Health Shocks and Retirement: The Role of Welfare State Institutions

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Abstract: We investigate the effect of an acute health shock on retirement among elderly male workers in Denmark, 1991-1999, and in particular whether various welfare state programs and institutions impinge on the retirement effect. The results show that an acute health event increases the retirement chances of elderly male workers by 8%, and that this increase in the baseline retirement probability is not affected by eligibility to early exit programs and persists even after accounting for selection due to take-up of disability pension. Neither is it affected by the relatively long duration of sickness benefits in Denmark nor by the promotion of corporate social responsibility initiatives since the mid-1990s. In the late 1990s, however, the retirement rate following a health shock is reduced to 3% with the introduction of the subsidized employment program (*fleksjob*) but this effect is on the margin of being significant. For the most part, the retirement effect following a health shock seems to be immune to the availability of a multitude of government programs for older workers in Denmark.

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1. Introduction

Health shocks significantly alter workers' retirement plans, in fact more so than already existing health conditions. Dwyer and Hu (2000) find that developing a new work limitation between 2 waves of the U.S. HRS data increases the likelihood of retirement more than having a persistent limitation. Previous research by Riphahn (1998) based on the GSEOP finds that following a sudden drop in self-reported health satisfaction, older German workers are more likely to leave the labour force and suffer a decline in income which does not appear to be reimbursed by the benefits system. Coile (2004) finds that the shock effect of an unexpected health event such as a heart attack or the onset of a new chronic condition leads to a serious financial loss for the family mainly due to the reduced labour supply of the affected spouse, since added worker effects are small. Further, Coile and Milligan (2005) give evidence that such health shocks lead to a decline in business ownership and portfolio reduction.

None of the previous studies has directly assessed the role of particular institutions or policy instruments of the welfare state in influencing health-related exit from the labour market. Welfare state institutions which are designed to shield workers from the risks of unexpected negative effects can interact in important ways to strengthen or even weaken labour market attachment following a health shock. We explore the interaction between welfare state programs and negative health events experienced by elderly male workers in Denmark by way of simple reduced-form panel retirement age models which estimate the effect on the probability of retirement of new health disturbances that occur within the sample period on data drawn from the Danish Longitudinal Registers. The aim of this paper is to identify the retirement effects of negative health shocks and to assess whether the multitude of programs available to

older workers in a well-developed welfare state economy impact retirement behaviour following a health shock.

To explore more closely the effects of the availability of welfare state programs on the impact of a health shock, four potential explanations are tested. First, we test whether the multitude of early exit options in the Danish welfare state may be siphoning out workers from the labour market, particularly low wage/low SES workers, a group for whom the replacement rate from early retirement pensions is high (see for example Bingley et al. 2004).[1] This type of selection may imply that the composition of the labour force at older ages in Denmark could be made up of predominantly high SES, white-collar workers in relatively better health who are more able to return to work following a health shock. For example, the medical literature shows that pre-existing comorbidities such as cardiac disease and poorer physical functioning – more prevalent among low SES groups (Marmot 2001) – are strongly related to worse work-related outcomes following myocardial infarction (McBurney et al. 2004). Among stroke patients, studies show that workers from white-collar occupations show a higher tendency to return to work (Saeki et al, 1995). Thus, taking into account exit through early retirement should reduce the retirement effect of a health shock.

Second, it may be the case that the relatively long duration of sickness benefits in Denmark (up to one full year within a 3-year window) allows workers with health problems to remain on the employment rolls longer. As the observation window following a given health shock is two years, the existence of a lengthy sickness benefits period may lead to an underestimation of the impact of a health shock on retirement. Similarly, vocational rehabilitation might be a pathway to retirement in those cases

[1] Although the normal age of retirement is 65 in Denmark, retirement at age 60 is widespread. Further, data from a Danish survey (*Ældredatabasen*) from 2002 show that among older workers almost 20% believe that remaining healthy will be an important aspect when they decide to retire.

where return to the labour market turns out to be impossible. The aim of this program is to retain and (re-)integrate individuals with reduced work capacity caused by physical, mental and/or social circumstances on the labour market. The program consists of e.g. an examination of the work capacity, courses, education in the ordinary educational system, and job training with a wage subsidy.

Third, our definition of retirement includes exit through disability pension. However, due to the generosity and relatively easy access to disability pension (eligibility criteria have been made stricter, though, in recent years), many older Danes with health problems may have already withdrawn themselves before the start of the sample period, so that those in the labour force may constitute a more selected group, health-wise.

Fourth, welfare state economies have, for many decades, had to confront the problem of large numbers of employable individuals being supported by public income transfers, even in more recent decades when unemployment has been historically low. In the 1990's two types of employment-enhancing initiatives were targeted in Denmark. One of these were *activation*, and the other, particularly relevant for the current analysis, was *corporate social responsibility* (CSR), see Rosdahl (2000). CSR was formally launched by a campaign undertaken by the Danish Ministry for Social Affairs in 1994. CSR emphasizes, among other things, the prevention of social problems which can lead to expulsion from the workplace and the retention of the long-term sick or disabled on the job. A related labour market program which focused on the retention of workers with health problems was the subsidized jobs program or *fleksjob*, introduced in 1998. As part of a move to create a more "spacious" labour market, employers were given wage subsidies to create special sheltered jobs with softer, more flexible working

conditions in order to be able to accommodate individuals with health problems. The take-up of subsidized jobs has been high, although this affects mostly the later years of our sample period.[2] Thus, the introduction of subsidized employment would be expected to reduce the retirement effect of a health shock.

Of key importance in our analysis is the quality of the health data. Self-reported health has been found to be prone to justification bias, see for example Anderson and Burkhauser (1985). In the case of a health shock, however, it is argued that since individuals are less likely to misreport the presence and/or new diagnosis of a specific condition, "objective" self-reported measures serve as good proxies. Yet, new findings by Baker et al. (2004) show considerable reporting error in these so-called "objective" measures as well. We circumvent these issues by applying purely objective medical diagnoses made at the time of hospital discharge available from the Danish National Patient Registry records and merged to the register sample we use. One shortcoming of objective health measures, however, is that they need not necessarily be correlated with work incapacity, see for example Bound (1991). We focus, however, on diagnoses made for acute discharges that are expected to impose serious work limitations such as heart attack, stroke or new cancer.

The rest of the paper is organized as follows: Section 2 discusses the data, Section 3 presents in brief the estimation method, Section 4 the results and Section 5 concludes and discusses policy implications of the results.

[2] In the second quarter of 2006, 12,000 men aged 45 and above were on subsidized jobs. Five years earlier, the corresponding figure was 3,400.

2. Data and Descriptives

The data used in this paper are obtained from a huge Danish longitudinal register database that includes yearly information on all persons aged over 44 years from 1980 to 2001. In addition, information on spouses/co-habitants (even those 44 and under) is included over the entire period. All in all, the database includes about 3.5 million persons. Further, the database contains a large number of variables, including information on demographics, individuals' labour market characteristics, financial aspects, transfer payments, and objective health measures. The health measures are merged in from the National Patient Registry, which has collected data on all 24-hour somatic hospital admissions since 1977. For each of these patient contacts, there is information on the hospital department admitting the patient, the diagnoses made, surgical procedures, date of admission, date of discharge and mode of admission (acute/non-acute).

Health shocks are defined on the basis of diagnoses. In our data, diagnoses are classified according to the ICD-8 system before 1994 and according to the ICD-10 system after. In particular, we focus on hospitalization due to a particular type of health shock, namely acute health events (heart attack, stroke, new cancer). An individual might be admitted to a hospital several times during a year. Moreover, more than one diagnosis might be attached to a particular admission. If more than one admission is recorded for an individual during a year, we focus on the first one. If more than one diagnosis is attached to this admission, we concentrate on the diagnosis which, according to the WHO's international guidelines, can be characterized as the main condition.

The definition of retirement is based on yearly information on the labour market status by the end of November. We choose to operate with the widest definition of retirement as possible so that retired individuals include those whose labour market status is given as receiving (early or normal) retirement benefits or social disability pension or are outside the labour market. In the analysis, controls are added for chronic illness, accidents, age, education, industry/occupation, year and wealth.

We begin with a 20% random sample from the population registers for the period 1991-2001 of men aged 51-61 years in 1991 corresponding to 643,335 person-year observations. We restrict ourselves to those men, who are observed for at least three consecutive years and were working in the first year of this three-year period. As long as these conditions are fulfilled, the men remain in the sample. New persons are not added, so the sample becomes increasingly older but are never allowed to exceed age 69 at any time during the sample period. Our sample includes information on every year in the period 1991-2001. Thereby, we construct nine three-year periods based on 11 full years of data (1991-1993, 1992-1994, 1993-1995 etc.). The sample restrictions leave 254,393 person-year observations.

Appendix Table 1 shows summary statistics for the full set of variables that we include in our basic model. Table 1 shows summary statistics for labour force status and health, our key variables. 16.8% of the sample exits the labour force through retirement during our sample period. 1.7% of the sample experiences a medically diagnosed health event in conjunction with hospitalization, while 2.7% falls ill from a new chronic illness and 1.6% experiences an accident.

The hazard rate of retirement for individuals who experience a health shock appears in Figure 1. This rate is calculated in each period as the number of individuals

retiring in the given period following a health shock divided by the total number of individuals experiencing a health shock who could have retired in that period. The figure shows that the (unadjusted) retirement hazard following a health shock is increasing during the sample period although a small decline takes place in the middle of this period.

3. Empirical Model

We estimate simple reduced-form pooled retirement probability models of the form:

$$R_{i,\,t+2} = \alpha + \beta\, HS_{i,\,t} + \gamma' X_{i,\,t} + \varepsilon_{i,\,t}$$

where *R* is the probability of retirement two years later, *HS* is a dummy for the occurrence of a health shock in the interval [*t, t+2*] and *X* is a vector of other controls which include dummies (reference category in parenthesis, whenever needed) for chronic illness, the occurrence of accidents, age (61 years in 1991), educational categories (Ph.D. and Doctor degree), industry/occupation indicators (hotels and restaurants), three-year period (the last period, 1999-2001) and wealth. We cluster standard errors at the individual level to adjust for correlation arising from the fact that most individuals are represented in more than one three-year period. Both linear probability (LPM) and probit models of retirement probability are estimated but as the probit results are nearly identical to the LPM, the former remains the chosen specification. We prefer a pooled model with cluster-adjusted standard errors at the individual level rather than a panel model such as fixed effects because the latter requires a lot of variation in the dependent variable which is not fulfilled in our case where individuals at most retire once during the sample period.

4. Results

Table 2 presents the findings on the key variables of the basic model. For the other model estimates, see Appendix Table 2. Both in the linear probability model (LPM) as well as in the probit specification, a health shock increases baseline retirement by 8 percentage points.

We test a number of potential explanations to examine whether the availability of welfare state programs affects the impact of health shocks on retirement. First, to test the selection hypothesis that the multitude of early exit options in the Danish welfare state is siphoning out particularly low wage/low SES workers with poorer general health from the labour market, we re-estimate the basic model including indicators for eligibility to successively, the Transitional Benefits Program (TBP) and the Voluntary Early Retirement Program (VERP) (see Table 3).

TBP is an early retirement program for the long-term unemployed that was opened to the 55(50)-59 age-group in the years 1992(94)-1996, eligibility being based on age, membership in an unemployment insurance fund and previous unemployment experience. The VERP is an early retirement program which is open to workers starting from age 60, eligibility being based on (besides age) continuous unemployment insurance membership for a number of years.[3] The Danish register data allows us to identify unemployment insurance membership as well as previous unemployment experience. Based on these, we create indicators for TBP and VERP eligibility which are added successively to the basic model. The results in Table 3 show that controlling

[3] Immediately following its introduction in 1979, the VERP became the most popular form of retirement among mainly blue-collar workers in Denmark resulting in a tremendous decline in the labour force participation rate in the 60-66 age group. For males, this rate dropped some 20 percentage points in the year after its introduction and another 20 percentage points over the maturity phase, see Bingley et al. (2004). The VERP has undergone a number of reforms, including an extensive reform in 1999. Previous studies find little evidence that reforms of the VERP have had a delaying impact on early retirement, see Larsen (2005).

for neither TBP nor VERP eligibility reduce the baseline retirement probability and the impact of a health shock on retirement remains around 7.5%.

Second, the existence of a lengthy sickness benefits period and of vocational benefits may lead to an underestimation of the effect of health shocks on retirement by allowing workers with health problems to remain on the employment rolls longer. Therefore, tentatively, we include sickness benefits and vocational rehabilitation benefits respectively in our definition of retirement. However, extending the definition of retirement does not move the estimated impact appreciably upwards as expected (see Table 4).

Third, many older Danes with health problems may have withdrawn themselves before the start of the sample period due to generosity and relatively easy access to disability pension. Therefore, we conduct an analysis in which we correct for potential sample selection due to disability by using a Heckman two-step procedure. The included variables are age, education and wealth and as instrument we employ the regional disability rate by age-group in 1991. That is, individuals living in regions with high disability rates in 1991 are more likely themselves to go on disability pension. Living in a high-disability region in 1991 is, however, assumed not to affect the individual's subsequent retirement decision in general. In can be seen from Table 5 that Mills ratio is significant but our central result remains unchanged when this ratio is included in the LPM regression.

Fourth, the promotion of corporate social responsibility (CSR) since 1994 and the introduction of subsidized employment (*fleksjob*) in 1998 would be expected to reduce the retirement effect of a health shock. To test whether the promotion of CSR could have led Danish employers to make extra efforts to retain workers with health

problems, thereby reducing the estimated retirement effect of health shocks, we re-estimate the basic model by splitting the sample into pre and post-1994 regimes. The results (in Table 6, top panel) show that there is no difference in the estimated impact of a health shock on retirement in the pre-CSR versus the post-CSR regimes. This is the case even when the sample in both regimes is restricted to have the same age-distribution. Further, when splitting the sample into pre- and post-*fleksjob* regimes, it can be seen in Table 6, bottom panel, that the effect of an acute health event is significantly smaller as expected, 3.3% following the creation of the subsidized jobs program. When restricting the age distribution to be the same in the pre- and post-*fleksjob* regimes, however, the effect is still 3% but no longer significant. So, the introduction of sheltered jobs seems to reduce the likelihood of retirement following a health shock, although this effect is not always precisely estimated, and only arises in the last two years of the sample period. More years of data will be needed before we can conclude that this is indeed a robust effect.

In sum, we test a number of institutional explanations which could underlie the retirement effect of a health shock in Denmark, but we find that the retirement effect remains largely robust to the availability of a multitude of government programs.

5. Conclusions and Implications for Policy

This paper investigates the effect of an acute health shock on retirement among elderly male workers in Denmark, 1991-2001. The results show that an acute health event increases the baseline retirement probability by 8% but that this effect persists even after accounting for eligibility to various early exit programs which may be drawing out low wage/low SES workers with poorer general health in Denmark. Neither is it

affected by the relatively long duration of sickness benefits in Denmark nor by taking the sample selection due to disability into account. The promotion of CSR initiatives in the mid-1990s does not impact the effect either. In the late 1990's, however, the retirement rate following a health shock is reduced to 3% with the introduction of the subsidized employment program (*fleksjob*) in Denmark giving employers wage subsidies to create softer jobs/flexible working conditions for individuals with health problems but this effect is on the margin of being significant.

The multitude of government programs made available by the Danish welfare state and the replacement rate from early retirement pensions, which is high compared to other European countries, implies that it should be relatively straightforward for workers experiencing health problems in Denmark to retire through one of the available exit routes. Nevertheless, our result suggests that for the most part the retirement effect following a health shock is immune to the availability of these programs and represents more likely a real health effect.

At the same time, however, the labour force participation rate in Denmark is fairly low for individuals in their 60s compared to other Nordic countries such as Norway, Sweden and Iceland (see e.g. Jørgensen et al., 2005) presumably reflecting the fact that the existence of the VERP enables the majority of Danish workers to retire at the age of 60. Our results suggest that early retirement through VERP is not closely related to serious health conditions. Therefore, instead of representing a real health effect, another explanation of our results could be that retirement in Denmark usually takes place before individuals fall ill, implying that working individuals in our sample are a somewhat selected group health-wise.

The VERP introduced in 1979 was specially designed to offer an exit route to workers with failing health, but in practice end up as exit route out of the labour market for a number of healthy workers as well. For example, according to a recent OECD study, a typical recipient of early retirement in Denmark comes straight from employment and suffers no particular health problem (OECD, 2006). These findings suggest together with our results that the VERP is still too financially attractive to avoid so that many healthy older workers choose to retire early.

If the existence of *fleksjob* actually reduces the retirement effect of a health shock, wage subsidies to employers seem to be one way to retain individuals with serious work limitations in the labour market. However, selection issues may also be a concern here in that individuals remaining until the end of the sample period might on average be healthier than individuals of the same age in the beginning of the period.

The lack of importance of the availability of the multitude of government programs indicates that the way to affect retirement behaviour following a health shock is not through offering workers early exit routes but rather through the prevention of health problems through for instance baseline check-ups, improvement of working environment in order to eliminate e.g. stress factors and promotion of a more healthy lifestyle through better diet and increased physical fitness.

While we bring new evidence on the ways in which welfare state institutions in an advanced welfare-state nation influence health-related exit from the labour market, it should be pointed out that we adopt a simple reduced-form approach in this study instead of a structural model of the dynamic retirement decision where arrival of health shocks give new information that can be used to change retirement plans. While the findings from reduced form models cannot be used to inform policy to the same extent

as structural models, our study exploits a very large dataset including extremely reliable health information drawn from hospital records and lead to some plausible findings which have important consequences for policy.

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Table 1.
Means of selected variables, male workers aged 50-69, longitudinal panel, 1991-2001 (standard deviations in parentheses).

	Mean	**Std. Dev.**
Exited labour force	0.168	0.37
Acute health event	0.017	0.13
New chronic illness	0.027	0.16
Accident	0.016	0.13
No. of person-year obs.	254,393	

Table 2.
Linear probability model (LPM) estimates and probit estimates of the effect of health shock on retirement for men. Basic model. Result for key variable.

	LPM	Probit
Acute health event	0.075 (0.008)	0.073 (0.007)
R^2	0.119	0.145
No. of person-year obs.	254,393	

Note: Probit: Marginal effects are reported. Results for the full model can be found in the Appendix, Table A.1. Regressions include dummies for chronic illness, accident, age, education, industry/occupation, year and wealth. Standard error in parentheses.

Table 3.
Linear probability model estimates of the effect of health shock on retirement for men. Controls for early retirement eligibility including Transitional Benefit Program (TBP) and Voluntary Early Retirement Program (VERP) respectively added.

	Control for TBP eligibility added	Control for VERP eligibility added
Acute health event	0.075 (0.008)	0.073 (0.007)
R^2	0.119	0.173
No. of person-year obs.	254,393	254,393

Regressions include dummies for chronic illness, accident, age, education, industry/occupation, year and wealth. Standard error in parentheses.

Table 4.
Linear probability model estimates of the effect of health shock on retirement for men. The dependent variable, retirement, includes sickness benefits and vocational rehabilitation benefits, respectively.

	Retirement incl. sickness benefits	Retirement incl. vocational rehabilitation benefits
Acute health event	0.081 (0.008)	0.075 (0.008)
R^2	0.117	0.118
No. of person-year obs.	253,379	254,041

Regressions include dummies for chronic illness, accident, age, education, industry/occupation, year and wealth. Standard error in parentheses.

Table 5.
Heckman two-step estimates of the effect of health shock on retirement for men. Correction for selection bias due to disability take-up.

Acute health event	0.075 (0.005)
SDP rate in county by age groups	-3.099 (0.023)
Mills ratio (lampda)	0.105 (0.023)
Wald χ^2 (56) (2. stage)	35065
Prob > χ^2 (2. stage)	0.000
LR χ^2 (17) (1. stage)	12772
Prob > χ^2 (1. stage)	0.000
Pseudo R^2	0.111
No. of person-year obs.	269,193
No. of censored person-year obs.	14,800
No. of uncensored person-year obs.	254,393

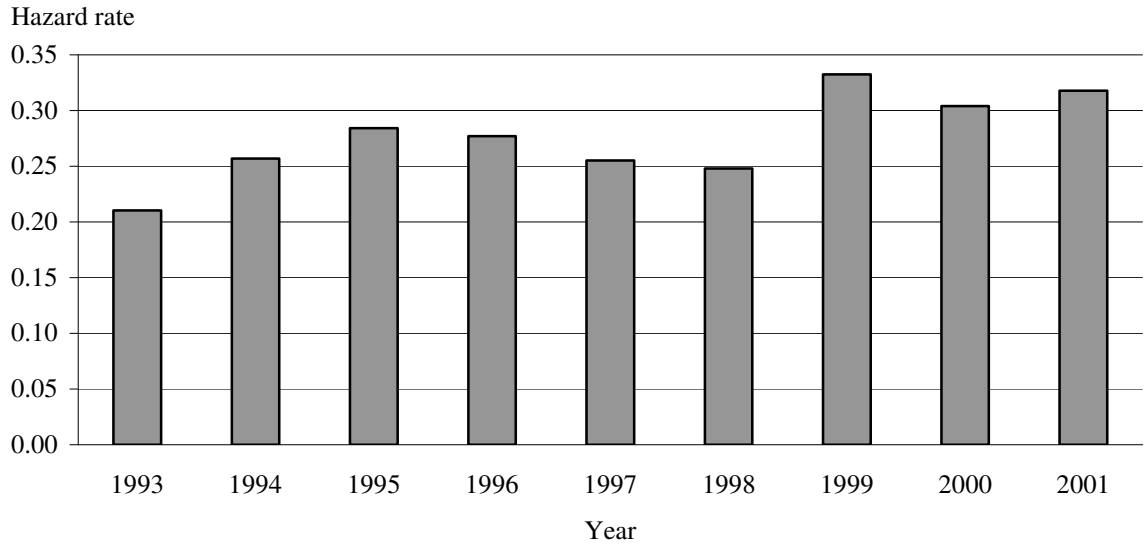
Regressions include dummies for chronic illness, accident, age, education, industry/occupation, year and wealth. Standard error in parentheses.

Table 6.
Linear probability model estimates of the effect of health shock on retirement for men. Controls for Corporate Social Responsibility (CSR) and subsidised jobs respectively, added.

The effect of CSR				
	Without age restriction		**With age restriction (52-61 years)**	
	Pre-1994	Post-1994	Pre-1994	Post-1994
Acute health event	0.076 (0.013)	0.075 (0.008)	0.078 (0.014)	0.080 (0.009)
R^2	0.198	0.114	0.197	0.125
No. of person-year obs.	43,681	210,712	38,597	171,303
The effect of subsidised jobs				
	Without age restriction		**With age restriction (58-67 years)**	
	Pre-1998	Post-1998	Pre-1998	Post-1998
Acute health event	0.082 (0.008)	0.033 (0.020)	0.089 (0.012)	0.031* (0.020)
R^2	0.128	0.064	0.071	0.064
No. of person-year obs.	220,932	33,461	104,870	32,403

Regressions include dummies for chronic illness, accident, age, education, industry/occupation, year and wealth. Standard error in parentheses. * Coefficient not significant at a 10% level.

Figure 1.
Hazard rate for retirement at time t+2 given incidence of health shock in the period t to t+2 for men working at time t, 1993-2001, nine three-year periods.



Appendix

Table A.1.
Means of the full set of variables, male workers aged 50-69, longitudinal panel, 1991-2001 (standard deviations in parentheses).

	Mean	Std. Dev.
Exited labour force	0.168	0.37
Acute health event	0.017	0.13
New chronic illness	0.027	0.16
Accident	0.016	0.13
Age	57.9	3.52
Basic education	0.399	0.490
Vocational education	0.387	0.487
Short education	0.031	0.172
Medium education	0.110	0.313
Long education, university degree	0.073	0.260
Ph.D. and Doctor degree	0.001	0.027
Log wealth, US $, 2000-prices	0.515	0.257
Period 1991-1993	0.172	0.377
Period 1992-1994	0.153	0.360
Period 1993-1995	0.136	0.343
Period 1994-1996	0.121	0.326
Period 1995-1997	0.108	0.310
Period 1996-1998	0.095	0.294
Period 1997-1999	0.084	0.277
Period 1998-2000	0.073	0.260
Period 1999-2001	0.059	0.235
Self-employed	0.229	0.420
Salaried worker, highest level	0.321	0.467
Salaried worker, medium level	0.109	0.311
Salaried worker, basic level	0.183	0.387
Salaried worker, lowest level	0.157	0.364
Assisting spouse	0.001	0.035
Primary industries	0.050	0.217
Manufacturing	0.096	0.294
Construction	0.058	0.234
Wholesale, retail	0.130	0.336
Financing and private services	0.089	0.285
Hotels, restaurants	0.018	0.133
Transportation, postal and telegraph services	0.051	0.221
Public sector	0.247	0.431
Missing information about industry	0.261	0.439
No. of person-year observations	254,393	

Table A.2.
Linear probability model (LPM) estimates and probit estimates of the effect of health shock on retirement for men. Basic model.

	LPM		Probit	
	Coefficient	**Standard error**	**Marginal effects**	**Standard error**
Acute health event	0.075	0.008	0.073	0.007
Chronic illness	0.067	0.006	0.069	0.006
Accident	0.025	0.007	0.030	0.007
Age 51 in 1991	0.035	0.002	0.061	0.005
Age 52 in 1991	0.075	0.003	0.130	0.005
Age 53 in 1991	0.110	0.003	0.191	0.006
Age 54 in 1991	0.146	0.003	0.251	0.007
Age 55 in 1991	0.184	0.004	0.314	0.007
Age 56 in 1991	0.225	0.004	0.381	0.008
Age 57 in 1991	0.278	0.005	0.458	0.009
Age 58 in 1991	0.314	0.006	0.510	0.009
Age 59 in 1991	0.300	0.006	0.500	0.010
Age 60 in 1991	0.309	0.007	0.521	0.010
Basic education	0.035	0.023	0.066	0.044
Vocational education	0.046	0.023	0.076	0.045
Short education	0.018	0.024	0.051	0.051
Medium education	0.021	0.023	0.051	0.050
Long education, university degree	-0.036	0.023	-0.022	0.037
Log wealth, US $, 2000-prices	-0.005	0.003	-0.005	0.004
Period 1991-1993	-0.226	0.004	-0.150	0.002
Period 1992-1994	-0.207	0.004	-0.137	0.002
Period 1993-1995	-0.181	0.004	-0.121	0.002
Period 1994-1996	-0.158	0.004	-0.108	0.002
Period 1995-1997	-0.132	0.004	-0.092	0.002
Period 1996-1998	-0.113	0.004	-0.080	0.002
Period 1997-1999	-0.067	0.005	-0.053	0.002
Period 1998-2000	-0.021	0.004	-0.020	0.002
Self-employed	-0.118	0.005	-0.058	0.021
Salaried worker, highest level	-0.047	0.003	0.014	0.027
Salaried worker, basic level	0.039	0.004	0.065	0.032
Salaried worker, lowest level	0.032	0.004	0.103	0.034
Assisting spouse	-0.060	0.026	0.100	0.034
Primary industries	-0.017	0.007	0.005	0.004
Manufacturing	-0.010	0.007	0.002	0.005
Construction	-0.013	0.007	0.006	0.004
Wholesale, retail	-0.009	0.007	0.008	0.005
Financing and private services	-0.004	0.007	0.012	0.007
Transportation, postal and telegraph services	0.016	0.008	0.028	0.005
Public sector	-0.003	0.007	0.012	0.004
Missing information about industry	-0.014	0.007	0.003	0.005
Constant	0.182	0.024		
R^2 /Pseudo R^2	11.9		14.5	
No. of person-year observations	254,393			

Note: Reference group: 50 in 1991, reference year: last period (1999-2001), reference education: Ph.D. or a Doctor degree, reference occupation: salaried worker, medium level, reference industry: hotels and restaurants.