Determinants of early withdrawal from the labour market

In this study we will analyze the effects of labour supply and labour demand on the age of stopping work in Belgium, the Netherlands, Finland and the United Kingdom. An empirical analysis of both the labour supply side and the labour demand side will allow us to take into account the influence of employers, often neglected in the economic literature when it comes to explaining the key factors pushing seniors out of the labour market.

Pension systems mainly originated after the industrial revolution, characterized by the appearance of new types of jobs. Formerly, the predominantly agricultural society was particularly well suited to take care of family members having to work until they become unable to work. Then, with industrialization, retirement was perceived more and more by companies as a means of reducing the number of workers or replacing the least productive ones with more productive (generally younger) ones. At that time, this management policy instrument was without any doubt well received by companies, but also by employees, who could leave the labour market without awaiting physical incapacity while receiving a pension benefit. After the Second World War and as a result of the poverty affecting a large number of retirees, the pension system in place underwent major improvements to better financially support retirees (foundation of social security). It was one of the most remarkable social advances in our history. Exits from the labour market were mainly made once the legal/official retirement age had been reached. However, in recent decades we have witnessed many early withdrawals from the labour market, which tends to reveal a behavioural change on the part of economic agents and/or institutions active on the labour market.

One of the major problems of social security systems, mainly financed by contributions from employers and employees, is incontestably the premature withdrawal of workers from the labour market. In many industrialized countries, the average age on exit from the labour force has declined and the average age on entry into the labour market has risen. This situation is worrying since the number of years worked or contributing to finance "Pay-As-You-Go" pension systems is reduced at both ends of the age spectrum at the same time. Moreover, the baby-boomers who will reach retirement age from 2010 will burden pension expenditure, while the working population will not stop decreasing. In addition, the evident and continuous increase in life expectancy combined with early labour market withdrawals is also synonymous with increasing public expenditure, especially pension expenditure, while the number of contributors is expected to fall.

Many studies aiming to analyze the determinants of the discontinuation of professional activity base their reasoning exclusively on the labour supply and/or social protection systems. However, we know that employers' behaviour has without any doubt influenced early labour market withdrawals. In its dossier on the promotion of participation by seniors (SZW, 2000), the Dutch government recognizes that employers have played a role in the process of premature cessation of activity. According to the U.K. Cabinet Office report (2000) on the ageing of the British population, only a third of early exits are voluntarily made.

Even if it is true that many premature departures are dictated by companies' behaviour, we cannot deny that the discontinuance of activity around the age of 55 is sometimes regarded as the normal age, or even as desirable by part of the working population.

It is thus useful to carry out investigation, on the level of both labour supply and labour demand, about the possible factors likely to influence early departures from the labour market before reaching any conclusions as to how to face the trends described above. Such an analysis must certainly not lose sight of the fact that, regardless of the reasons behind early exits, they constitute a premature withdrawal of resources from the production process and thus a non-optimal use of the workforce, a cause of weakened taxation and an increased burden on the tax and pension systems.

We will thus try in the remainder of this study to analyze the effects of labour supply and labour demand on the age of stopping work in Belgium, the Netherlands, Finland and the United Kingdom. The choice of these Western countries is made according to the type of welfare states regarding pension systems as proposed by Esping-Andersen (1990).[1] Belgium is characterised by a conservative-corporatist model where pension system is differentiated and segmented into distinct status/occupational-based programmes. Anglo-Saxon countries such as the United Kingdom follow the liberal welfare state model where the public pension programmes just protect against the risk of old-age poverty leaving the responsibility for further protection to private pension schemes. Scandinavian countries such as Finland belong to the social-democratic type of welfare state. In this country, the basic part of pension benefits is universal and homogeneous (flat-rate benefits) and based on citizenship or residence. The case of the Netherlands should be considered as a mixture of liberal and social-democratic welfare state.

An empirical analysis of both the labour supply side and the labour demand side will allow us to take into account the influence of employers, often neglected in the economic literature when it comes to explaining the key factors pushing seniors out of the labour market. To our knowledge, there is no model of labour demand in the literature to vindicate early withdrawals.

The main purpose of this study consists in testing some theoretical and empirical results, using an OLS model. Given the limitations of our database, it is not possible to test singly all the discussed points in the literature. Basically, we will study the relationship between the cessation age and the reasons to stop working (influence of the employer; end of contract/temporary job or sale/closure of own or family business; own illness or disability; need to look after old, sick or disabled persons; desire to retire or live off private means and other reasons not specified[2]), controlling for a series of variables such as sex, marital status, education and age at starting work.

Data and model

The database used to study the impact of labour supply and demand on the age of cessation is composed of eight waves of the European Community Household Panel (ECHP) from 1994 to 2001 for Belgium, the Netherlands and the United Kingdom and from 1996 to 2001 for Finland. These data, harmonized by country, provide us with information on the individual characteristics of interviewees aged 50 and older who have had a professional activity and who definitively ceased work between 1980 and 2001.

We use an OLS model to analyze the relationship between the cessation age and the reasons to stop working, while controlling for a series of variables such as sex, marital status, education and age at starting work. Regressions have been estimated with White (1980) heteroscedasticity-consistent standard errors and some statistics or tests verifying the normality assumption (e.g. Skewness, Kurtosis & Shapiro-Wilk).[3]

The model has the following form:
$AgeCessation_i = \alpha + \beta 1\ AgeStart_i + \beta 2\ Sex_i + \beta 3\ Marital_i + \beta 4\ ReasonsStop_i + \beta 5\ Education_i + \varepsilon i$,
where *AgeCessation* is the age of activity cessation, *AgeStart* contains three binary variables for the age at starting work (between 17 and 20 years, between 21 and 24 years and 25 years and older, *with 16 years or under as reference*), *Sex* is a binary variable that takes the value one for women (and zero for *men that are the reference*), *Marital* includes three binary variables for marital status (divorced,

widowed and never married, *with married as reference*), *ReasonsStop* contains six binary variables, each representing a reason for activity cessation (two variables are job related reasons: obliged to stop by employer[4] and end of contract/temporary job or sale/closure of own or family business; four variables are personal reasons: own illness or disability; family reasons (the need to look after old, sick or disabled persons); wanted to retire or live off private means; and other reasons such as family reasons (in the Belgian and Finnish survey questionnaires), wanted to retire or live off private means (in the British survey questionnaire), marriage, partner's job requiring a move to another place and other unspecified reasons such as synchronized cessation by married couples, wage level, replacement rates, generosity of social security systems, economic situation, etc. (in all four survey questionnaires), *with retired at normal age as reference*) and *Education* contains two binary variables for the educational level (to hold at most a lower secondary certificate and to hold an upper secondary certificate, *with higher non-university, university or postgraduate education as reference*).

The model has the advantage of using retrospective data providing individual information at the moment of the activity cessation or earlier.
We also wanted to control for the sector of activity of the last job and the size of the establishment, but the database does not enable us to do so.

Results

The results obtained from our econometric model actually suggest that labour demand has played a significant role in explaining early retirement in all four countries surveyed between 1994 (1996 for Finland) and 2001 (table 1). The employer-driven obligation to stop working (owing to business closure, redundancy, dismissal, early retirement, etc.)[5], marital status (married/widowed) and health status are the main reasons for the premature cessation of activity common to all four countries studied. For these factors, the obtained results corroborate those found in the literature (*for the influence of the labour demand*: Lazear, 1979; Disney, 1999; Ilmakunnas et al., 1999; Hirsch et al., 2000; Herbertsson, 2001; Wanner et al., 2003; Aubert & Crépon, 2004; Gautié, 2004; Hellerstein & Neumark, 2004; Aubert, 2005; OECD, 2006; *for the influence of the marital status*: Lilja, 1996; Blau, 1998; Kim & Feldman, 1998; Blau & Riphahn, 1999; Jimenez-Martin et al., 1999; Szinovacz & De Viney, 2000; Sédillot & Walraet, 2002; An et al., 2004; Gustman & Steinmeier, 2004 *and for the influence of health*: Burtless & Moffitt, 1984; Rust & Phelan, 1997; Burtless, 1999; Pienta, 1999; Heyma, 2001; French, 2005; OECD, 2006). The magnitude of their impact, however, differs from one country to another.

In Belgium and the Netherlands, the employer-driven obligation to stop represents the motive with the greatest effect on the withdrawal age. Exit from the labour market occurs about five years before the official retirement age. The more rigorous *Employment Protection Legislation (EPL)* in these two countries, reducing labour market flexibility and opportunities for older workers to find new jobs, combined with wages increasing sharply with age/seniority[6], undoubtedly explain the greater impact of this reason in these two countries compared to Finland and the United Kingdom. Exit from the labour market due to the employer moves cessation forward by 1,6 years in the United Kingdom and 3,2 years in Finland compared to the official retirement age.
Health status is the second factor having a significant impact on the age of activity cessation in Belgium and the Netherlands. Departure occurs about three years before the official retirement age in Belgium and nearly five years before in the Netherlands when cessation is due to poor health. In the case of Finland and the United Kingdom, health status is the factor that has the most significant effect on the retirement age. Withdrawal because of poor health happens about three years before the official retirement age in the United Kingdom and almost five years before in Finland. These results are in line with the European Survey on Working Conditions in 2000.

Exits due to "*other reasons*" (i.e. family reasons: the need to look after old, sick or disabled persons; marriage; partner's job requiring a move to another place and other unspecified reasons such as synchronized cessation by married couples, wage level, replacement rates, generosity of social security systems, economic situation, etc.) also have a strong negative incidence on the official retirement age in Finland. Indeed, activity ceases almost five years before the official retirement age in this country.

Table 1.

Estimated effect on retirement age, 1994-2001 (1996-2001 for Finland)

Variables	Netherlands	Belgium	Finland	United Kingdom
Constant	61,02 (0,49)***	59,65 (0,50)***	60,86 (0,38)***	60,84 (0,44)***
Age at starting work				
16 or under	Reference	Reference	Reference	Reference
17-20	0,48 (0,31)	-0,18 (0,37)	-0,42 (0,27)	-0,50 (0,51)
21-24	0,47 (0,46)	0,16 (0,51)	0,09 (0,39)	-0,15 (0,81)
25 or over	1,46 (0,50)**	1,31 (0,56)**	0,09 (0,40)	0,17 (0,91)
Sex				
Male	Reference	Reference	Reference	Reference
Female	-0,19 (0,23)*	-1,59 (0,33)***	0,42 (0,23)	-1,87 (0,37)***
Marital status				
Married	Reference	Reference	Reference	Reference
Divorced	-0,01 (0,37)	-0,77 (0,57)	-0,42 (0,34)	-0,66 (0,66)
Widowed	1,99 (0,41)***	3,19 (0,62)***	1,90 (0,40)***	3,69 (0,57)***
Never married	0,65 (0,38)*	0,58 (0,55)	-0,08 (0,35)	0,13 (0,67)
Reasons to stop working				
Retired at normal age	Reference	Reference	Reference	Reference
Obliged to stop by employer	-4,94 (0,44)***	-4,84 (0,35)***	-3,23 (0,31)***	-1,63 (0,53)***
End of contract/temporary job/ sale or closure of own business	-1,08 (0,60)**	-1,87 (1,10)***	-1,98 (0,45)***	-0,61 (1,05)
Own illness or disability	-4,77 (0,30)***	-3,25 (0,50)***	-4,52 (0,28)***	-2,89 (0,72)***
Looking after old, sick or disabled person	-2,66 (1,79)*	/	/	-1,32 (0,50)***
Wanted to retire or live off private means	-1,60 (0,31)***	-2,00 (0,54)***	-0,16 (0,48)	/
Other	-1,83 (0,30)***	-0,09 (0,65)	-4,42 (0,83)***	-1,39 (0,70)
Education				
Higher non-univ., univ, or postgraduate	Reference	Reference	Reference	Reference
No degree, primary or lower secondary	-0,28 (0,30)	0,24 (0,45)	-0,07 (0,35)	1,48 (0,46)***
Upper secondary	-0,26 (0,31)	0,73 (0,43)*	-0,19 (0,37)	0,54 (0,67)
Number of observations	1 395	842	1 174	1 661
Adjusted R-Square	0,21	0,25	0,25	0,18
Chi-Square	118,29***	98,79***	119,77***	109,00***
Shapiro-Wilk	0,97***	0,96***	0,98***	0,99***

Note: Standard errors in parentheses. ***/**/*: indicate significance at the 1, 5 and 10% level, respectively.
Bron: European Community Household Panel (ECHP)

Another finding common to all four countries surveyed is the effect of marital status on the age of activity cessation. Indeed, our results suggest that widowed people leave the labour market between two and four years later than those who are married. This finding substantiates the idea that married couples arrange to synchronize their retirement from the labour market (Lilja, 1996; Blau, 1998; Kim & Feldman, 1998; Sédillot & Walraet, 2002). Another possible explanation of postponement by widow(er)s could be the fear of dependence on a social allowance or simply the desire to avoid solitude by continuing to work.

Other reasons for withdrawal also turn out to be determinants of an early retirement age, but only for some of the four countries studied.

The desire to retire from the labour market or live off private wealth (voluntary cessation) has a significant effect only for Belgium and the Netherlands. Moreover, the impact of this reason on the retirement age is much lower than that of departure enforced by the employer (two to three times lower in these two countries). This finding shows that part of the Belgian and Dutch working population wants to leave the labour market before reaching the official retirement age. Several explanations can be given: few incentives to work one year more if tax rates on additional years of work are high or effect of income/wages (Burtless, 1986, 1999; Stock & Wise, 1990; Diamond & Gruber, 1997; Pestieau & Stijns 1997; Costa, 1998; Kim & Feldman, 1998; Samwick, 1998; Heyma, 2001), harsh working conditions, difficulty of work, generosity of the social security system or effect of replacement rates (Fields & Mitchell, 1984; Hausman & Wise, 1985; Sueyoshi, 1989; Krueger & Pischke, 1992; Diamond & Gruber, 1997; Pestieau & Stijns, 1997; Gruber & Wise, 1999; Coile & Gruber, 2000; Herbertsson, 2001; Cremer & Pestieau, 2003; Cremer et al., 2004), high expectation of becoming unemployed (through redundancy/dismissal) or anticipation of the company's future activity (effect of economic recession: Disney, 1999, Herbertsson, 2001), substantial and sufficient wealth when retired or effect of wealth (Boskin, 1977; Burkhauser, 1980; Hanoch & Honig, 1983; Holtz-Eakin et al., 1993, 1999; Joulfaian & Wilhelm, 1994; Costa, 1998; Cheng & French, 2000; Burtless & Quinn, 2001; Imbens et al., 2001; Coronado & Perozek, 2003), etc.

The cessation of activity due to the end of a contract/temporary job or the sale/closure of a person's own or family business also occurs before the legal retirement age, but with differences between the four countries surveyed. In Belgium and Finland, exit occurs nearly two years before the legal retirement age, whereas in the Netherlands it takes place about one year before. In the United Kingdom, this reason for stopping has no significant influence on the withdrawal age.

This study therefore suggests that labour demand has incontestably played a role in the process of stopping work early in Belgium, the Netherlands, the United Kingdom and Finland. Therefore, raising the labour participation rates of seniors must necessarily be done by acting on the labour demand side, to the extent that a policy designed to encourage seniors to work can be effective only if these seniors are actually employed.

The analysis of premature exits from the labour market has also demonstrated that they result in early withdrawals of labour resources from the production process and therefore a non-optimal use of the existing workforce.

Some policy recommendations

In terms of policy recommendations, we would recommend action in three major directions: improving employment practices with respect to seniors in order to support their hiring and retention, promoting their employability and (to a lesser extent) inciting seniors to continue working. Although our results suggest that the first two approaches are the most important, comprehensive (i.e. on all fronts) and coordinated action in consultation with public authorities, employers, trade unions and workers is essential if active policies are to be implemented to stimulate the employment of older workers in order to avoid, or reduce, premature cessations of activity (especially those that are involuntary).

The first line of action is to eliminate some preconceived and false ideas (or stereotypes) about the capacity of seniors and the replacement of older workers by younger ones. Karakaya et al. (2005) have shown, on this subject, that older and younger workers each have strengths and weaknesses

that they can contribute to their firms. Therefore, a mixed age group in the company is beneficial for employers since it allows them to compensate for one person's weaknesses with another's strengths. In addition, a perfect substitution of seniors by younger workers has been observed in hardly any countries, especially when the adjustment costs of labour are high and early retirement costs are paid (even partially) by employers.

The second line of action is to enhance the employability of older workers by upgrading their skills (which would not correspond to those sought by employers), improving their working conditions, improving employment services and career advice for older workers to help them to find a job and keep it.

Karakaya et al. (2005) have shown that the initial educational level of seniors is generally lower than that of younger workers. In addition, difficulties in adapting to technological and institutional developments and the depreciation of older workers' human capital, combined with a preference on the part of companies to train young staff in particular, certainly explain the need to make training more attractive and accessible for seniors.
The aim of employment services and career advice for older people is to assist them in their job search tasks (for instance, phasing out the dispensation for older unemployed people from looking for work) and to facilitate labour mobility among older people (facilitating access to part-time jobs and developing flexible work arrangements for instance).
Our results have also shown that deteriorating health represents an important reason for the cessation of activity. The improvement of older workers' working conditions in order to enhance health and safety at work is also expected to contribute to lengthening working life.
Any reforms of retirement systems not accompanied by these first two lines of action are likely to have only a limited effect (or none at all).
The last line of action is to strengthen incentives to work. Several ways can be envisaged: phasing out formal early retirement schemes (*pre-pension plans*) in parallel with the closure of other pathways into early retirement (avoiding other access routes, such as unemployment and disability/sickness insurance, to replace formal early retirement plans), actuarial reductions and increases in pension benefits for earlier and later retirement respectively, enhancing childcare support and facilitating access to part-time jobs.

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Noten

1. Esping-Andersen (1990) describes three main types of welfare states: conservative-corporatist (belonging to the Bismarckian family), liberal (belonging to the Beveridgian family) and social-democratic. This categorization refers to pension systems at the end of the 1980s.
2. Marriage, partner's job requiring a move to another place and other unspecified reasons such as synchronized cessation by married couples, wage level, replacement rates, generosity of social security systems, economic situation, etc.
3. Results allow us to conclude on the relevance of using OLS estimates.
4. Age discrimination, low productivity, seniority-based pay systems, difficulties in adapting to technological and institutional developments, depreciation of human capital, strict employment protection legislation.
5. Given the nature of our database, it is impossible to determine which factor is decisive among the reasons related to the employer (age discrimination, low productivity, seniority-based pay systems, difficulties in adapting to technological and institutional developments, depreciation of human capital, strict employment protection legislation). Indeed, the obtained estimates for the reason "*obligation to stop by employer*" represent the compiled effect of these factors.
6. For more information about Employment Protection Legislation (EPL) and the relationship between wages and experience on the labour market or tenure (or age), see OECD (2006).

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