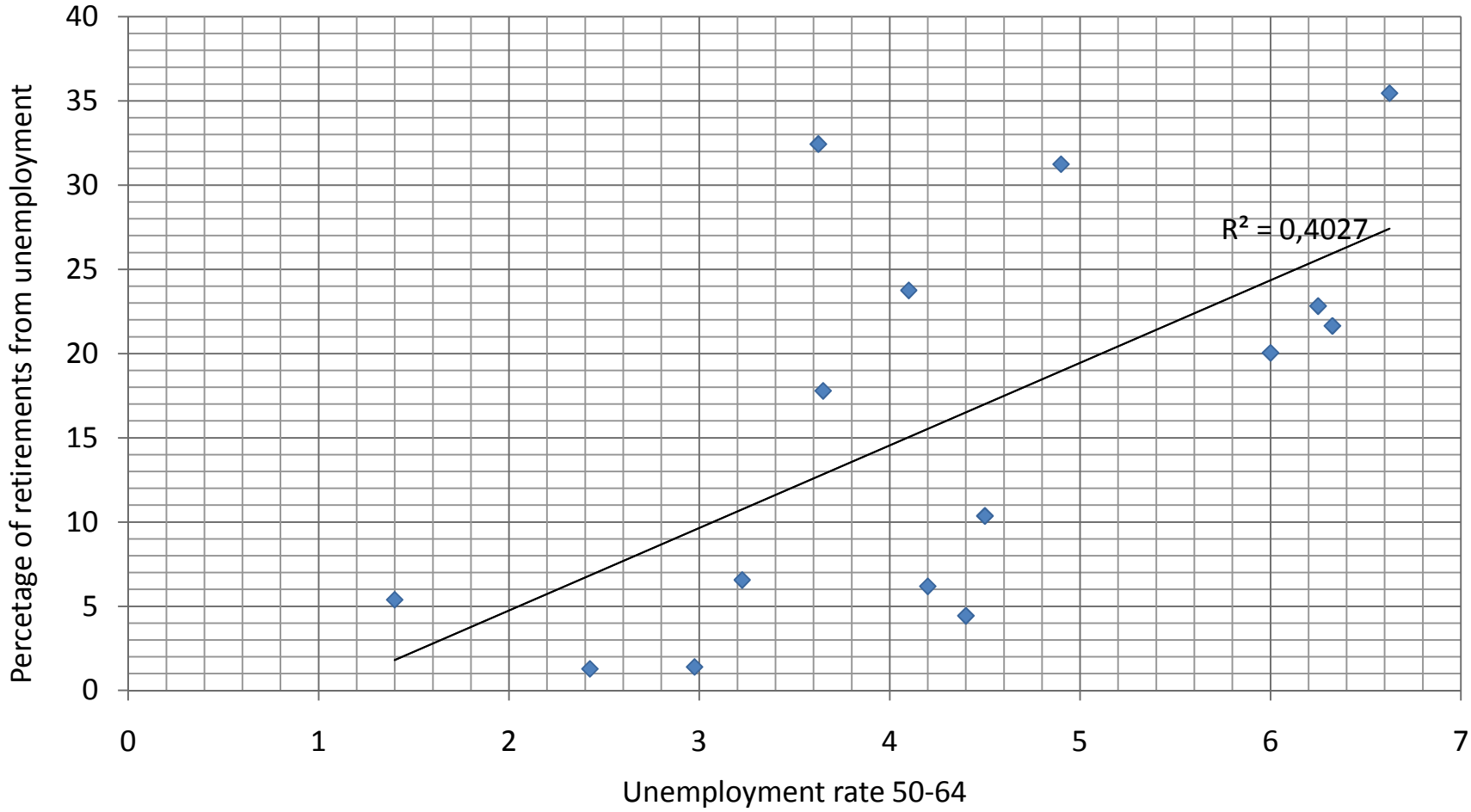
   - Gross and Net pension replacement rates (OECD)
   - Initial and long-run unemployment replacement rates (OECD)
   - EPL indexes (OECD)
   - Employment Growth (2001-2004). By sex, education and age group (Eurostat)

The effective age of retierement: EUSILC versus OECD data



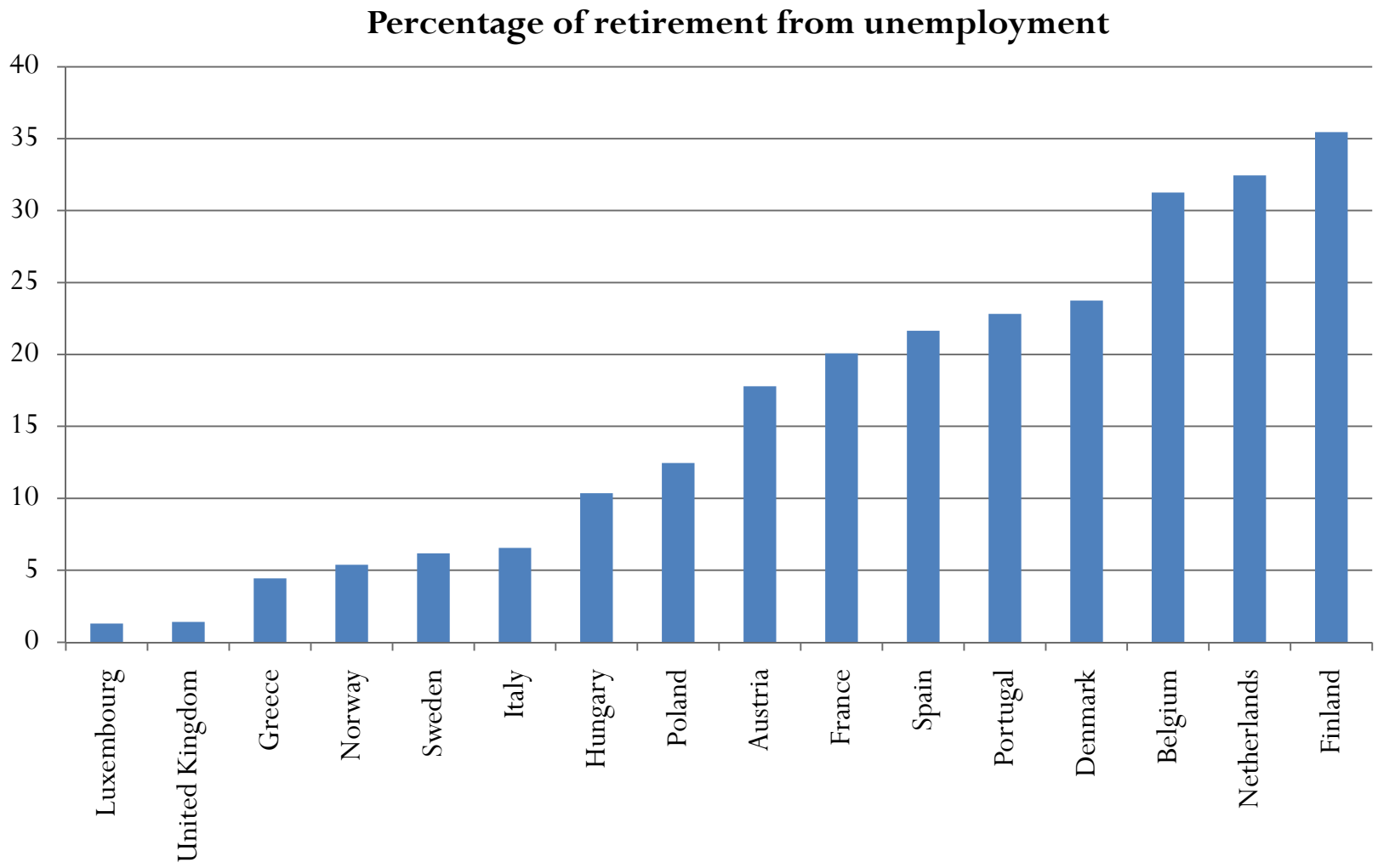


Does Unemployment Pushes Workers into Early Retirement?



- Poland is excluded of these data

In some countries more than others....



Which other factors can explain this variability across countries?
(*Marginal effects on the probability* to retire from unemployment)

	dF/dx	Z	dF/dx	Z
Belgium			18,25	-4,65
Denmark			10,64	-3,55
Spain			8,15	-2,89
Finland			6,19	-1,80
France			2,53	-1,22
Greece			-8,07	3,70
Hungary			-3,49	1,22
Italy			-9,19	5,78
Luxemburg			-8,42	4,12
Holland			8,40	-3,01
Norway			-10,15	3,37
Poland			-6,45	4,20
Portugal			7,32	-2,39
Sweden			-5,01	2,00
United Kingdom			-8,01	2,53
Female	-1,54	1,47	-1,60	1,53
Married	-2,81	1,49	-3,20	1,85
Separated	1,81	-0,79	1,22	-0,59
Widowed	0,71	-0,28	-0,52	0,24
Less than secondary	-1,28	1,00	0,05	-0,03
Less than tertiary	-6,94	4,41	-6,76	4,00
More o less well	0,89	-0,58	1,82	-1,24
No chronic ill	-2,55	2,40	-1,52	1,57
Early retirement	0,11	-0,12	-2,26	2,26
15-24 years	-0,58	0,23	1,07	-0,44
25-30 Years	-3,66	1,61	-1,93	0,90
31-34 years	-7,59	3,60	-6,57	3,52
35-40 years	-8,81	4,17	-8,36	4,39
>40 years	-12,24	5,83	-13,46	7,14
Emp. Growth>50* (0104)	-0,25	2,01	-0,49	2,65
	4962		4962	
	0,0395		0,12480	

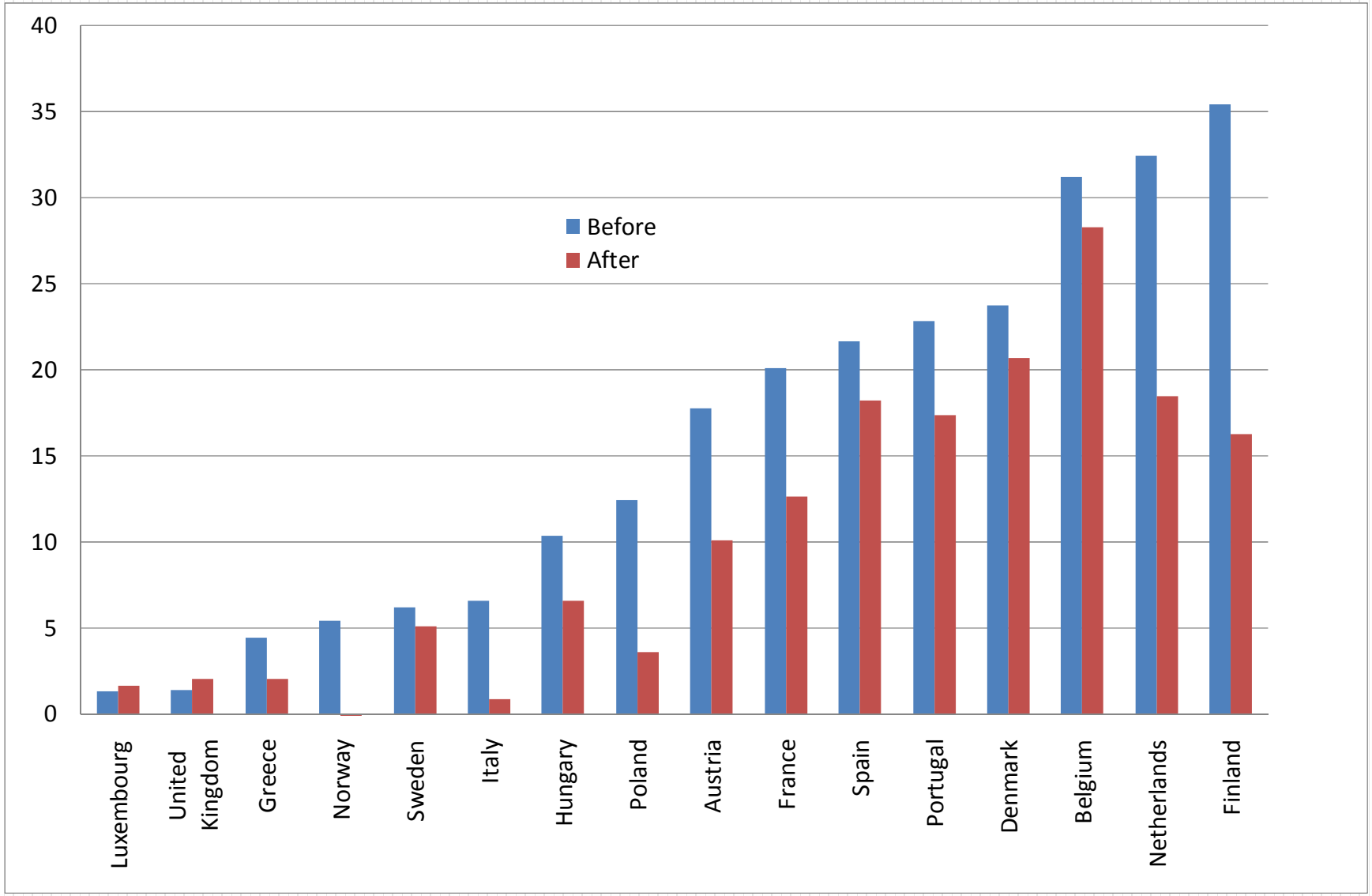
variability across countries remain, but "the ranking" changes

Men, low skilled workers and with shorter working careers tend to retire from unemployment.

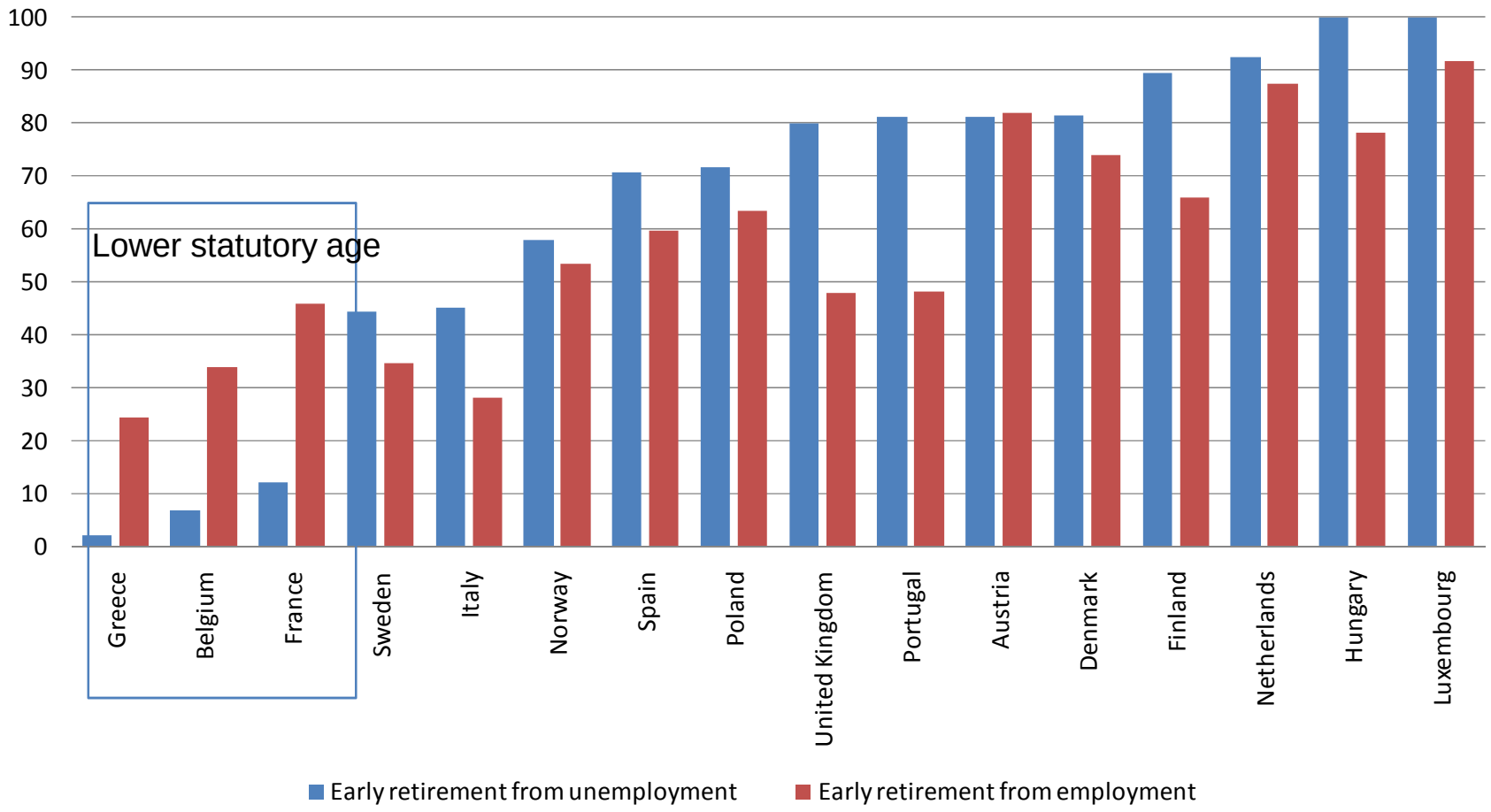
Some impact of the health situation is estimated

Labour market situation matters. Retirement from U is more likely during crisis periods

Percentage of retirement from unemployment before and after controlling for other explanatory variables. (back)



Have many of those that goes into retirement are early retirement?



What determines early retirement?

Marginal effects on the prob. of early-retirement

Early Retirement	dF/dx	z	dF/dx	z
Belgium	-0,50	-10,80		
Denmark	0,03	0,51		
Finland	-0,20	-5,04		
France	-0,05	-0,81		
Greece	-0,44	-13,70		
Hungary	-0,51	-11,35		
Italy	-0,10	-1,81		
Luxembourg	-0,58	-19,28		
Holland	0,13	2,89		
Norway	0,15	2,81		
Poland	-0,21	-3,53		
Portugal	-0,25	-6,92		
Spain	-0,13	-2,64		
Sweden	-0,39	-8,35		
United Kingdom	-0,38	-7,70		
Female	-0,12	-6,86	-0,02	-1,08
Married	-0,03	-0,93	0,01	0,18
Separated	-0,06	-1,62	-0,01	-0,32
Widowed	-0,17	-3,95	-0,09	-2,21
Secondary or less	0,16	8,00	0,23	13,28
Tertiary or less	0,01	0,32	0,14	6,13
More o less bad	-0,02	-0,78	0,00	0,03
No chronic ill	0,01	0,54	-0,02	-1,41
Retired from Employment	0,07	2,80	-0,01	-0,28
15-24 years	-0,09	-1,72	-0,16	-3,14
25-30 Years	-0,10	-2,15	-0,14	-2,90
31-34 years	-0,07	-1,40	-0,10	-2,17
35-40 years	-0,18	-4,07	-0,18	-4,09
>40 years	-0,38	-8,63	-0,29	-6,77
Gross replacement rate			0,01	16,14
Number of cases	4962		4962	
R2	0,2072		0,0831	

Reference category: Austria, Male, primary school or less, always single, Health status: more or less bad, Early retirement from unemployment and less than 15 years of work experience.

Country differences are relevant. …Explore association with early-retirement penalties

females, low skilled workers and those with long working careers have a lower probability to retire before the statutory age

Coming from Unemployment tends to be associated with low probability of early-retirement.

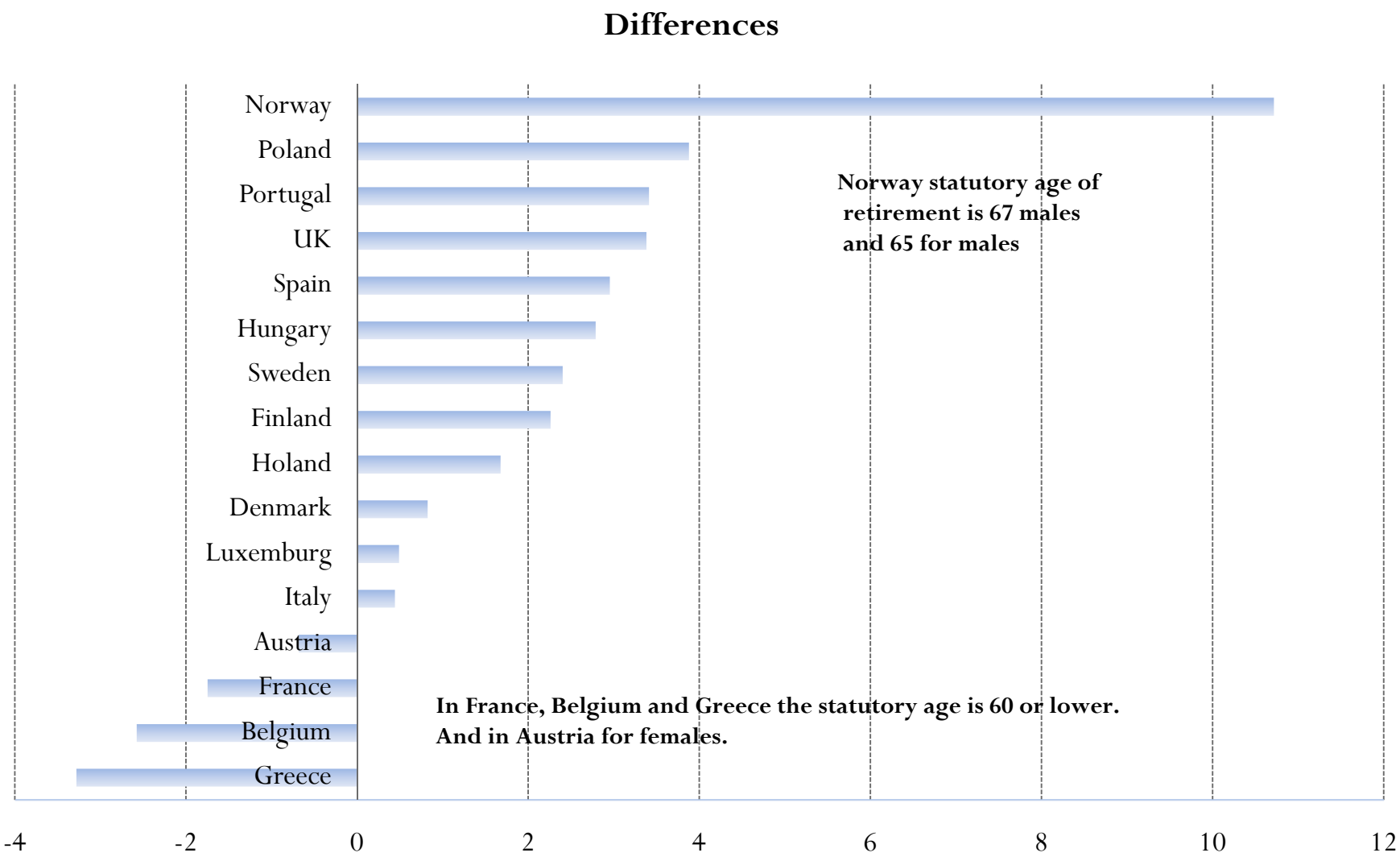
A closer look at the interaction between Labour market and Social Security Policies

	dF/dx	z	dF/dx	z	dF/dx	z
Female	-0,08	-4,41	-0,07	-4,25	-0,08	-4,48
Married	0,00	0,14	0,00	-0,01	0,00	0,08
Separated	-0,06	-1,64	-0,06	-1,53	-0,06	-1,68
Widowed	-0,10	-2,44	-0,11	-2,59	-0,11	-2,55
Less than secondary	0,17	8,8	0,14	6,98	0,17	8,78
Less than tertiary	0,03	1,29	0,01	0,29	0,03	1,29
More o less well	0,02	0,62	0,02	0,80	0,01	0,47
No chronic ill	0,00	0,08	0,00	0,21	0,00	0,12
Retired From Emp.	0,06	2,72	0,05	2,23	0,06	2,59
15-24 years	-0,09	-1,79	-0,09	-1,86	-0,09	-1,83
25-30 Years	-0,11	-2,21	-0,10	-2,11	-0,11	-2,34
31-34 years	-0,09	-1,77	-0,08	-1,60	-0,09	-1,87
35-40 years	-0,20	-4,48	-0,19	-4,36	-0,20	-4,54
> 40 years	-0,39	-8,89	-0,37	-8,61	-0,39	-8,9
Gross replacement rate	0,01	11,83	0,01	12,86	0,01	11,9
L. T. Unem Replac. Rate	0,01	21,16	0,01	19,66	0,01	20,91
EPL Permanent	0,14	6,84			0,16	6,85
EPL Total			-0,03	-1,52		
Inital Unem Repl Rate					0,00	-1,9
Number cases	4661		4661		4661	
R2	0,1507		0,1437		0,1513	

Early-retirement is more likely in countries with:

- More generous pension benefits systems (higher replacement rates)
- More generous (in the long-term) U benefits systems
- Higher EPL for permanent workers. ……..

Difference in the age of retirement (between coming from employment and unemployment)



The determinants of the effective retirement age

Retirement age	Coef.	t	Coef.	t	Coef.	t
Gross replacement rate	0,05	19,83	0,06	22,74		
Belgium					-2,73	-25,66
Denmark					2,40	25,83
Spain					2,04	28,19
Finland					2,30	20,99
France					-2,67	-42,42
Greece					-4,83	-47,93
Hungary					-1,54	-14,99
Italy					-5,73	-96,20
Luxemburg					2,08	26,76
Holland					2,18	24,89
Norway					3,37	28,72
Poland					-0,31	-4,60
Portugal					2,27	23,94
Sweden					2,35	23,80
United Kingdom					-0,34	-3,36
Female			-0,38	-4,03	-1,29	-39,79
Married			0,08	0,47	-0,07	-1,14
Separated			0,44	2,12	-0,12	-1,63
Widowed			0,23	0,98	-0,11	-1,37
Less than secondary			0,58	5,80	-0,07	-1,74
Less than tertiary			1,68	12,70	0,09	1,87
More o less well			-0,08	-0,57	-0,02	-0,45
No chronic ill			-0,53	-5,61	-0,02	-0,61
Retired from Employment	**-0,67**	**-5,40**	**-1,04**	**-8,25**	**-0,04**	**-0,99**
15-24 years			-1,02	-3,69	0,10	1,05
25-30 Years			-0,61	-2,37	-0,03	-0,36
31-34 years			-0,56	-2,11	-0,04	-0,48
35-40 years			-0,25	-1,07	-0,09	-1,14
>4o years			1,24	5,20	0,09	1,09
Intercept			57,89	166,42	63,38	534,36
Number of cases	5713		4984		4962	
R2	0,069		0,2044		0,2109	

Reference category: Austria, Male, primary school or less, always single, Health status: more or less bad, Early retirement from unemployment and less than 15 years of work experience.

Again, country differences are remarkable.

Women retire earlier.

Non-monotonic association with working experience.

As in the previous case, unemployment period tends to be associated with a delay in the age of retirement

As well and the other Social Security Benefits

	Coef.	t	Coef.	t
Female	1,05	5,44	1,05	5,41
Married	1,36	4,18	1,36	4,15
Separated	1,44	3,54	1,44	3,53
Widowed	3,78	8,44	3,76	8,38
Less than secondary	-2,93	-13,99	-2,93	-14,00
Less than tertiary	-0,80	-2,91	-0,80	-2,92
More o less well	-0,07	-0,27	-0,09	-0,32
No chronic ill	-0,05	-0,28	-0,05	-0,27
Retired From Emp.	-0,46	-1,90	-0,48	-1,94
15-24 years	2,77	5,20	2,76	5,18
25-30 Years	5,06	10,19	5,04	10,11
31-34 years	5,74	11,29	5,72	11,24
35-40 years	7,70	16,85	7,69	16,83
> 40 years	10,83	23,41	10,83	23,40
Statutory age	0,21	4,39	0,21	4,36
Gross replacement rate	-0,02	-2,88	-0,02	-2,84
L. T. Unem Replac. Rate	-0,01	-1,44	-0,01	-1,46
EPL Permanent	-0,42	-1,66	-0,32	-1,14
Initial Un. Repl Rate			-0,01	-0,72
Intercept	42,51	17,82	43,14	17,00
Number cases		4560		4560
R2		0,264		0,264

Legal retirement age is one among the determinants of the retirement age

In particular, labour market institutions appear to be quite relevant.

As previously, more generous U benefits systems and high EPL are associated with lower retirement ages across countries

Very Preliminary Conclusions

- EUSILC provides useful individual information to analyze retirement decisions across EU countries

- Cross-country differences in the statutory retirement age is just one of the determinants of variability in effective retirement age across countries

- And other Supply, Demand, institutional set-up and labour market conditions determine the effective age of retirement across countries.

Further work

- Use of additional information available in EUSILC
  - Household level information
  - Previous working career
  - Pension and other social benefits

- Explore policy implications for the design of pension reforms. Call for a broader approach taking into account labour market institutions?