

Early retirement in Europe

AGAR BRUGIAVINI

Dipartimento di Scienze Economiche, Università 'Ca' Foscari', San Giobbe, 873, 30121 Venezia, Italy. E-mail: brugiavi@unive.it and Institute for Fiscal Studies, London, UK

Retirement behaviour has been the focus of attention of much microeconomic research in recent years. At the same time, most industrialized countries are struggling with reforming their retirement systems to counteract adverse demographic shocks. Early retirement is an important aspect both in explaining retirement behaviour and in forecasting the future of welfare systems. In particular, early retirement is related to an important policy puzzle: it may be optimal to increase the legal retirement age, however we do not know enough of the behavioural response of workers to policy changes and whether these would be effective measures to counteract future fiscal imbalances. Social security systems (and many private pension plans) in Europe have encouraged early exits. This paper reviews the empirical literature on early retirement, with particular reference to OECD countries. The basic message emerging from our work is that much could be learnt by having better quality data, in particular micro-level data that could be used to estimate behavioural responses having under control the many factors affecting retirement decisions, including institutional factors and allowing for full cross country comparability.

1. Introduction

Ageing poses many challenges and many governments in Europe have started thinking seriously about the need for reforms in their welfare systems.¹ Economists and policy makers are mostly concerned with the financial distress of public pensions systems and public health care arrangements (which are typically unfunded, i.e. financed on a pay-as-you-go basis) resulting from the demographic imbalances. The reason for concern is that ageing of the population is not a temporary shock to the age structure, but it has permanent features, for example increased longevity. This implies that there will be an increasing number of elderly who live longer and have to be supported by a reduced number of younger workers. However, one of the most dramatic demographic trends in the postwar period has been the labour force withdrawal of older male workers: this has gone largely unnoticed until now. In the early 1960s, the participation rate for people aged 60 and over was above 70% in each country and above 80% in several of them. By the mid-1990s, the rate had fallen to below 20% in Belgium, Italy, France and the Netherlands, to about 35% in Germany and to 40% in Spain (see Figure 1).

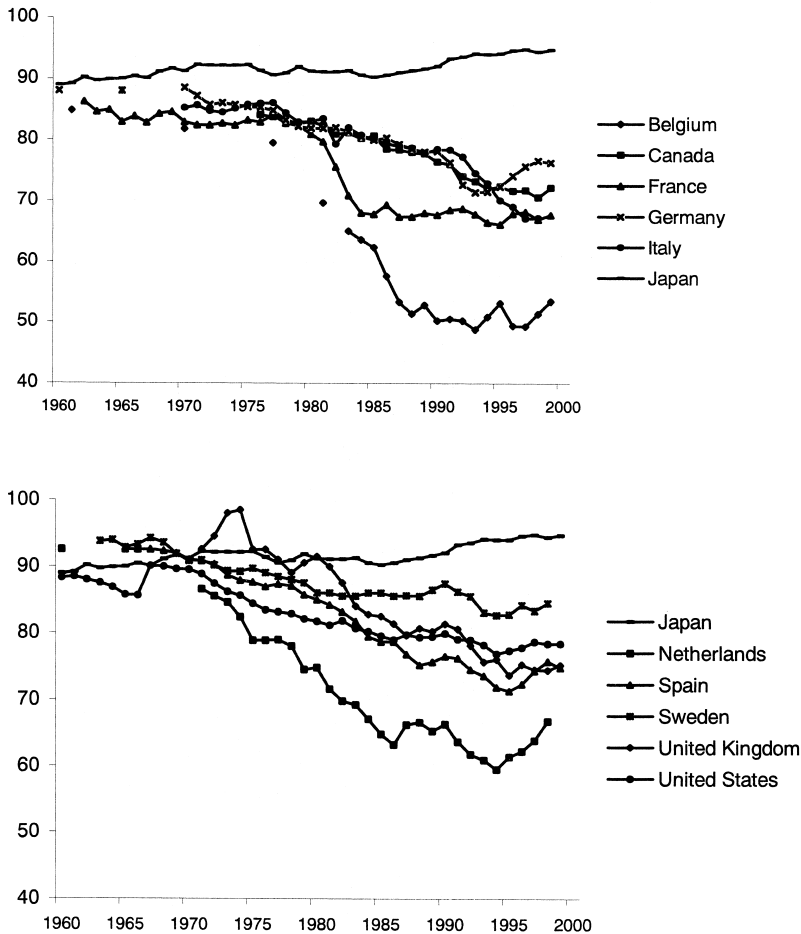


Figure 1. Labour force participation trends for men aged 55 to 59. *Source:* European Union-Labour Force Survey-several years.

What are the reasons for this decline in participation rates? Workers' preference for leisure? Legislation? Employer's choice? Social security generosity?

This paper looks at the extent to which early retirement plays a role in explaining this trend and it focuses attention on the economic incentives built in social security systems (or private pensions schemes) which encourage early exits. One important message, if not the main message of my analysis, is that even the basic stylized facts are hard to describe and to quantify because of lack of data. In fact, in this framework, it is relevant to consider how different workers take retirement decisions, given the institutional setting and given all other individual characteristics (age, schooling experience, family composition) etc. The ideal data set would be a micro-level survey, which should contain all these characteristics and could be used for policy experiments. Even more valuable would be the possibility of having full comparability of this 'ideal sample' across different countries, hence learning about different retirement choices from differences in the institutional environment. The multi-dimensional nature of the impact of ageing and of retirement decisions cannot be analysed without a multidisciplinary

approach.² In this paper, I can only provide the flavour of some aspects of economic research in this area.

2. Defining and measuring early retirement

Before addressing the issue of early retirement it is useful to start by distinguishing a ‘first pillar’ pension provision, which is normally financed on a pay-as-you-go (PAYG) basis and, in some countries, corresponds to social security, while in others it is simply a public pension system, and a ‘second pillar’ provision, which is normally funded and corresponds to group pension-contracts known as occupational pensions or firm plans. The majority of the OECD countries have in place some combination of these two forms of old age insurance, the mix between first and second pillar and the actual provision within each system varies considerably across countries.

Early retirement corresponds to the period of retirement starting before the ‘normal retirement age’. (In the US, this is the age at which a person may first become entitled to unreduced retirement benefits. For persons reaching age 62 before 2000, the normal retirement age was 65. It increases gradually to 67 for persons reaching that age in 2027 or later, beginning with an increase to 65 years and 2 months for persons reaching age 65 in 2003.)

The normal retirement age (NRA) in the US is 65. In Western Europe, the NRA has varied considerably over time, although age 65 seems now the norm in most countries, at least for men (see Tables 1 and 2). There is also variability within a country depending on whether the worker is an employee in the private sector or public sector or whether he or she is self-employed. Furthermore, changes in NRA have occurred in most countries in recent years due to reforms aimed at curtailing pension expenditures within the first pillar provision.

Table 1. Legal versus effective retirement age (legislation in 1996)

Countries	Male		
	Normal Retirement age	Early Retirement age	Effective Retirement age Average for 1995
Belgium	65	60	57.6
Canada	65	60–64	62.3
Denmark	67	60	62.7
Finland	65	60–64	59.0
France	60	57	59.2
Germany	65	63	60.5
Iceland	67	65	69.5
Italy	62	35 years of contributions	60.6
Japan	65	60–64	66.5
Netherlands	65	58–63	58.8
Norway	67	60–66	63.8
Spain	65	60–64	61.4
Sweden	65	60–64	63.3
United Kingdom	65		62.7
United States	65	62–64	63.6

Source: Ref. 5.

Table 2. Normal retirement age in selected countries (legislation prevailing in the year 2000)

	Public flat-rate pension	Public earnings related pension	(Early) Retirement or age policy
Austria	65 men, 60 women	65 men, 60 women	60 men (57 if reduced working capacity), 5 women
Denmark	Basic old age pension: 67 (65 for persons who are 60 years old past the first of July 1999)	67 (65 for persons 60 years old after the first of July 1999) for both	over 60 if certain requirements are met; over 50 for social or health reasons
Finland	65 both compulsory p., thus as public related)	65 for both (is an occupational 55 if certain contribution	60–64 (or as early as and age-cohort requirements are met
France	65 both	60 both	57 (in special cases 56)
Germany	none	65 for males and 63 (in 2004: 65) for females	starting 2001, 65 for all groups.
Great Britain	65 men, 60 (from 2020: 65) woman		50 and over may retire
Italy	“social pension” and top-up pension at age 65	64 for men and 59 for women (to be increased by one year, to reach 65 for men and 60 for women). For those entering the labour market after 1995, a flexible retirement age between 57 and 65 will apply	35 years of contributions increasing up to 40 years.
Netherlands	65	none	59 or even 55 depending of the collective agreement
Spain		65 both	60
Sweden	65 both	65 both	guaranteed pension:
USA	SSI: 65	flexible from 61 OASDI: 65 (from 2027: 67) for both	SSI: from 65. OASDI: “early retirement” p. from 62

In this paper I refer to *early retirement* (ER) in a broad sense, the main problem in defining early retirement is that, in some countries, workers can stop working before reaching the NRA but they are not officially retired and a variety of situations could apply. For example, in Denmark, old-age pension is payable to everyone over the age of 67 and anticipatory pension is payable to people between the ages of 18 and 66 whose working capacity has been permanently reduced by at least one half due to a physical or mental disability, or to people over the age of 50, where social circumstances so warrant. In many countries, special

pre-retirement programmes were introduced in the mid-1970s with the purpose of easing the industrial restructuring process or accommodating the downsizing of the public sector, i.e. a general policy of labour shedding.⁴

There is a whole spectrum of opportunities offered to workers to leave the labour market prematurely, with different financial conditions attached to them. Such options include early retirement (in the US this is retirement before NRA at reduce benefits), but also entitlement to unemployment benefit in the absence of an obligation to be available for work, provisions for occupational disability and work incapacity pensions, plus the pre-retirement programmes described above.

It is useful to describe the cross-country variability in normal retirement ages (Table 1 and Table 2) and to compare the legal retirement ages (normal and early, when applicable) with the average age of retirement. (The only study I know where a comparison between normal retirement age and effective retirement age is made on a consistent basis is Ref. 5. Unfortunately the evidence in their study is based on 1995–1996 data.) In countries where pre-pension plans exist, and where social security provides incentives to leave the labour force early, the average retirement rate for men is even lower than the early retirement age (for example, in Belgium, Germany and Italy).

2.1. Retirement paths

During the 1980s, early exit from work became a widespread phenomenon, embracing nearly the entire workforce in Western countries, and there are now marked differences in early retirement across OECD countries. Very early exit, before age 60, was relatively common in France and the Netherlands, although also in Germany and Italy. On the other hand, the level of Japanese participation hardly changed. The second pre-retirement age group (60–64) shows that Japan, Scandinavia or Anglo-Saxon countries experienced some long-term decline in participation rates but remained above the OECD average, while continental European societies experienced a dramatic decline.

These differences can be explained by the different opportunities to ‘bridge’ the transition period between early withdrawal from work and the NRA. Pathways to early retirement often combine different income programmes. For example, unemployment benefits were originally extended to older workers as a social policy for the hard-to-re-employ, although with rising mass unemployment these rights became the first step on a popular pathway leading to early exit. There is a multitude of possible pathways: lowering the normal pension age, partial or gradual pensions, special pre-retirement programmes, long-term unemployment, disability insurance and employer policy.

3. Some facts on early exits from the labour market

In this section, evidence will be presented on the labour market for older men and women by selecting some European countries as examples. A description is given of the historical evolution of labour force participation from 1960 until 1999, pointing out the decline for the group aged 60 to 64, then I look at cross-sectional analysis based on current labour force participation rates by age, and finally I present hazard rates by age. From this analysis, it is

possible to see the important role that social security can play in the participation decisions of older persons.

3.1. Historical trends in the labour force participation of older men and women

The labour market position of the older workforce has changed over the past decades. The decline in the labour force participation (LFP) of older persons is one of the most dramatic features of this labour force change. (The Labour force participation rate is defined as the proportion in each age group counting as economically active, in employment or self-employed or unemployed and actively seeking work.) According to Ref. 5, the age at which people retire from the labour market has been drifting downwards in most OECD countries (retirement is defined as complete withdrawal from work, with no possibility of returning to the labour force, at unreduced benefits). In the 1960s and early 1970s, males retired from the labour market after the age of 65. Since then, the average age of retirement has declined in all countries: by 1995, a quarter of OECD countries had an average retirement age below 60 for males (at least 57.6 in Belgium, at most 66.5 in Japan and 69.5 in Iceland). While historically lower than for men, the average age of retirement for women has followed a similar pattern from 1960. In 1995, more than half of the OECD countries had an age of retirement below 60 for women (at least 51.1 for Belgian women, at most about 66 in Turkey and Iceland and 63.7 in Japan).

The decline in LFP concerns particularly men aged 60 to 64: in the early 1960s, the participation rates were above 80% in several countries (Japan, the Netherlands, Spain, Sweden and United States), 70% in others (Belgium, France and Germany) and at least roughly 60% in Italy. In the late 1990s, the rates have fallen to about 20% in Belgium, Italy, France and the Netherlands, to 30% in Germany and to 40% in Spain. The decline in the United States from 80% to 55% was modest in comparison with the much more precipitous decline in these European countries. In addition, the decline to 55% in Sweden was modest if compared with the fall in other countries. In Canada, the LFP reduced from 65% in 1976 to 45% in 1999, while in the United Kingdom it fell from 72% in 1971 to 50%. Japan stands out with the smallest decline of all countries, from about 80 to 75%. The LFP rates of 45 to 59-year-old men have also declined substantially.

The LFP trends for older women are just as dramatic. The reason why the aggregate LFP rate of women has been increasing is the existence of cohort effects (younger more educated cohorts enter the labour force in higher percentages than older cohorts). In some countries, the LFP rates of women aged 60 to 64 have been declining, and in no country has there been a general increase in this age group, in spite of the sharp trend toward increasing participation rates of women at younger ages.

As pointed out by Gruber and Wise⁶, in order to understand these trends one must consider the social security system and its evolution over time. There is an important addition to be made to the basic argument of Gruber and Wise: not only do the economic incentives built in the social security system induce people to retire and to retire early, but also governments, firms and unions have often fostered ad hoc early retirement – expensive – programmes.⁷ The main forces that led to withdrawals from employment are special schemes created to encourage older workers to leave the labour market, and incentives embedded in old-age pension schemes.⁵ In fact, according to the 1995 European Union Labour Force Survey, one of the

reasons why inactive males in the 55 and 64 year-old age group left their last job is early or normal retirement. However, in some countries – Sweden, Finland, the United Kingdom and Spain – there are other important causes: dismissal, redundancy, disability and illness.

The extent to which social security might have affected the pattern of LFP depends on its generosity and coverage. In all the countries there is an increasing generosity of the social security system over time; in particular, there is an increasing percentage of people drawing social security, disability insurance and mandatory early retirement benefits. The replacement ratio of the public pension system has become over time very generous and, in addition, the coverage ratio has increased.

Figure 1 presents graphs of historical trends of the LFP for older men and women. I consider some age groups, usually 45–54, 55–59, 60–64 and 65 +, in order to investigate the evolution of LFP. I have empirical evidence of the decline in all age groups for men. As a rule, for the group aged 45 to 54, the rate is relatively constant, rather than a decline; while for the group aged 55 to 59 the decline is more stressed. For the group aged 60 to 64 the decline is dramatic, and for the group aged 65 and over there is also a decline. For women there is an increasing trend, except for those over 60.

I chose the Netherlands and Spain as the two case studies both for the diversity in terms of demographics and also in terms of social and pension systems. Changes in the social security system are not the main factor explaining the declining LFP rates in the Netherlands. Indeed, social security provides an income only to persons aged 65 or older but the largest decline in LFP took place among persons younger than 65. In the younger age groups, the generous disability insurance scheme, introduced in 1967, offered an attractive way to retire before 65. In the 1970s and 1980s, when the Netherlands faced periods of rapidly increasing unemployment, the disability route to retirement for older employees became a very popular alternative to general layoffs. In addition, many firms started offering even more generous early retirement programmes in the face of continued pressure to decrease labour costs.

In Spain, the sharpest decline is for men aged 65 and over and 60 to 64. The turndown for the other two groups is less dramatic. For women, the trend is increasing, except for those 65 and over.

3.2. Labour force participation: empirical evidence based on individual-level data

By focusing attention on individual-level data one can see the age pattern of participation for men and women. The pattern is different between men and women: in all countries, LFP rates are higher for men than for women, in some countries the difference is significant. At age 45, LFP rates for men are from 90% to 100%, while LFP rates for women are from about 44% in Italy and Spain, to at most 88% in Sweden. After that age, LFP rates start to decline: until age 55, the decline is gradual, while from 55 to 65 it speeds up. Two examples for the Netherlands and Spain are presented in Figure 2. The explanation of the precipitous drop for men between 55 and 65 seems to be early retirement. In some countries, there is a gradual parallel decline for men and women: Japan is a good example. After 65, LFP rates are very low in Belgium, France, Germany, Italy and Spain, while in the United States and in Japan they are high.

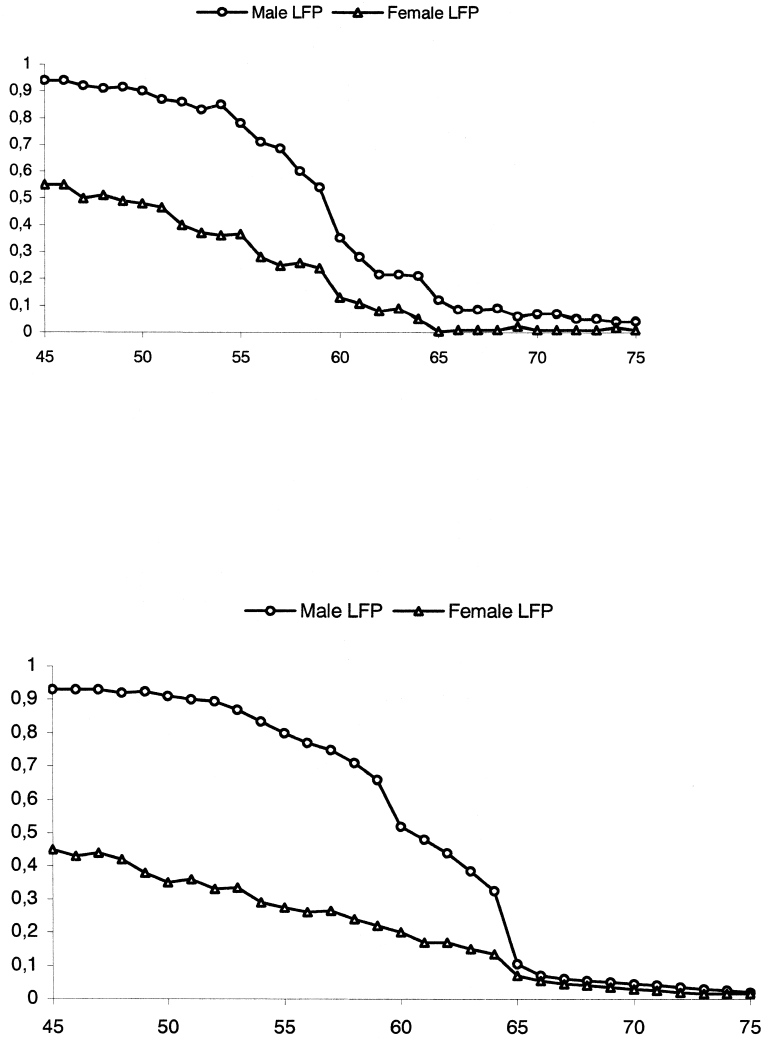


Figure 2. Two examples of age profile of LFP – The Netherlands and Spain.
 Source: Ref. 6 – based on EPA, 1993–95

An alternative way of analysing labour force trends is through the age-profile of the *hazard rates* that provide, at each age, the percentage increase of the labour force retiring from work, conditional on the existing stock of workers. The empirical hazard rate is obtained as the flow of individuals leaving the labour force at each given age over the stock of people in the labour force at that age.

In Figures 3 and 4 examples are provided for the Netherlands and Spain, and it can be seen that the hazard rates present a number of spikes. For all countries (not shown for brevity) the spikes occur after age 50 but not always at the same ages and not with the same amplitude. It seems that the most important spikes can be explained by eligibility rules; however, the amount of variability around these important spikes is also impressive. For example, in the

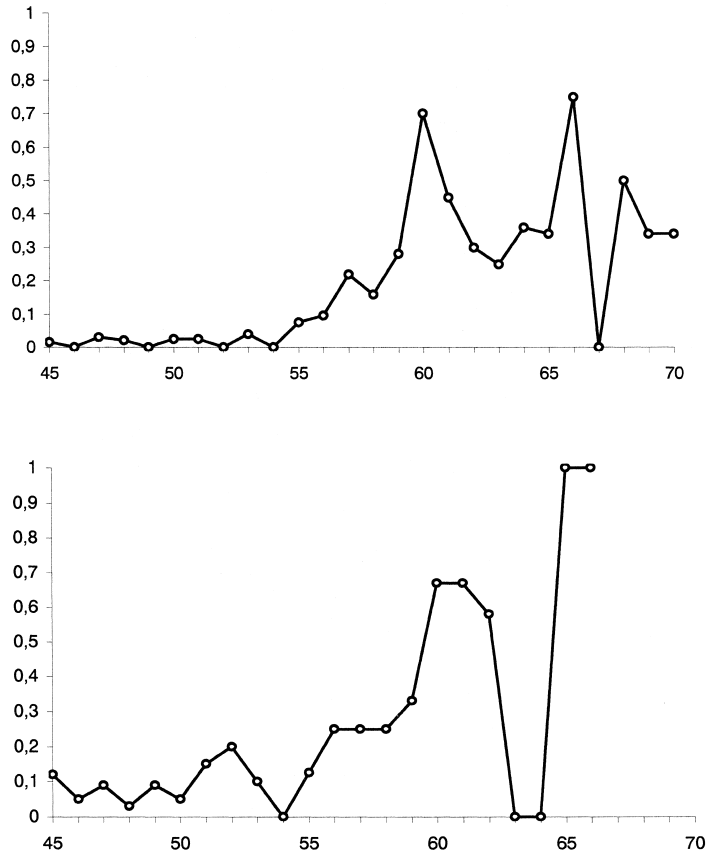


Figure 3. Hazard rates for men (top panel) and women, the Netherlands. *Source:* NL, Housing Needs Survey, 1992–93

Netherlands, hazard rates for men leaving the labour force surpass 20% around age 57 and peak at age 60, which is consistent with the proliferation of early retirement programmes. For women, leaving the labour force occurs more frequently at earlier ages but also peaks around age 60. For Spanish men, hazard rates increase smoothly with age and show clear peaks at ages 60 and 65, corresponding to the Spanish early and normal retirement ages. Among women, the behaviour of the hazard rates is very erratic at almost all ages. There are various small peaks at ages between 52 and 61, followed by the pronounced one at age 65. The only significant peaks occur at ages 61 and 65; all the others reflect pure sample noise. However, the spike at 54 can be explained by the interaction between eligibility requirements and minimum pension provisions.

4. Reasons for retirement and early retirement.

The retirement decision poses a very hard question on which economists have been debating for some time. The determinants of the retirement decision can be summarized in the following keywords: retirement rules (eligibility, earnings rules etc.), health related factors, the existence

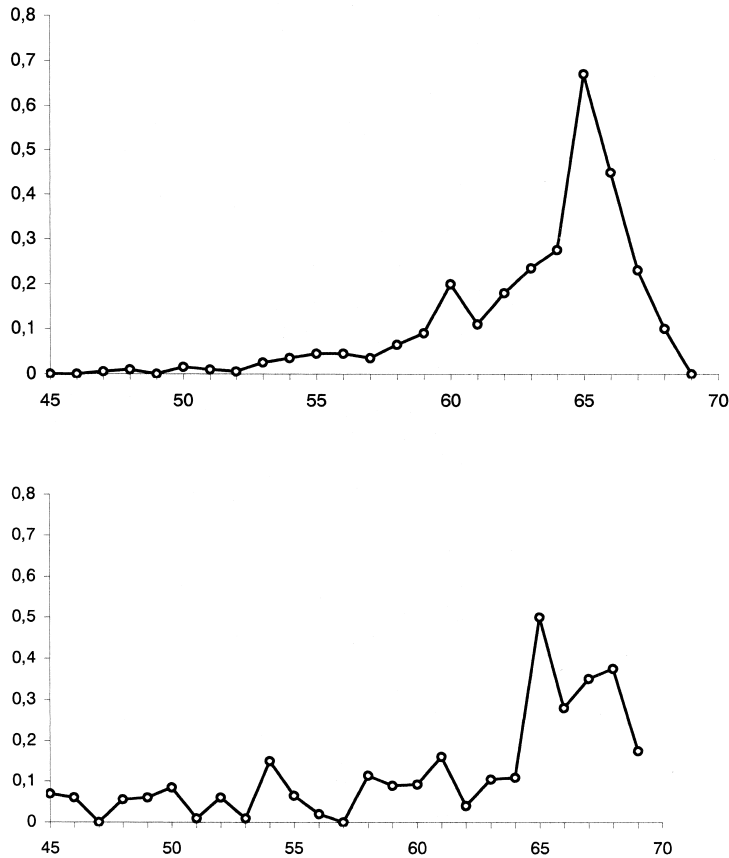


Figure 4. Hazard rates for men (top panel) and women, Spain. *Source:* Ref. 6 – based on Encuesta Poblacion Activa for the second quarters of the years 1993–95

of non-pension alternatives for old age (more generally, the availability of different sources of income in old age), actuarial (un-)fairness of pension schemes, social norms, labour demand factors (for older workers) and productivity considerations on the side of firms. Within-household decision-making could also play a role (see the literature on the retirement of couples^{8–9}), as could care responsibilities. A number of models have been used to analyse the retirement decision: these have emphasized one or more of the above aspects. The typical economic reasoning is that workers are faced each year with an ‘option’: whether to retire or to continue work, this is described into two steps. (1) The individual will continue to work at any age if the expected present value in utility units of continuing work is greater than the expected present value of immediate retirement. (2) The individual re-evaluates his or her retirement decision as more information about future earnings becomes available with age. However, this is only part of the story: if monetary incentives built in the social security system play a role for the worker’s decision, labour demand factors are also important in determining the final outcome. More generally, the health and socio-economic conditions are also important in shaping ‘preferences’ of individuals for retirement and macro-economic conditions are important for firms.

Table 3. A comparison of incentive calculations

Country	Age	Replacement Rate	Tax/Subsidy
Belgium	59	0.749	-0.157
	65	0.874	0.529
Canada	59	0.176	0.038
	65	0.6124	0.367
Sweden	59	0.459	0.146
	65	0.785	0.039
United Kingdom	65	0.464	0.01
United States	61	0.403	0.064
	65	0.749	0.188
Japan	59	0.552	-0.138
	65	0.549	0
Spain	59	0.59	-0.279
	65	0.998	0.729
France	59	0.92	-0.05
	65	0.93	0.52
Italy	55	0.726	-0.245
	59	0.798	0.401
	65	0.809	-0.756

Source: Gruber and Wise, NBER, "Social security and retirement around the world", 1999. A positive number indicates a tax on work.

For Italy I consider the situation under the pre-1992 legislation. For Canada I distinguish the case in which the family has no outside income from that in which the income is equal to \$4,818, because a critical parameter is the level of asset income available, since the GIS and SPA benefits the means tested. I focus on social security only and exclude private pensions. For Belgium and France I consider also the case in which the worker is entitled to unemployment benefits. In the United Kingdom there is no provision for early receipt of SERPS and of the basic pension.

Early retirement is even more complex to explain, as other factors are intertwined with the individual's decision and firm's arrangements. For example, governments have fostered restructuring of industries through this route.

5. Some economic measures related to the retirement decisions

A useful concept in analysing retirement choices is the 'implicit tax' on work, i.e. what is the cost to a typical worker of working an extra year, hence foregoing one year of social security benefits. A more traditional measure used in describing a social security system is the forward *replacement rate*, the rate at which social security replaces the earnings of the worker should he or she continue working in that year. To provide an example, Table 3 shows a comparison of the different incentive calculations computed for this 'typical worker'. Each row of this table represents the age of the worker in the last year that he worked; that is, the first row represents the effect of working during the 54th year and retiring on the 55th birthday. For all but two countries (Japan and Belgium at age 59), the implicit tax is positive, which implies that the social security system causes a disincentive to additional work. The disincentive measured by the implicit tax rate is higher for Southern European countries such as France, Italy and, to a certain extent, Spain, whereas it is lower in Anglo-Saxon countries. The replacement rate is very high in France, Belgium and Italy and below average in Japan, Canada, the UK and the US.

Gruber and Wise⁶ and Blöndal and Scarpetta⁵ have looked at the implicit tax on work for a number of OECD countries. There is evidence of correlation between replacement rates and

labour supply: countries where the implicit average tax on work – for people aged between 55 and 64 – was the lowest also had the lowest average age of retirement. However, the evidence from replacement rates is not clear cut, one can only detect by ‘eyeball econometrics’ a negative relationship between the replacement rate and average rate of retirement. This is another area where lack of suitable data is significant, as defining replacement rates requires a detailed knowledge of the different income sources before and after retirement and a good knowledge of eligibility rules for each individual (or groups of individuals).

6. Policy implications

This section focuses on two policy issues related to early retirement. First, I look at estimates of the costs of early retirement, then I discuss the effects of early retirement on labour market performance.

6.1. *The cost of early retirement*

It is clearly very hard to place a precise value on the cost of early retirement for the economy. At a first level, this is the cost to the social security administration and to taxpayers of financing an unfunded pension system and health care programme, which becomes potentially very expensive as the population ages. To my knowledge, there is no coherent study for Europe on such costs. Social security administrations of many countries normally publish some forecasts of future expected pension expenditures, but these are always surrounded by heated debates within each country and are hardly comparable across countries (see Ref. 11). At a second level, there is a cost associated with the output lost. In a recent paper, Herbertsson and Orszag¹² attempt to provide this measure by building on the idea of ‘unused capacity’ as also developed by Gruber and Wise.⁶ This is the complement to 100% of the labour force participation and it provides a rough measure of the percentage of people, in each age group who could potentially participate in the labour force, but have left the labour market. It is *prima facie* evidence of the resources available for production that are not used up. This cost peaks for all OECD countries during the 1980s and it gradually declines in the 1990s (but no definite reversal is observed). There is also a marked cross-country variation as the cost, in 1998, is as high as 13% in Luxembourg and Austria and 0.5% in Iceland. The OECD average is 6.3% and EU countries tend to be above average.

6.2. *Early retirement options and macroeconomic performance*

In several countries, governments, facing politically sensitive unemployment problems in declining sectors, have implemented and subsidized various so-called soft landing plans (early retirement, disability, long term unemployment benefits) to reduce labour supply. These are restricted to a number of industries, or firms within an industry that are restructuring. In these cases, the eligibility requirements for retirement are less stringent than the general rules: a worker becomes eligible even if he or she is younger than the normal retirement age and has a lower number of payroll tax payments (in years) than normally required. Workers have a strong incentive to accept the deal, as this is usually quite generous. I call this situation a

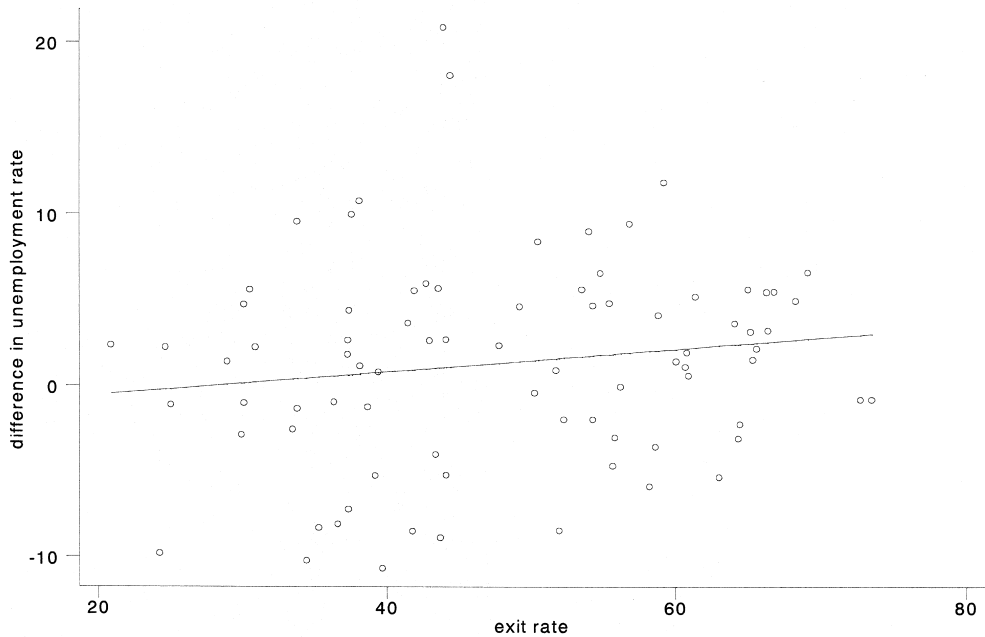


Figure 5. Early retirement (exit rate, born 1931–40) and changes in youth unemployment (aged 21–30), men. *Source:* Ref. 13 using three European Labour Force Surveys for the years 1986, 1991 and 1996

‘pre-retirement option’. Pre-retirement options offer older workers a soft landing at a cost to the active population and taxpayers. Bridging pensions, paid at rates equivalent to the standard retirement pension, with no penalty, have been used extensively in Austria, Finland, Italy, Sweden, (former) West Germany and the Netherlands. They are often accompanied by disability pensions. Firms and unions find them appealing because part of the cost falls on the taxpayer.⁷

These ‘soft landing’ plans were popular during the 1980s in countries where unemployment was reaching unaffordable levels. The political reasons given for encouraging early exits both in state-provided pensions and firm-organized plans can be summarized in two typical views: ‘to replace ageing high-wage workers by young low-wage unemployed’, or ‘placing in retirement an older worker would free the same job for a younger, possibly unemployed, worker’. As I argued, these ideas suited both governments and firms, normally at the expenses of taxpayers, because they would provide cheap rent-seeking and vote-buying activities.

However, there is no clear empirical evidence of the validity of these beliefs. Boldrin *et al.*¹³ have tested this hypothesis on labour market data for European countries over the period 1986–96. They looked for empirical support to the idea that negative variations in labour force participation rates among the elderly (55 +) should be associated with reduced unemployment in younger cohorts (aged 21–30). Figure 5 plots the relationship between the exit rate from the labour force and the variation in the unemployment rate. There is no evidence of a negative correlation: early retirement of older workers does not seem to cause a reduction in unemployment among younger ones.

7. Conclusions

I have discussed the link between early retirement/normal retirement age and departure from the labour force. Social security provisions seem to place a heavy tax burden on work past the age of early retirement eligibility (in most countries). The implicit tax on work is clearly an important component of the incentives existing in different countries to leave the labour force. Unemployment and disability programmes also serve as early retirement programmes and private pension schemes have been offering early exits in countries where occupational pensions are important. However, while it is likely that the costs of early retirement are sizeable, the alleged advantages in terms of economic performance are unclear. Most importantly, a basic lack of information and good quality longitudinal data makes it very hard to carry out interdisciplinary research on the many dimensions of the impact of ageing on European economies and European society. The related issues of retirement and early retirement can, at best, be described but not explained.

Acknowledgements

This paper is based on joint work with several authors. I have drawn freely from papers with my co-authors Tito Boeri, Carole Maignan and Franco Peracchi. I wish to thank the organizers and participants to the Academia Europaea Symposium on 'Quality of Life for the Elderly', Rotterdam, June 2001. Massimo Garbuio has provided excellent research assistance

References

1. OECD (2000) *Reforms for an Ageing Society* (Paris: OECD).
2. T. Boeri, A. Brugiavini and C. Maignan (2001) Early retirement: reasons and consequences. in T. Boeri, A. Börsch-Supan, A. Brugiavini, R. Disney, A. Kapteyn and F. Peracchi (eds), *Pensions, More Information, Less Ideology: Assessing the Long-term Sustainability of European Pension Systems* (Kluwer Academic) forthcoming.
3. The Ministry of Social Affairs, Social Policy in Denmark (1995) *Social pensions and Semiretirement Pension*, February.
4. B. Ebbinghaus (2001) Any way out of 'exit from work? Reversing the entrenched pathways of early retirement'. Mimeo.
5. S. Blöndal and S. Scarpetta (1999) The retirement in OECD countries. OECD, *Economics Department Working Papers*, No 202.
6. J. Gruber and D. Wise (1999) *Social Security and Retirement Around the World* (NBER, University of Chicago Press).
7. A. Brugiavini, B. Ebbinghaus, R. Freeman, P. Garibaldi, B. Holmlund, H. Schludi and T. Verdier (2001) What do unions do to the welfare states? In T. Boeri, A. Brugiavini and L. Calmfors (eds), *The Role of Unions in the Twenty-first Century* (Oxford University Press).
8. D. Blau (1998) Labour force dynamics of older married couples. *Journal of Labour Economics*, **16**(3), pp. 595–629.
9. C. Coile (2000) How do couples decide to retire? *Annual Joint Conference for the Retirement Research Consortium, 'The Outlook for Retirement Income'*, Washington, DC.

10. T. Boeri, A. Börsch-Supan, A. Brugiavini, R. Disney, A. Kapteyn and F. Peracchi (2001) *Pensions, More Information, Less Ideology: Assessing the Long-term Sustainability of European Pension Systems* (Kluwer Academic) forthcoming.
11. T. Herbertsson and M. Orszag (2001) The cost of early retirement in the OECD. Institute of Economic Studies Working Paper 1:02, University of Iceland.
12. M. Boldrin, J. J. Dolado, J. F. Jimeno and F. Peracchi (1999) The future of pensions in Europe. *Economic Policy*, **29**, 289–320.

About the Author

Agar Brugiavini is Professor of Economics at the University ‘Ca’ Foscari’ of Venice, Italy. She obtained a PhD in Economics at the London School of Economics, UK and was recently awarded a Fulbright Fellowship at Northwestern University, USA. She is in charge of the EU sponsored TMR (Training and Mobility of Researchers) Programme on saving and pensions. Her research interests are pensions and pension reforms, savings and insurance markets.