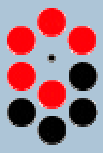
Retirement routes and economic incentives to retire: a cross-country estimation approach

Martin Rasmussen

Welfare systems and policies
Working Paper 1:2005



Working Paper
Socialforskningsinstituttet
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Abstract

We estimate the effect of benefit rates on individuals' retirement behaviour. Compared to most other studies in the field, the characterising feature of this paper is to use a cross-country panel data set of individuals (the European Community Household Panel, ECHP) to estimate economic effects across countries. A descriptive part of the paper makes clear that retirement via a period of unemployment prior to retirement programmes is quantitatively very important. We find econometric evidence that benefit rates affect retirement and the magnitude of this effect is relatively low if retirement occurs via a spell of unemployment.

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1. Introduction

Many empirical studies about the effects of retirement programmes on individuals' retirement behaviour have been carried out recently. This line of study is interesting per se but has been further motivated by the prospects of the future population ageing in many countries. In this paper, we seek to add further to this research. We use a cross-country panel data set of individuals, namely the European Community Household Panel (ECHP). To investigate how the level of benefit rates affect retirement behaviour. In the first part of the paper, we give a descriptive analysis of retirement via alternative routes. We show that retirement via a period of unemployment is very important quantitatively. This suggests that "retirement" should be analysed in a broader sense than participation in social programmes formally designed for retirement (early retirement programmes or disability benefit programmes). In the second and main part of the paper, we estimate economic incentives for retirement econometrically. The characterising feature of the econometric approach is that we use cross-country variation of the data to identify these effects. We use some time to compare this method with alternatives method that use within-country information and relatively detailed information of the design of retirement programmes. In short, the method in this paper uses crude information on programmes but employ valuable cross-country information. We use a (sort of) duration model for (initially) employed men to study exit out of employment (or out of labour market participation) into retirement as a function of especially the benefit rate in retirement programmes.

The literature on estimation of retirement is large. We will relate this paper to a single reference, namely the project "social security around the world" (SSAW), see Gruber and Wise (2004) and e.g. http://www.nber.org/books/intlSS-p3/index.html. The SSAW-project studies retirement behaviour in a number of countries. The approach is to use the same methods in the study of each country and then to compare results across countries. Also, relatively simple and aggregated cross-country estimations of retirement are carried out. The method of using within-country estimation is very fruitful because detailed modelling each country's retirement programmes is a practically surmountable task and because country-specific (unobserved) heterogeneity is by definition not a statistical problem. The comparison of various countries is useful because the collection of results from various countries provides additional empirical evidence. Furthermore, uniform results across countries may be interpreted as an indication that country-specific characteristics do not have an important role (Gruber and Wise (2004) p. 2 note that the uniformity of economic effects are striking). Within-country estimations of retirement are however not without difficulties. For example, in a specific country, the lowest age at which a person is entitled to early retirement is often the same for each individual. Also, the benefit level might either vary little across individuals or vary across individual as a function of individuals' wage rates or other as a function of other variables that may be assumed to affect retirement behaviour themselves. In general, within-country studies may sometimes be suspected to suffer from low variation of the interesting explanatory variables. The SSAW-project does a convincing work to overcome these difficulties. Nevertheless, cross-country estimations are a natural way to obtain

variation in data. Also, we argue that cross-country data offers a natural assumption that reduces estimation problems due to unobserved individual heterogeneity. On the other hand, cross-country estimations rely on some sort of assumption of homogeneity of populations across countries with respect to retirement behaviour.

Section 2 briefly describes the data and the appendix goes into details. Section 3 presents descriptive analysis of two routes to retirement. Section 4 compares in detail the method in this paper with that of within-country studies. Section 5 presents results of estimations.

2. Data

We use the European Community Household Panel (ECHP). The questions in this survey are asked to individuals in a number of European countries through a number of years. Hence, all information in the ECHP is reported by the interviewed. Compared to national data sets, an advantage of the data set is the cross-country comparability. A possible disadvantage is that the questions might not fit perfectly with national specialities. Compared to data sets based on registers, an advantage is that 'soft' question on e.g. health or social relations may be included. A disadvantage is that the number of observations is low compared to register data set and information about e.g. income might be less precise.

We consider the ten countries Denmark, Germany, the Netherlands, Belgium, UK, Ireland, Portugal, Spain, Italy and Greece, and we consider the period 1995 to 2000.

We limit the sample of individuals to men who where working in 1995 (or – to be precise – employed in the first year their participated in the survey) The size of the estimation sample is 3674 individuals.

'States', wage rates and benefit rates are the most important variables used. In the next section, the definitions of these variables are briefly explained (see the appendix for details).

States, wages and benefit rates

Each individual is each year characterised as belonging to exactly one of five 'states', namely disability benefit, early retirement benefit, employment, unemployment and a residual called 'home'. First, a set of 'primary' indicators for four of the states (excluding the residual) is calculated. Since some individuals in some years may be classified in more than one state, a final categorisation is made by giving the primary states 'priority': a sequence of the states is chosen and an individual belonging to a state with low number cannot belong to a state with a higher number. An individual not classified in any other state belongs to 'home'. Eventually unemployment and 'home' are merged (into 'non-employment') and disability benefit and early retirement are merged into 'retirement'. Hence we end up with three states only. Table A1 in appendix describes the exact question in the ECHP-questionnaire used to make the classification.

Table 1 shows how the 3674 initially employed men in the estimations sample are distributed across countries and how many who retire during the estimation period.

Table 1. Number of observations by country and retirement status

	Retired (participants in early retirement programmes or disability benefit programme)	Observations
Denmark	203	267
The Netherlands	279	365
Belgium	96	152
Ireland	198	256
Italy	332	525
Greece	165	254
Spain	361	505
Portugal	367	456
Germany	421	643
UK	156	251

Source: The European Community Household Panel. Own calculations.
Notes: Observations in the estimation sample (see section 2 and 5). The total number of observations is 3674. To be 'retired' in the table means that the person moves from employment to retirement a some time during the years he participate in the ECHP-survey.

The wage rates used in the estimation are observed wages. These exist for all individuals, since the estimation sample consists of individuals who are initially employed (and those who did not report a wage rate are excluded from the sample).

Benefit rates for disability benefit and early retirement programmes are calculated across beneficiaries as simple OLS-regressions within each country using age and wage rate as explanatory factors and using ECHP-data. See the appendix for details and the next section for comparison with alternative methods.

Finally, a number of control variables are included (see section 5).

3. Descriptive analysis of routes of retirement

It is a well-described phenomenon that transition into retirement programmes are frequent at the lowest age limit for entitlement for such programmes, see e.g. Gruber and Wise (2004). It is also a well-known fact that many people retire via programmes not formally designed as retirement programmes. The best example is retirement via disability benefit programmes, but a period of unemployment prior to collection of retirement benefit may also be important.

In this section we present various measures of retirement. The most often used way to describe retirement is to plot the age-specific rates of transition from 'labour market participation' to 'retirement programme participation'. Below we will present such transition rates. Comparison of the measures is intended to show the importance of retirement via a period of non-employment. We also show participation rates by age. We do this as a supplement because the transition rates are fluctuating due to a low number of observations at some ages in some countries.

Calculations are based on the definition of states, described in the previous section. We consider three states: 'work', 'retirement' (disability benefit and early retirement), and a 'non-employment' (e.g. unemployment benefit and the residual 'home'). We calculate the 'non-employment retirement route' to be compared to the 'regular retirement route'. A 'state' refers to single year and a 'route' refers to a string of

states during a number of years. To explain, consider the examples of spells in table 2.

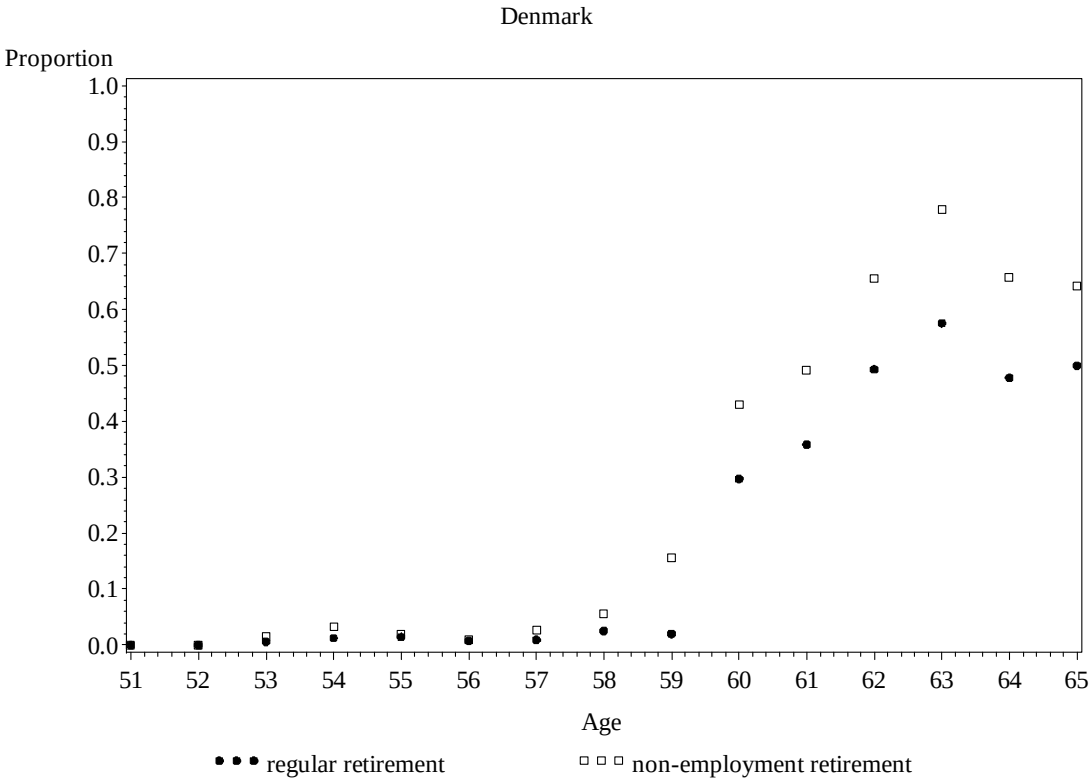
Table 2. Examples of spells

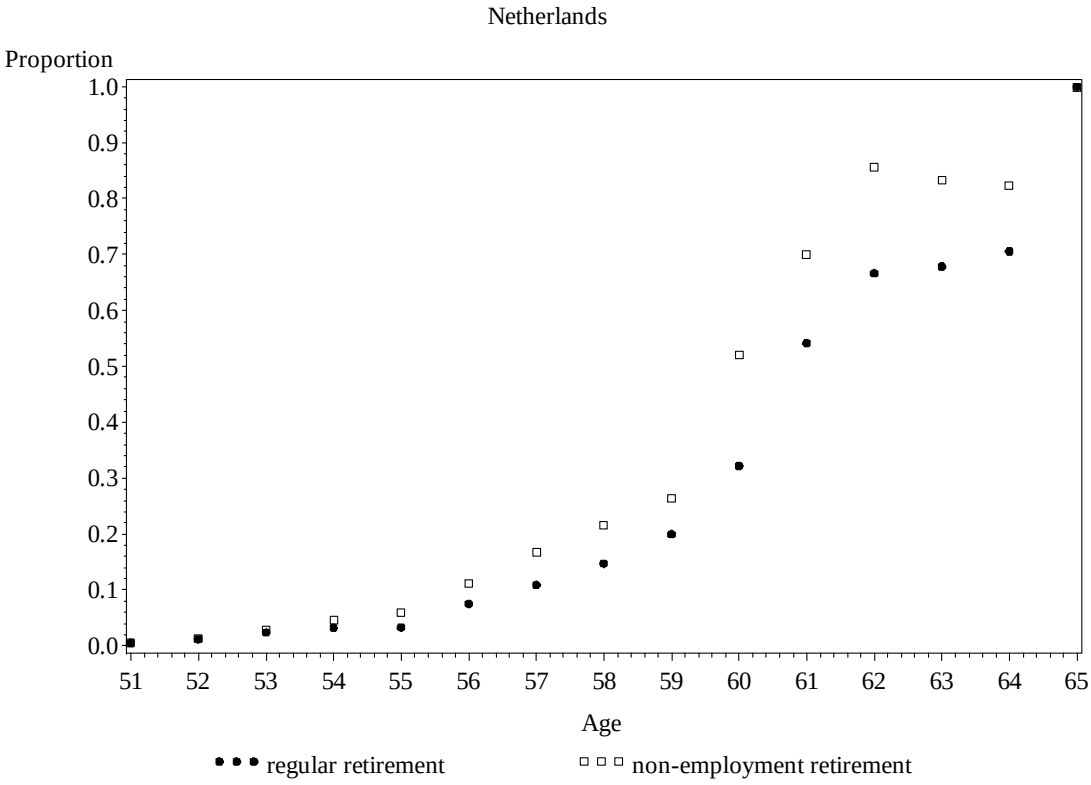
	State in year		
Spell number	1998	1999	2000
1	Work	Work	Retire
2	Work	Non-employment	Retire
3	Work	Non-employment	Work

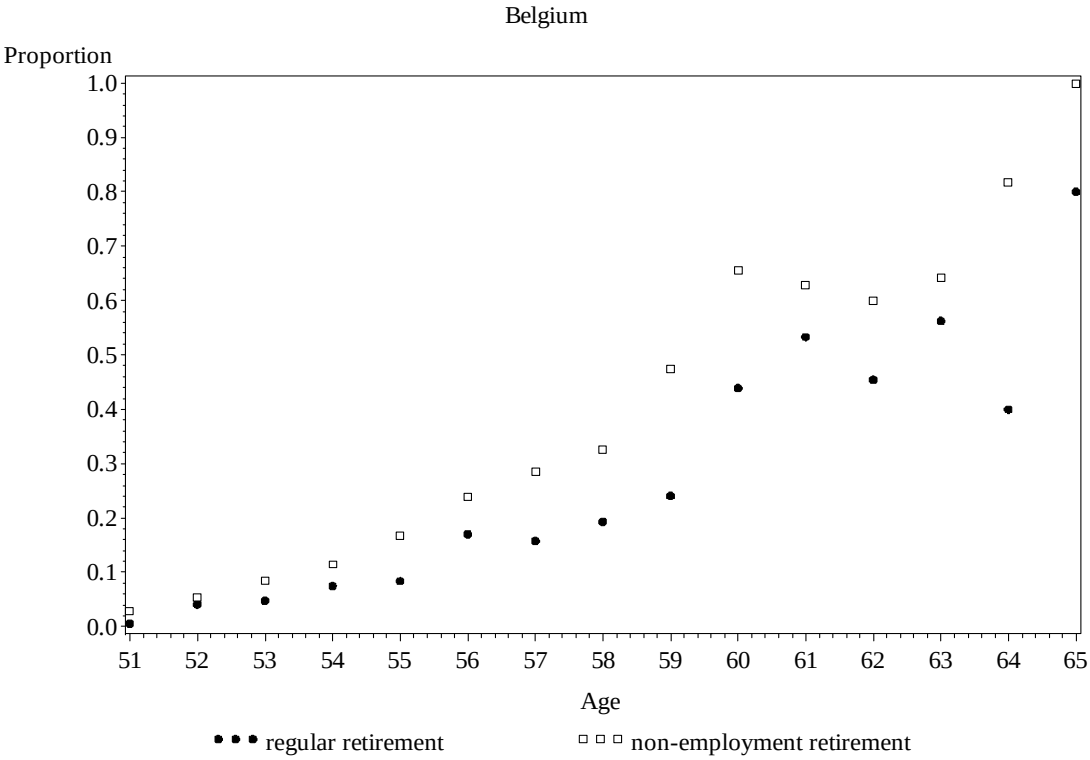
The 'regular retirement route' is retirement directly from work. Individuals with spell 1 have a regular retirement route. An individual with the 'non-employment retirement route' retires after a period of non-employment. The individual with spell 2 has this route. The person with spell 3 is not retired during the period we study. The incident of non-employment in 1999 is temporary non-employment. Finally, for a number of individuals, the last observed state is non-employment. Individuals with such spells are in the study considered to participate in the labour market even though it might very well be that the person actually transit into e.g. early retirement and the person therefore is on the non-employment retirement route. We experimented with adjusting the classifications of such spells, but it appeared not to be worth the effort.

Below we show (by age and country) in figure 1 proportions of the population in two retirement categories (regular retirement = early retirement plus disability benefit, and non-employment retirement = regular retirement plus non-employment spells that eventually end with regular retirement) and in figure 2 transitions into the two retirement states (from their complements).

Figure 1. Proportions of the men who are retired, by country and age.






Belgium
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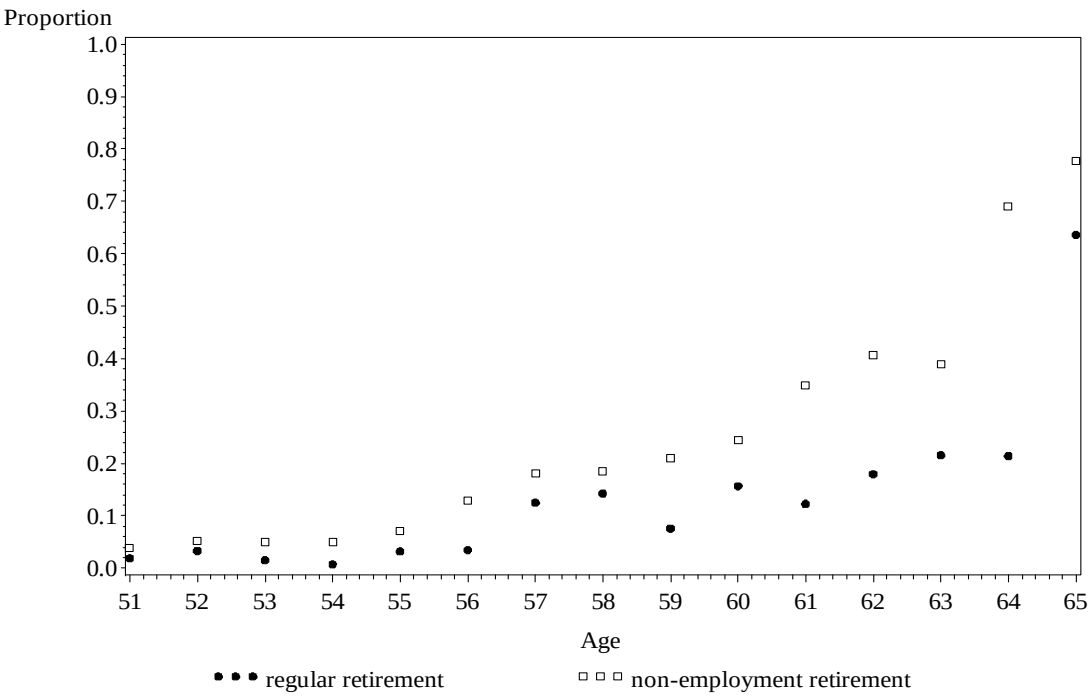
Age
regular retirement
non-employment retirement


Ireland
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Age
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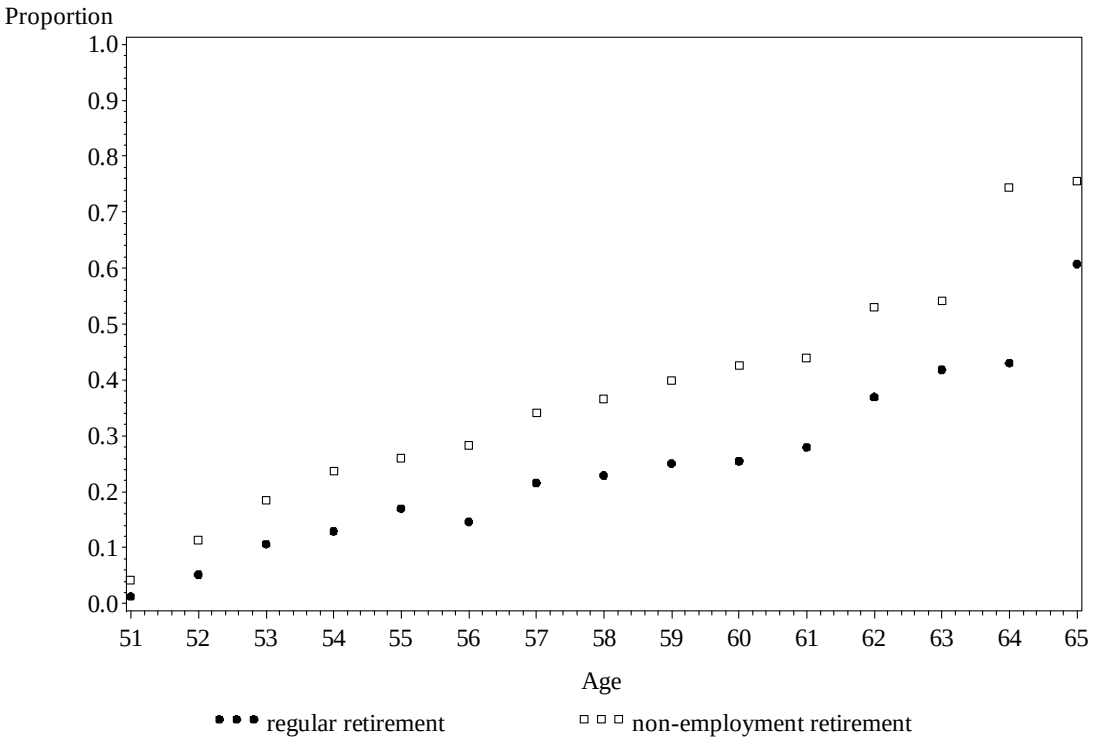
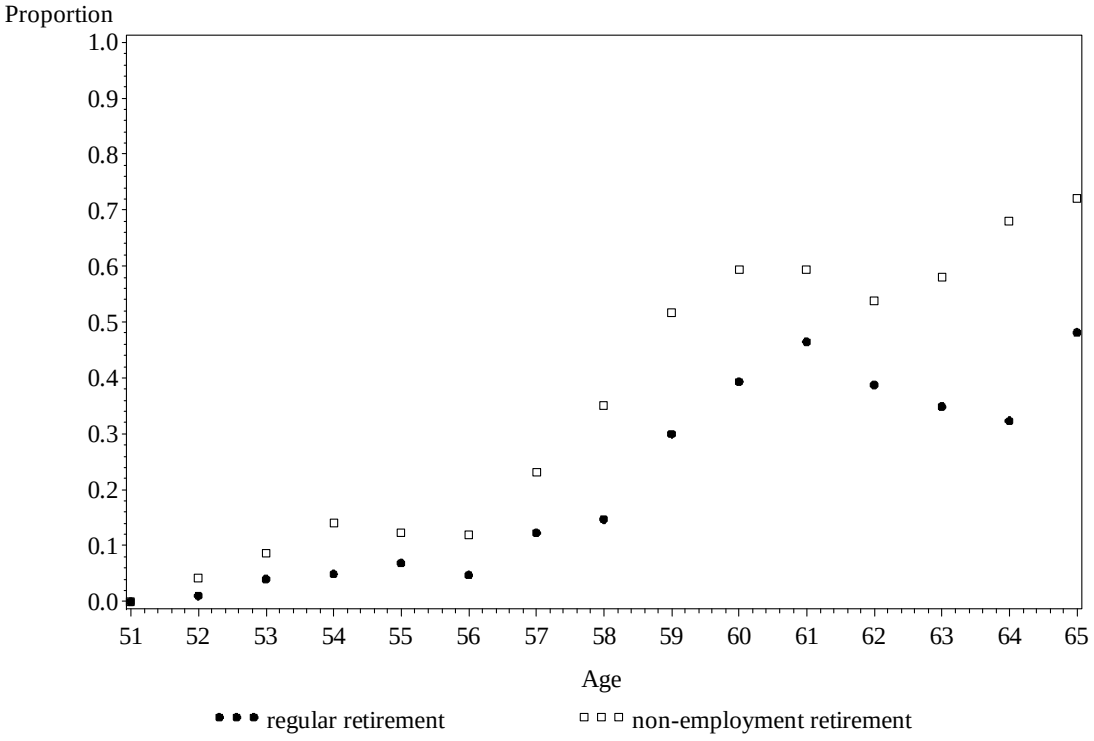
non-employment retirement

Italy



Greece



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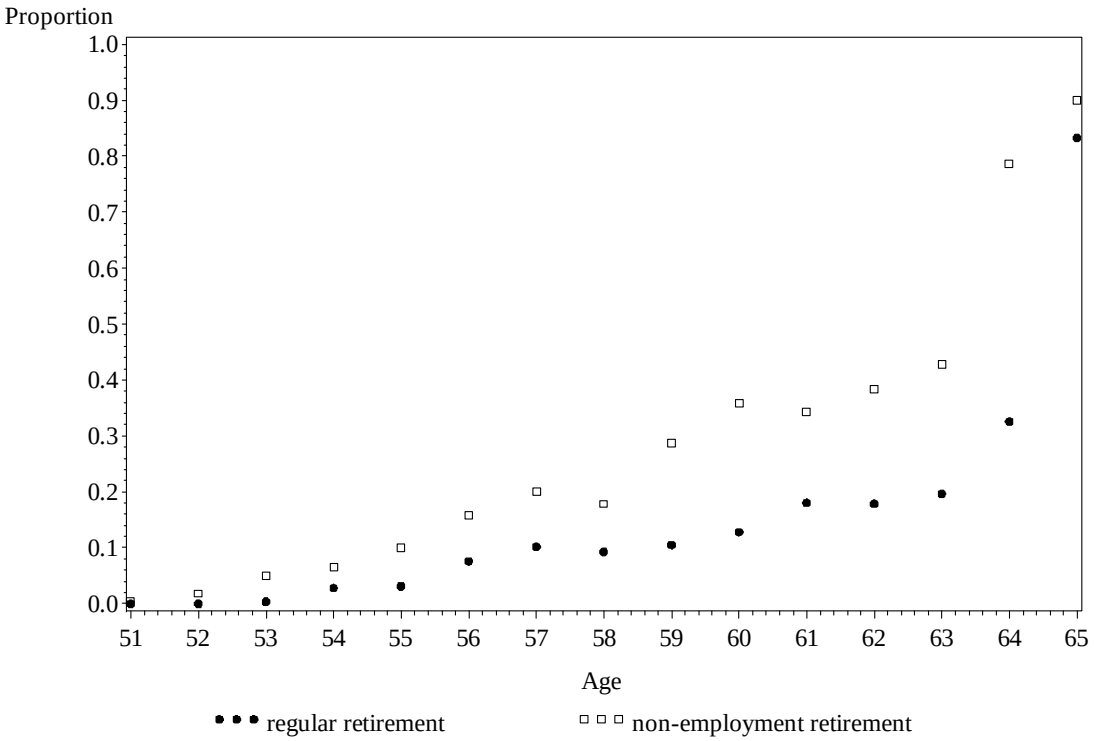

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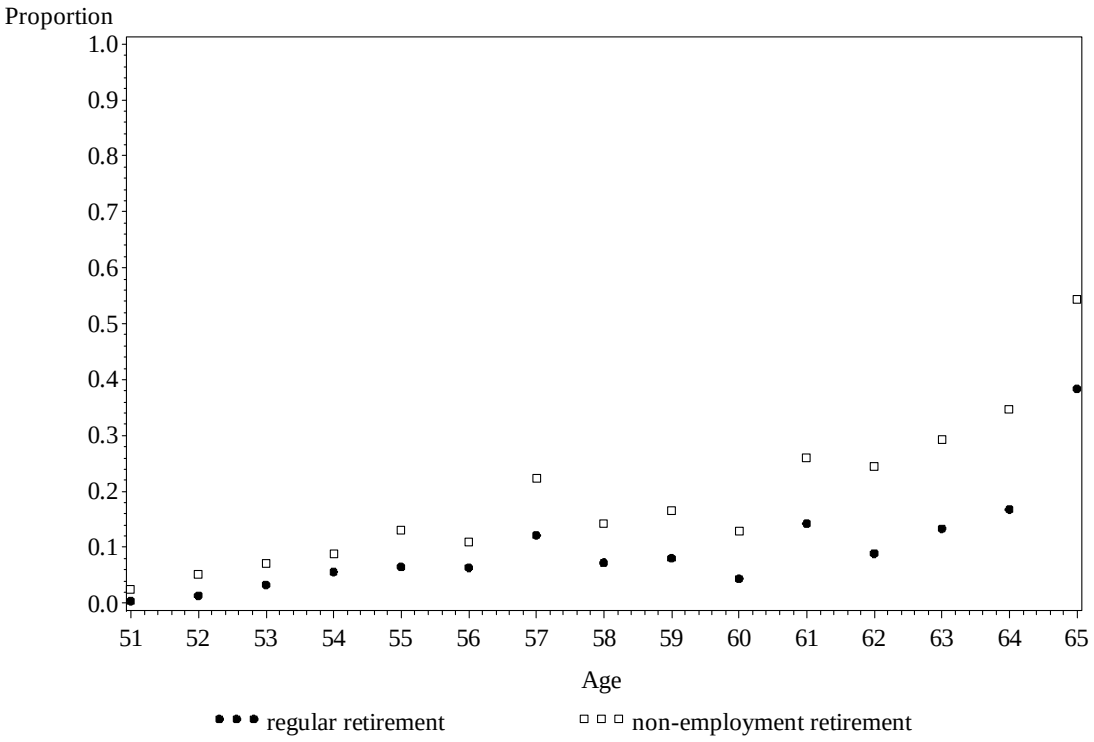
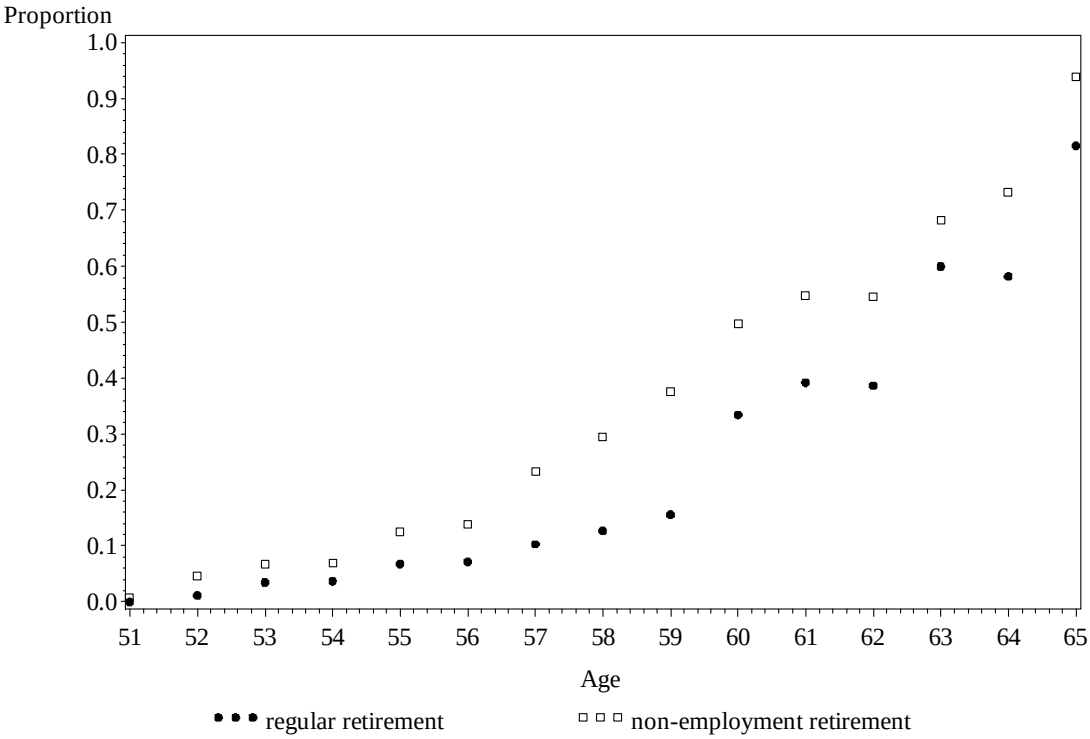


Germany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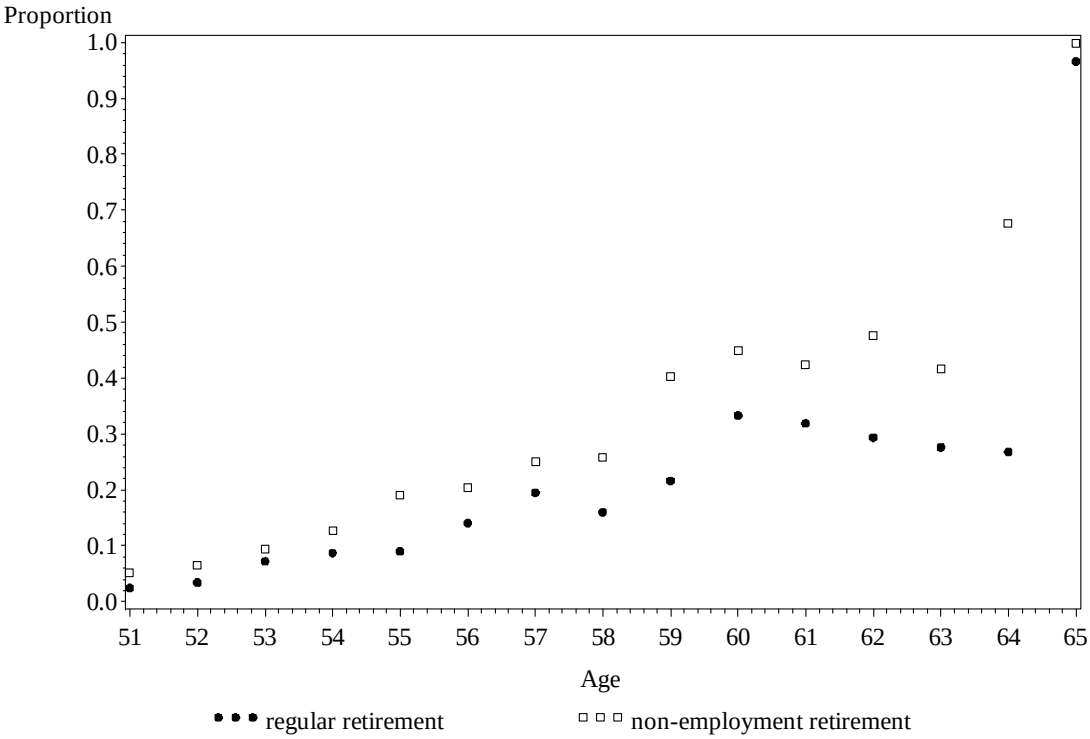
Age
regular retirement
non-employment retirement

UK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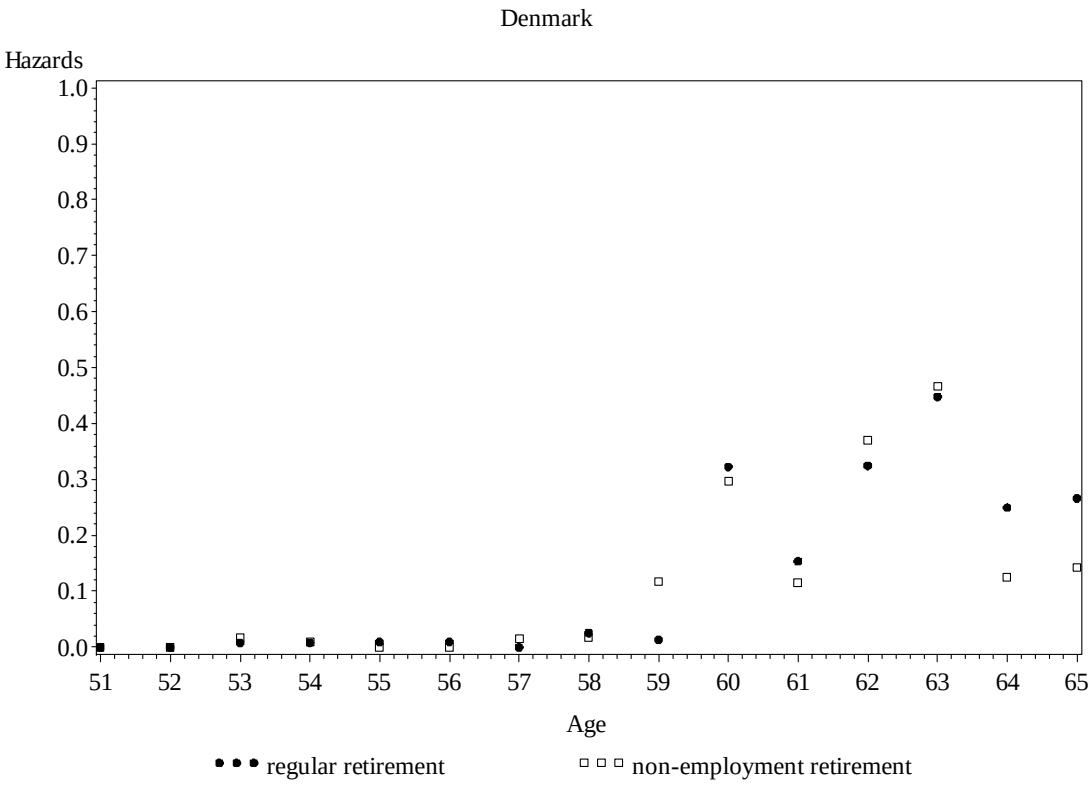
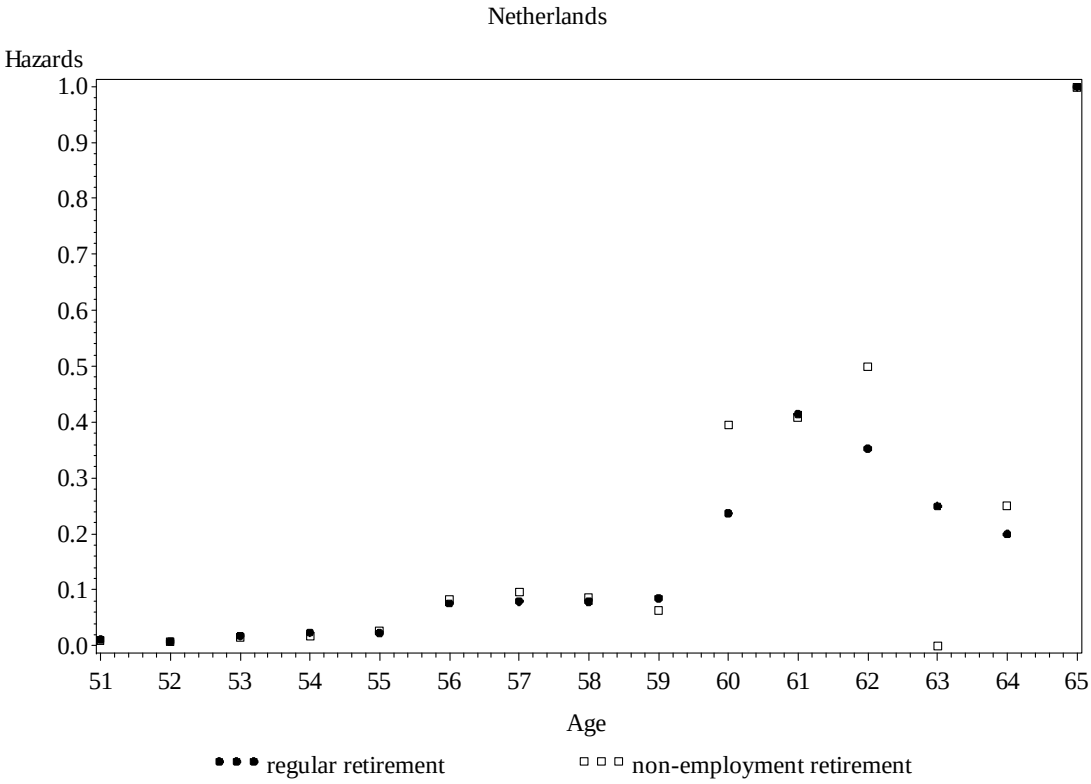
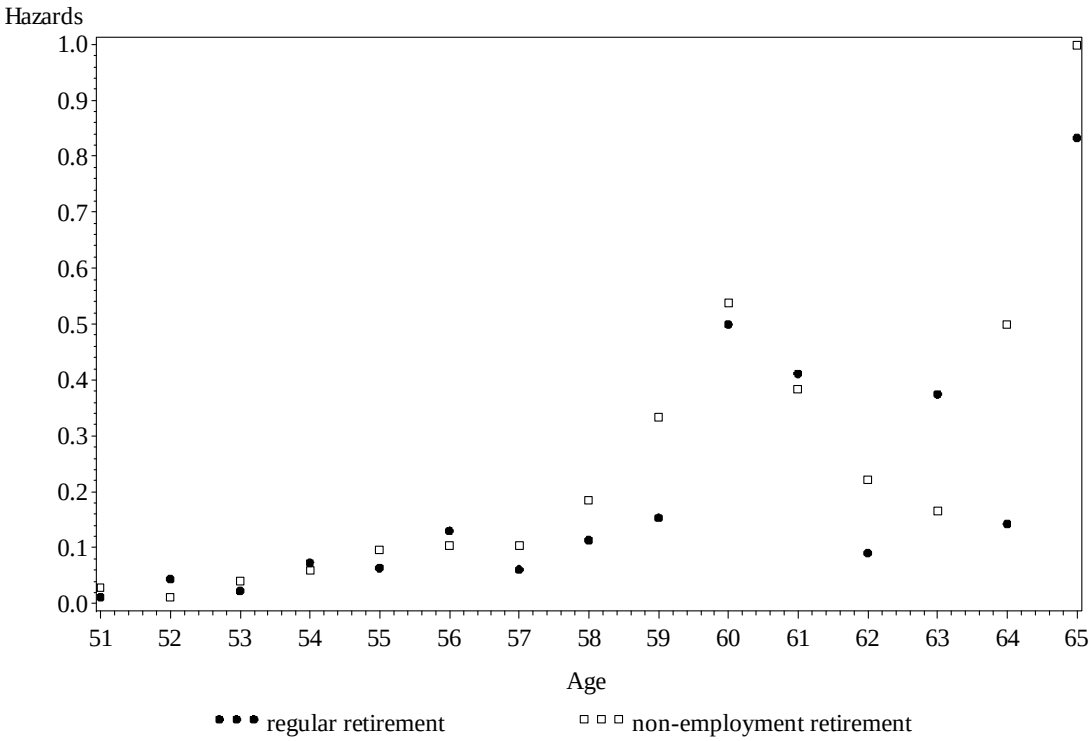
Age
regular retirement
non-employment retirement

Figure 2. Transition into retirement, by country and age.

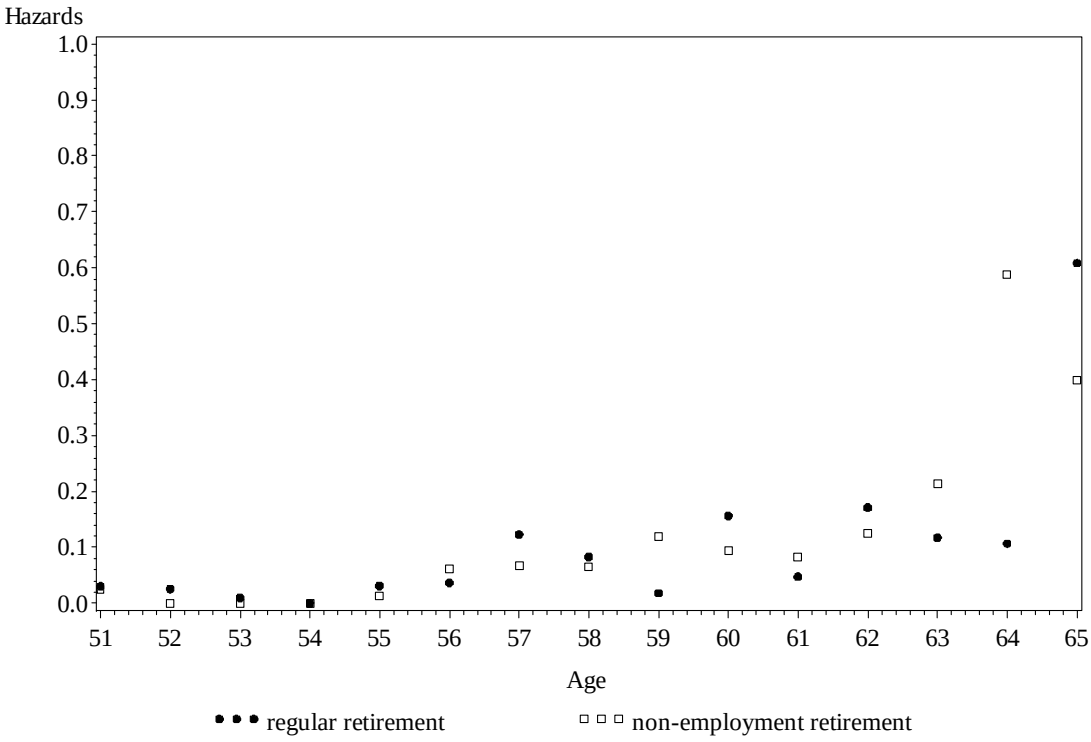




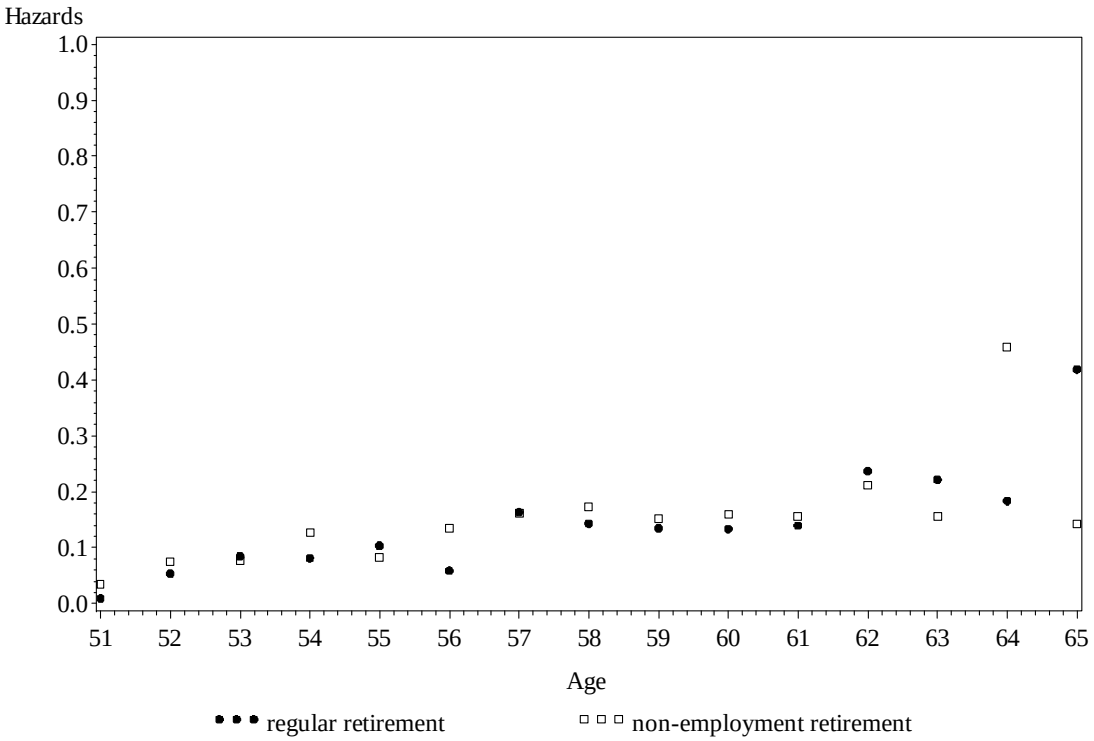
Belgium



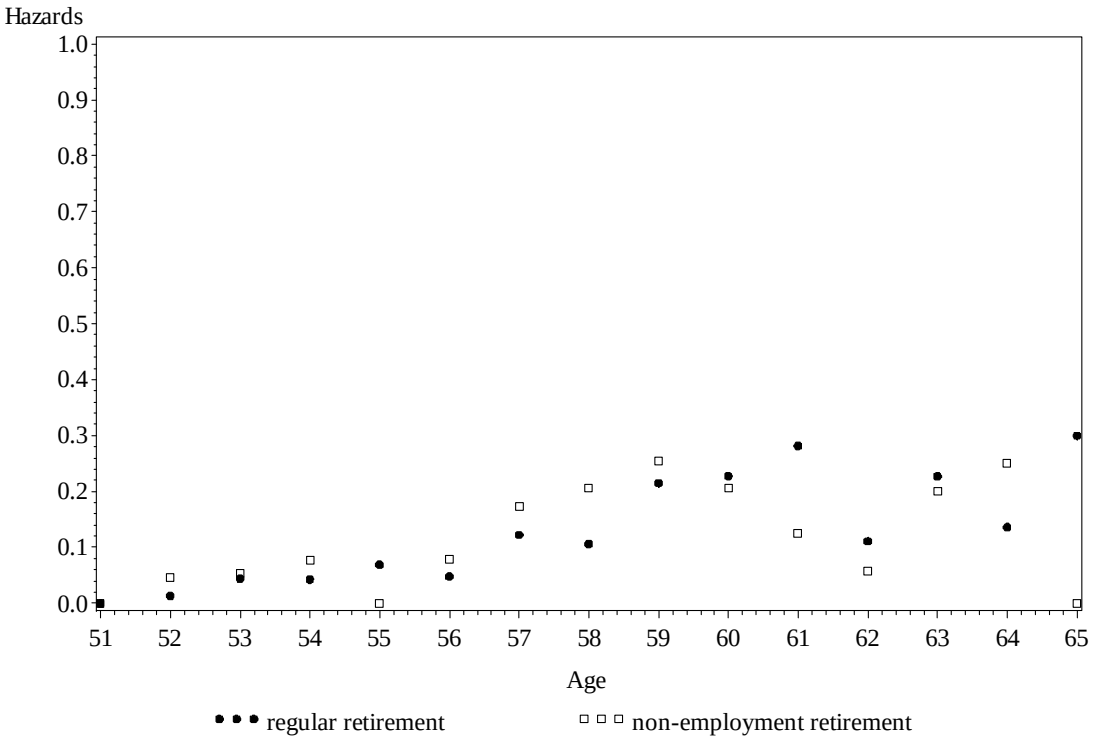
Ireland



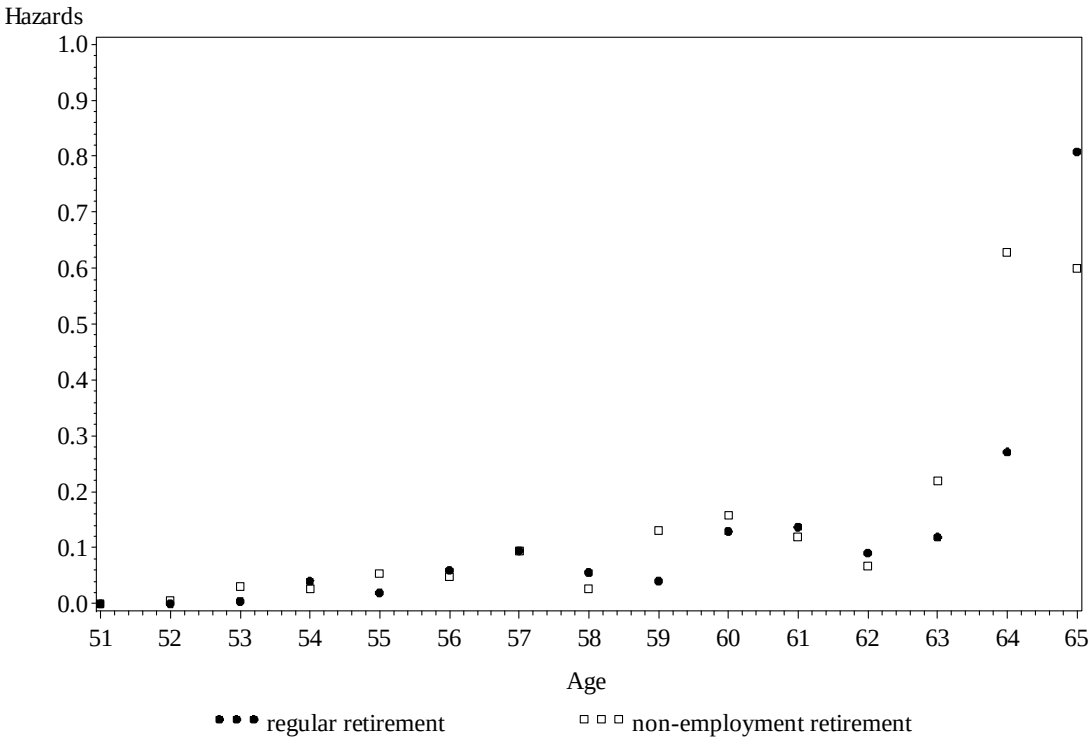
Italy



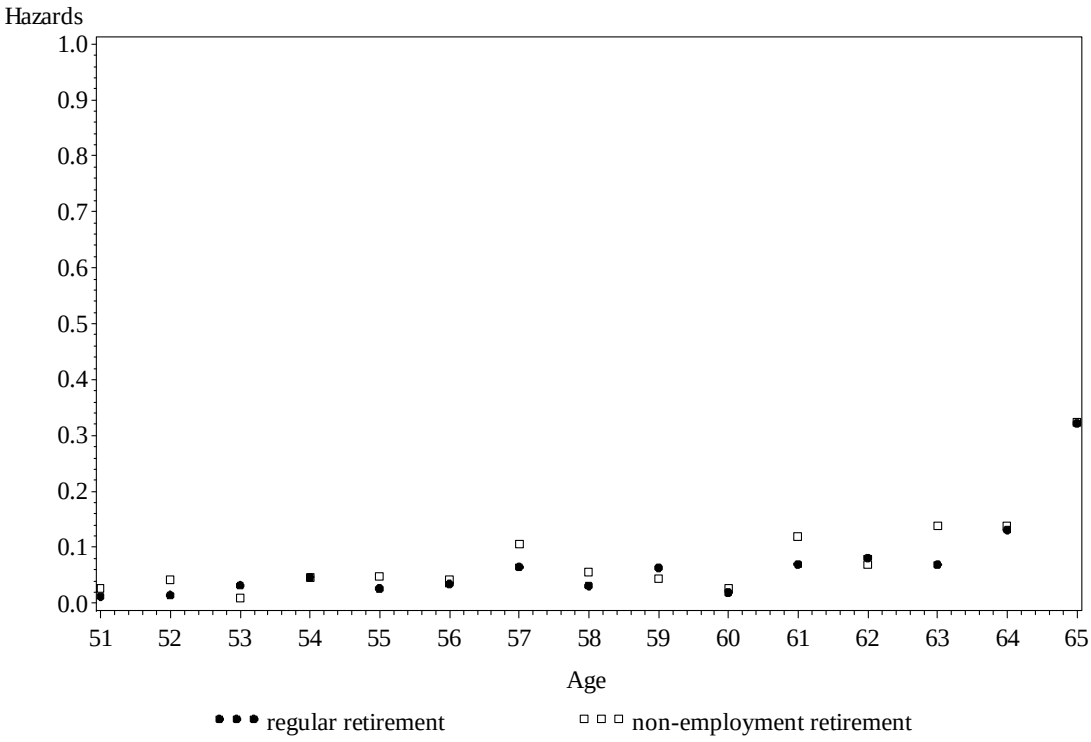
Greece



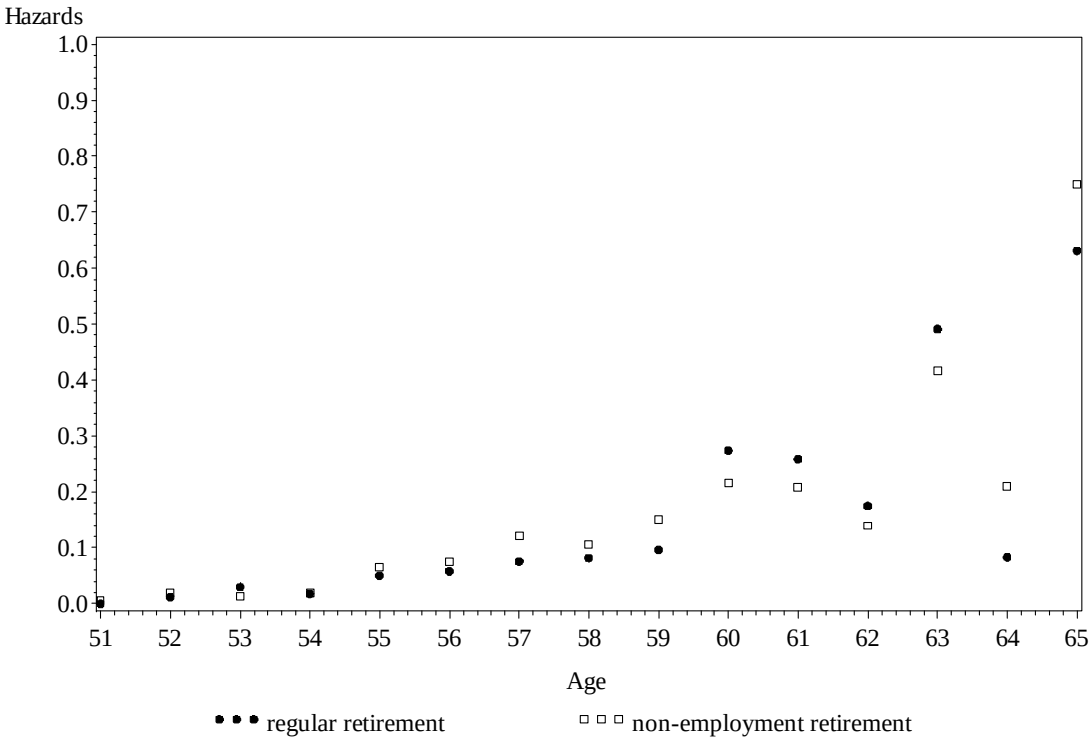
Spain



Portugal



Germany


Hazards
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Age
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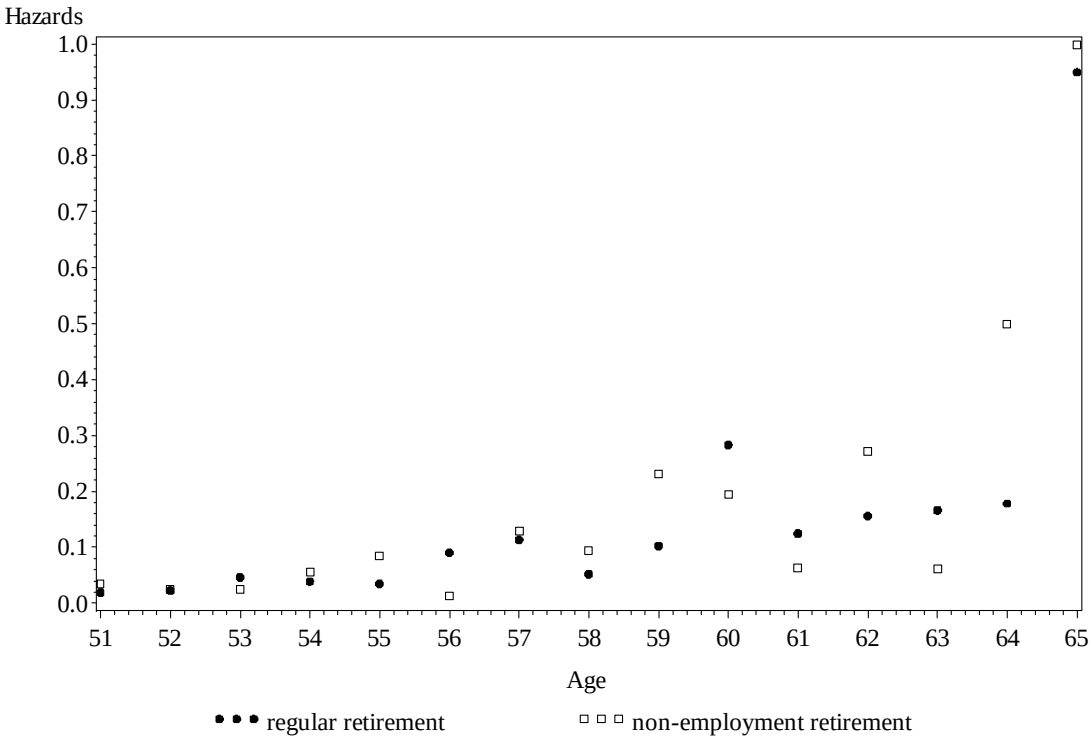
non-employment retirement

UK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Age
regular retirement
non-employment retirement

Comparison of ‘regular retirement’ and ‘unemployment retirement’ shows that the number of people that retire via a period of unemployment (the difference between the curves) is of great quantitative importance. Second, jumps at certain ages (minimum ages of entitlement to early retirement) might be slightly lower judged by ‘unemployment retirement’ compared to ‘regular retirement’. If ‘unemployment retirement’ really is relatively smooth across ages, the jumps in ‘regular retirement’ is caused by a large number of people that transits from e.g. unemployment insurance benefit to regular retirement.

4. Estimation method

We use the first and largest part of this section to compare the variables used in this study to the variables used in most other recent studies. We do this in order to describe the ‘pros’ and ‘cons’ of using simple variables to estimate across countries compared to using advanced variables within each country. In the final part of the section, we describe the duration models we use to estimate the effects of benefit rates.

4.1. Simple vs. detailed description of retirement programmes

In general, the important factors in the design of early retirement programmes are the lowest age at which a person can collect the benefit, the coverage of the programmes, and the benefit levels. In many countries, these factors depend on the individual’s

work history or history of contribution to the programme. The benefit level often depends upon the age at which the individual first collects the benefit.

Consider an employed man at the age of (say) 50. Economic theory suggest that he makes his retirement plans by looking at the future retirement benefits that he is entitled to under various circumstances. If the lower age limit for early retirement is 60, he might wait to retire until that year. If the (yearly) retirement benefit increases significantly if he postpones retirement further, he might actually do so. An empirical analysis based on information about individuals should therefore ideally include detailed information about each individual's future entitlement to benefits. A measure that often enters empirical studies of retirement is the value of being entitled to a particular programme, i.e. social security wealth, SSW. This includes the total value of payments from the programme. Below, we illustrate a simple version of SSW and other 'detailed' statistical measures. We let these measures depend on benefit payments, b, age, a, the first year of retirement, r (retirement age), and wage, w. In most countries, such programmes are not 'actuarial fair' in the sense that if a person works beyond the first age at which he is entitled to benefits, the value of SSW is reduced due to forgone payouts. This constitutes an implicit tax on working which is called an accrual rate, $ACCR$. The accrual rate describes the increase of SSW if the person works an extra year. It is typically positive for ages below the lower age limit for early retirement, but negative for ages above this age. In options value models, the studied persons are explicitly assumed to be forward looking and consider future benefits. A person at age a is assumed to consider his entire utility stream from e.g.

wage and benefits if he retires at age r. He then compares all values of r and chooses the utility maximising retirement age. Below, a purely pecuniary based version of the value of retiring at age r for a person of age a_0, V, is presented. We assume for simplicity a fixed plan of horizon, T.

$$SSW(r) = \sum_{a=r}^{T} b(a,r,w)$$
$$ACCR(r) = SSW(r+1) - SSW(r) \quad (1)$$
$$\text{(pure pecuniary version of OV) } V(a_0,r) = \sum_{a=a_0}^{r-1} w(a) + \sum_{a=r}^{T} b(a,r,w)$$

[2]In our estimations we use as the main variable that capture economic incentives the simple retirement benefit, b. We estimate b as a function of age and wage in each country. If the benefit rate is relatively insensitive to the retirement age, r, then this simple estimate is a good approximation of the accrual rate, $ACCR$. In option value models, the value of $V(a_0,r)$ is compared for all values of r. Comparing for example $r+1$ with r, we get $V(r+1)-V(r) = w-b$. Hence, if the benefit rate is not affected by age or retirement age, the use of the simple benefit rate (and the wage rate) in the estimations may capture incentive effects from retirement programmes as well as it is done in option value models. Of course, benefit rates do often depend on retirement ages.

[2] If the wage rate is greater than the benefit rate for all ages, the person never retires. Hence the equation is only shown for expository purposes. In option value models used in the literature, people retire because disutility of work increase with age, the wage might decrease with age for old people, and because the utility derived from income is greater in retirement.

We should note however, that even though the definitions of e.g. *SSW* above may be theoretically nice, the empirical application is not without problems, because entitlement and the benefit level may depend upon complicated work histories which often is not described in typical surveys or data sets derived from administrative registers. Duval (2003) estimates across countries with aggregate time series data so that he do not have to relate benefits to complicated individual work histories. He uses country fixed effects, time trends, and a measures of the accrual rate as the only explanatory variables. He finds strong effects from retirement programmes.

Even though benefit rates calculated in the simple manner explained above are the main variables that capture incentive effects from the social benefit programmes, we do in fact use indicator-variables for some of the detailed characteristics of retirement programmes which are also included in variables such as *SSW* . These are explained now.

We use the number of years until the lower age-limit for eligibility for the main public early retirement programme is reached. This variable is constructed with the use of information from the U.S. Social Security Administration's description of social programmes around the world.[3] From my interpretation of that information, I use the following lower age-limits for early retirement.

[3] See http://www.ssa.gov/policy/docs/progdesc/ssptw/2004-2005/europe/index.html.

Table 3. Lower age-limits for early retirement eligibility, by country

Country	Lower age-limit for eligibility for early retirement programmes
Belgium	60 years
Denmark	60 years
	50 years if the person is unemployed[1]
Germany	63 years
	60 years if the person is unemployed[1]
Ireland	55 years if the person is unemployed[1]
Greece	60 years
Spain	61 years if the person is unemployed[1]
Portugal	60 years if the person is unemployed[1]
UK	60 years if the person is unemployed[1]
All other countries	65 (= 'normal retirement' age, i.e. the lower age-limit for old-age retirement).

[1]: In our study, a person is characterised as unemployed if he or she is not classified as working, collecting early retirement benefits or collecting disability benefit the previous year. The age-limits are the author's interpretation of information collected by the U.S. Social Security Administration. See http://www.ssa.gov/policy/docs/progdesc/ssptw/2004-2005/europe/index.html.

Please note that in our study, retirement can occur before the lower age-limits mentioned above because we study a merging of many schemes.

Benefit rates are estimated as a function of age as explained above. We experimented with the use of the parameter to the age-variable as an explanatory variable. This could serve as a crude indication of the increase of benefit rates if benefit collection is postponed for a year. The variable did however not turn out to give significant parameters and is therefore not included in the estimations below.

We now try to explain what we believe is the advantage of estimating across countries. Consider for expository purposes the latent variable I, which is assumed to measure the tendency for working individuals to retire. Let $w, b, a,$ and c denote wage rate, benefit rate, age and country indicators, and let β denote parameters to be

estimated, and let e be an error term. We assume below that the benefit rate depends on age, wage, and the country.

$$I = \beta_b b(a, w, c) + \beta_w w + \beta_a a + e \tag{2}$$

We use cross-country variation of benefit rates to reduce two problems. First, if benefits really are a function of age and wage rate, and these variables themselves also enter the latent variable, then it might be difficult to disentangle effects from the three variables due to covariation of these variables, unless we estimate across countries. Estimation across countries only solves this problem if country specific dummies do not enter (1) – i.e. a term $\beta_c c$ does not enter (2).

Second, a classical problem in estimating β-parameters in I is that the wage rate and the error term might be correlated across individuals because it is a very reasonable assumption that people with high wage on average have low disutility for work. By using cross-country information and an assumption about identical distribution of work-disutility in various countries we can reduce the consequences of such covariance. Suppose the residual, e, consists of an individual specific term, d, and a noise term, ε. Let sub-index i and t denote the individual and the time period. Furthermore let $\overline{w}_i^c$ denote the average wage rate in the country where i lives. We assume

$$\begin{aligned} e_{it} &= d_i + \varepsilon_{it} \\ d_i &= \alpha \frac{w_i}{\overline{w}_i^c} \end{aligned} \tag{3}$$

By controlling for $w_i/\overline{w}_i^c$ in the estimation, we reduce bias of estimated parameters due to covariance of the wage rate and the error term e. The equation $d_i = \alpha w_i/\overline{w}_i^c$ reflects a reasonable assumption, namely that average disutility of work (d) is the same across countries (α) and that individual disutility is correlated with wages within each countries. The assumption of perfect correlation is of course extreme.

4.2. Estimation equations

We estimate hazard rates, ϕ, for exit out of 'employment/labour market participation' and into 'retirement'

$$\phi = \frac{\exp(I)}{\exp(I)+1} \tag{4}$$

We estimate three versions. In model 1, we estimate whether people enter into 'disability benefit or early retirement' from the complement of these states. In table 2 above, this occurs for spell 1 and 2 in 2000. In model 2, we also include spells of 'non-employment' that end with disability benefit or early retirement as transitions out of the labour market. Hence, 'retirement' occurs for spell 2 in 1999 and for spell 1 in 2000. Finally, in model 3, we distinguished explicitly between the 'regular retirement route' and the 'non-employment retirement route'. Transition out of the labour market occurs via the regular retirement route in 2000 for spell 1 and via the non-employment retirement route for spell 2 in 1999. We estimate a competing hazards model in this case.

5. Results

Table 4 presents the results of the analyses.

Tabel 4. Results from estimation of retirement

	Model 1 (Retirement =DB or ER)	Model 2 (Retirement = DB or ER or certain non-employment-spells)	Model 3 regular retirement route	Model 3 non-employment retirement route
Rate of retirement benefit	1.100	0.545	1.060	0.618
	(0.167)	(0.153)	(0.230)	(0.239)
No. of years to early retirement eligibility ... from employment.	0.024	-0.008	-0.052	0.034
	(0.023)	(0.025)	(0.036)	(0.034)
... from unemployment	-0.002	0.035	0.043	-0.000
	(0.015)	(0.016)	(0.021)	(0.026)
Relative wage	-0.091	-0.087	-0.161	-0.151
	(0.079)	(0.083)	(0.125)	(0.116)
Estimated wage rate at 50 years of age	3.616	1.560	2.097	1.874
	(0.214)	(0.262)	(0.398)	(0.402)
Wage X age/60	-4.182	-1.734	-2.429	-1.966
	(0.292)	(0.308)	(0.457)	(0.436)

Source: European Community Household Panel. Own calculations.

Note: The sample consists of 3674 men between 55 and 64 who were employed in the initial period they participated in the survey, typically 1995. We study the years 1995(1996) to 2000 (retirement cannot occur for the sample in 1995). We estimate transition into 'retirement' from 'employment/labour market participation'. The variables that enter the model besides those in the table are: a constant, age, a bivariate health indicatior, a bivariate indicator for eligibility to occupational retirement programmes, the dummy for being a single, spouse's income, average income from work in the country, employment the year prior to retirement, an indicator for being able to afford to invite friends to dinner, an indicator for being able to make ends meet economically in the family, and country dummies for Germany, the UK, Spain, and Portugal. Only age and number of years until retirement eligibility are time variant variables. Other variables are measured at the first year the individual participates in the survey.

First of all, a high retirement benefit rate increases the probability of retirement. The result is statistically significant and the parameter appears quite large. The parameter is relatively large if non-employment spells are not included in 'retirement' (1.100 versus 0.545 and 1.060 versus 0.618). This makes sense because retirement via unemployment surely is caused by labour market demand shocks as much as pecuniary choices of the individuals. (Note, though, that the unemployment benefit rate does not enter the model.) The duration until eligibility to early retirement does

not enter significantly and with expected signs in the model, except perhaps in the competing hazards model in the latent variable for direct retirement. Note that these variables describe number of years until eligibility for a specific early retirement programme. In our estimations, early retirement may also occur via other programmes, most notably the disability benefit programme. The important control variable, the relative wage (individual wage relative to country average) enters the model in the expected way. The parameters are not significantly different from zero, but they do have some explanatory power. Wage enters the model in combination with age. The higher the wage rate, the less will an extra year increase the probability of retirement. Or, alternatively stated, the higher the age, the more will an extra unit of wage income reduce the probability of retirement.

6. Conclusion

We find clear effects of the level of retirement benefit on the retirement decision when we estimate across countries. The assumption that makes this interpretation possible is that country specific unobserved characteristics do no affect retirement behaviour. The cross-country estimations allows for a natural way to control for individual unobserved characteristics.

Whereas the economic variables that describes the retirement programmes in this paper (simple benefit rates) are much less advanced than measures used in within-country studies (e.g. social security wealth), those ad-hoc measures that we actually

use to try and approach advanced measures (e.g. years until eligibility) do not have much explanatory power.

Overall, the study suggests that cross-country estimation might be a fruitful approach as a supplement to within-country estimation, even if a loss of accuracy in describing social programmes is a price paid.

Literature

Gruber, Jonathan, David A. Wise (2004): "Introduction and Summary" in Gruber, and Wise (ed.) "Social Security Programs and Retirement around the World: Micro-Estimation", The University of Chicago Press, p. 1-40.

Duval, Romain (2003): "The retirement effects of old-age pensions and early retirement schemes in OECD countries", OECD, Economics Department, Working Paper no. 370.

Appendix about the data

Income is measured before tax in the ECHP. The effect on e.g. choice of labour supply of various tax rates and tax rules across countries is consequently ignored. Income variables (and other nominal measures) are calculated in common currency (ECU) and deflated into year 1995-prices (using the Danish inflation rates and the purchasing-power-adjusted exchange rates in the ECHP to calculate an 'ECU-inflation rate').

The classification into five states described in section 2 is based on the question numbers shown in table A1. To most programmes mentioned in table A1, a monthly income rate is asked for. The relevant ECHP question number for incomes is the number in table 1 plus 10. The monthly wages is asked for in question 0600. (For ECHP 1995, the last digit (always 0) is omitted.)

Table A1. Definition of states on the basis of the ECHP data set

State	Criterion for primary indicator	
	Abstract	Questions in the ECHP production data base, individual questionnaire file
Disability benefit	Obtains disability benefit	3160
Early retirement	Participate in some type of early retirement scheme	2590, 2660, 2470
Employment	Works more 15 hours a week	0010
Unemployment	Obtains unemployment insurance benefit, social assistance, participate in training programmes, sickness benefit	2310, 2370, 2400, 3070
Residual/'home'	Not any of the above	None

Note The sequence in first column is equal to 'priority' used to make the final classification.

Table A2 shows the results of the estimation of benefit rates described in section 2.

Table A2. Parameters related explanatory values in OLS-estimation of benefit on the disability benefit programme or on an early retirement programmes

	Constant	Income from work	Man	Age	R^2
Denmark	-507.98	0.32648	140.811	13.5973	0.30
The Netherlands	-2543.28	0.02638	350.204	57.9095	0.14
Belgium	175.32	0.33201	119.390	4.7446	0.23
Ireland	-807.73	0.35737	-82.238	17.3290	0.36
Italy	322.63	0.41338	233.948	-1.4611	0.29
Greece	911.59	0.53363	177.396	-13.2731	0.47
Spain	876.74	0.68165	328.793	-16.2060	0.11
Portugal	2407.96	0.70123	1.632	-37.2309	0.61
Germany	-895.15	0.86879	107.248	12.3337	0.58
UK	745.97	0.36377	125.662	-12.0966	0.14

Source The ECHP. Own calculations.

Table A3 shows wage rates and benefit rates for early retirement and disability benefit by country. We also show the statistics for women. Remember that early retirement and disability benefit are merged in the estimations in the paper.

Table A3. Average wage rate and benefit rates, by country and gender

Country	Gender	Average wage and participants' average benefit		
		Wage rate, 1995	Early retirement benefit	Disability benefit
be	Women	1233.23	1001.60	508.90
	Men	1469.97	1137.79	819.13
de	Women	1005.18	668.63	696.58
	Men	1388.33	1219.58	767.15
dk	Women	1171.99	799.98	677.03
	Men	1369.68	868.88	675.12
es	Women	1122.45	511.54	643.51
	Men	1343.81	1170.97	879.38
gr	Women	797.86	582.11	.
	Men	992.13	883.45	583.20
ir	Women	1365.93	647.39	534.46
	Men	1965.56	990.88	561.69
it	Women	1219.09	772.53	185.01
	Men	1263.99	978.67	578.42
nl	Women	1269.40	810.19	674.91
	Men	1627.73	1462.98	871.98
pt	Women	751.01	943.52	168.44
	Men	749.72	1057.41	502.50
uk	Women	1053.52	391.00	325.63
	Men	1403.16	857.54	342.21

Source and notes: The 1995-wage rates are calculated across all individual in the same (the sample consists of employed individuals with a recorded income). Benefit rates are calculated across participants (with a recorded benefit rate).

Overall, for each country, the relationship between wages and benefit rates and the relationship between rates for men and women appear as one might expect. Across countries, the levels for some countries (Spain and Ireland) appear very high. One explanation might be that the sample might not be representative.