

Retirement and the Poverty of the Elderly in Portugal

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Abstract:

The effect of retirement on economic welfare, indirectly measured by income, has not been studied widely, namely due to the lack of longitudinal data. A large literature exists about poverty in old age, mainly based on cross sectional survey data, but usually those studies are not able to study the transitional effect of retirement on income as they do not observe the workers who do retire before and after their retirement. The knowledge of this phenomenon is, however, of crucial relevance given the growing number of elderly people, the trend towards earlier retirement, and continuing relatively high poverty rates among the elderly.

This paper analyses the association between transitions into retirement and the probability of becoming poor, considering different definitions of low income and of retirement, following what has been proposed in the literature. It is based on longitudinal data from the European Community Household Panel (ECHP) for Portugal survey waves 1-8 covering 1994-2001. Taking advantage of the longitudinal nature of the data used, we consider how the process of becoming retired is associated with an increased risk of having a low income, focusing on changes in the years immediately before and immediately after retirement for people who retire. The analysis is then focused on a sample of people who do retire during the analysed period.

The paper starts by presenting evidence comparing low income incidence among retired people and the rest of the population on each of the waves of ECHP. Afterwards it analyses some factors associated with the changes in individuals' income over a number of years around retirement. The dynamics of household income changes for people who retire are studied and which personal and household characteristics are associated with a higher risk of having low income in the years around retirement are explored. Finally, a multivariate probit model of the probability of entering low income at the time of retirement conditional on not having a low income before retirement is estimated.

Keywords: Retirement, poverty dynamics, Portugal, old-age social protection, income mobility

Classification JEL: H55, I32, J14, J26

1. Introduction

The level of income is one of the most important factors that impact the welfare of an individual, and possibly the most important economic factor. Several events may trigger considerable income drops, one being exit from labour force. Labour income accounts for a large percentage of the income of all persons. According to Heinrich (2000), in Portugal, that percentage was the largest one of the fourteen European Union countries that he studied (59% in 1996). Therefore, as exit from the labour force produces a substitution for the main source of income, someone interested in analysing income dynamics should definitely pay attention to what happens around such an event.

The demographic ageing of the economies has put a new emphasis on issues related with the welfare of the elderly. In this paper, we are concerned with the evolution of the income of the elderly. Following the argument in the previous paragraph, we should then look at what happens when an elderly leaves the labour force. But in the late part of life, that is almost the same as looking at what happens when someone retires.

Hence, this paper addresses the question “is the transition into retirement associated with an increase in the probability of becoming poor?”. The unit of analysis is the individual that retires: he/she is not necessarily an old person, but the income effect of retirement is certainly going to have consequences on how he/she is going to spend his/her old age. Since the most dramatic change in income is the one that leads someone into poverty, we focus specifically on poverty dynamics rather than on general income mobility.

A large literature exists about poverty in old age, mainly based on cross sectional survey data, but usually those studies are not able to study directly the effect of retirement on income as they do not observe the workers who do retire before and after their retirement. The knowledge of this phenomenon is, however, of crucial relevance given the growing number of elderly people, the trend towards earlier retirement, and continuing relatively high poverty rates among the elderly. This is more so when we analyse the Portuguese situation. Portugal has specificities that turn it into a natural case study: it combines high poverty rates among the elderly – using both cross-sectional and longitudinal measures – and high inequality among the elderly, with generous substitution rates concerning

retirement pensions and with the existence of social pensions for individuals who have not contributed enough to the social security system during their lives.

Our paper belongs to a second generation of studies that address the issue of poverty in old age using longitudinal data¹. The use of longitudinal data enables us to trace changes in the economic status of actual individuals or households that experience an event like retirement.

A few papers have dealt with the matter of income dynamics linked to retirement, although most of them base their results on the British² and on the North American realities³. Ours is the first study based on data for Portugal.

Most studies find that the exit from the labour force after reaching retirement age increases the chances of downward income mobility [Zaidi (2001), Holden, Burkhauser and Feaster (1988), Bardasi, Jenkins, and Rigg (2002)]. Disney, Grundy, and Johnson (1998) refer that in the UK the average income after retirement represents between 70% and 80% of the pre-retirement income. OECD (2001) confirms these values (around 80%) when considering nine developed countries, and mentions that the UK shows the worst values of them. Grad (1990) finds that in the USA full retirees earn on average 46% of pre-retirement income if they receive one type of retirement benefit and 60% of pre-retirement income if they receive two types of retirement benefits, which are even lower figures.

In the opposite direction, and using a cohort analysis, Williamson and Smeeding (2004) find that in Canada and Sweden poverty rates fall as the cohort moves past 65 years of age. Although they do not study directly the effect of retirement poverty rates, their result gives us some relevant information, since the legally-fixed retirement age is 65 years both in Sweden, and in Canada. Osberg (2001) focuses especially on the bottom income deciles of population to compare the pre-retirement and post-retirement situation. He finds that in some countries, like Canada and the UK, the presence of a floor to old age security benefits

¹ This is more recent in Europe and in the rest of the world than in the US.

² See Bardasi, Jenkins and Rigg (2002), Disney, Grundy, and Johnson (1998), Johnson, Stears and Webb (1998), Kingson and Arsenaault, (2000), Osberg (2001), Williamson and Smeeding (2004), OECD (2001), and Zaidi (2001).

³ Grad (1990), Haveman, Holden, Wilson and Wolfe (2003), Holden, Burkhauser and Feaster (1988), Hurd (1990), Osberg (2001), Williamson and Smeeding (2004), and OECD (2001).

higher than social assistance for the rest of the population has led to the poorest decile being better off after retirement.

To retire early is particularly and persistently connected to increases in poverty [Haveman, Holden, Wilson and Wolfe (2003)]. Bardasi, Jenkins and Rigg (2002) find that to be true for women.

Kingson and Arsenault (2000) stress the diversity of risks in the transition from active or part-time working status to retirement, having found that there is room to differentiate the income risk intensity in retirement transition by some sub-groups of the population as Afro-americans, Hispanics, low-income earners, unmarried individuals and unhealthy early retirees.

In our paper, we base the identification of retired individuals on the self-report of survey respondents. This allows only the classification of someone as retired or not retired, therefore not admitting the discussion of whether retirement is a gradual process or an abrupt transition. That is an interesting related topic whose answer depends on the country under consideration. In some countries -like the USA [Hungerford (2003), Grad (1990)] – retirement is a long process, whereas in others – like in Germany [Hungerford (2003)] – retirement is a rather definite point in time, since withdrawal from the labour force is usually complete from the beginning, and this coincides with the receipt of retirement income. With relation to the UK, Disney, Grundy and Johnson (1998) conclude that retirement tends to be a one-time process, whereas Bardasi, Jenkins, and Rigg (2002) reach the opposite conclusion, although more when considering women than when considering men.

The study that is closest to ours is Bardasi, Jenkins, and Rigg (2002). Both studies analyse the association between transitions into retirement and the probability of becoming poor, considering different definitions of low income and using data from the ECHP (European Community Household Panel). Their research is aimed at Great Britain, whereas ours is aimed at Portugal.

The use of income data as a proxy for economic welfare has two limitations. In the first place, when comparing income before and after retirement there is the danger of misinterpretation if a change in needs is not taken into account. After retirement, people

need less than their full pre-retirement income in order to maintain their living standards. This is due to three types of reasons. First, the earnings from work are subject to Social Security payroll taxes. These are not paid in retirement. Additionally, income taxes are frequently lower. Second, there is no more need to save for retirement. Third, work-related expenses are much reduced. Munnell and Soto (2005) refer that the studies that have examined the replacement rate that is needed to maintain previous lifestyle point to 70 to 75 percent of the pre-retirement earnings.

In the second place, appropriate levels of consumption are possible even when income levels are low. This may be due to the availability of free or nearly free goods/services (like free health care), and also to the existence of wealth levels resulting from accumulated savings.

The remainder of the paper starts by setting out the institutional context of retirement in Portugal, in section 2. Definitions and methodological issues are reported in section 3. Section 4 provides evidence comparing low income incidence among retired people and the rest of the population on each of the eight waves of the ECHP for Portugal. Section 5 analyses some factors associated with the changes in the individuals' economic welfare over a number of years around retirement. The dynamics of household income changes for people who retire are studied and the issue of which personal and household characteristics are associated with a higher risk of having low income in the years around retirement is explored. In section 6 a multivariate probit model of the probability of entering low income at the time of retirement conditional on not having a low income before retirement is estimated. Finally, section 7 concludes and discusses some policy implications of our findings.

2. The Portuguese Pension System

2.1. Main institutional characteristics

The Portuguese pension system is highly related to the Bismarckian model and can be characterized as having a predominant first pillar which is divided into three different provisions: the general scheme for private sector workers (employees and self-employed),

the special scheme for public servants (both military and civil) and the non-contributory scheme.

The *general scheme* is run by the Ministry of Labor and Solidarity. It is financed by contributions paid by employees, employers and self-employed and operates on a PAYG basis. Under this mandatory scheme, an earnings-related pension is provided for all persons aged 65 with a minimum period of 15 years of insurance.

A new pension formula has been established under the new Social Security Framework Law (Law 23/2002): the reference earnings is the average monthly wage over the entire contribution period limited to 40 years (the formula applied during the period 1994-2001 has considered the average salary of the best 10 out the last 15 years); the annual accrual rate varies from 2 to 2,3% and is regressive with reference earnings (the old flat accrual rate of 2% is still applicable for persons with a number of contributions years equal or smaller than 20 years). The new formula is gradually introduced between 2002 and 2017.⁴ The amount of statutory pension may neither be less than 30% of the reference earnings (minimum pension) nor greater than 80% of this reference (maximum pension for a full career of 40 years). For low statutory pensions, a complementary payment from the non-contributory scheme is granted in order to bring it up to the amount of minimum pension. Under this scheme, early retirement is possible for persons aged at least 55 with a minimum of 30 years of contributions but the amount of the pension is reduced by 4,5% for each year of anticipation. The 2002 Law has also introduced a contributory ceiling but this reform is still to be defined.

Mandatory occupational schemes (established through collective agreements) substitute the general scheme in bank and telecommunications employees.

The *non-contributory scheme*, financed through taxes, is also run by the Ministry of Labor and Solidarity. This scheme provides a means-tested and flat rate pension (“social pension”) to persons aged 65 or over in a situation of economic need and not entitled to a

⁴ A transitional period has been established (until 2017) during which the most favorable method is applied (the former method, the new method, or a combination of the two).

pension from the general scheme.⁵ The value is always under the minimum pension of the general scheme.

The *special scheme for public servants* is under supervision of Ministry of Finance. It is a mandatory scheme financed by social contributions paid by employees and employer and operates on a PAYG basis.⁶ Until 2005 public servants who started working before 1993 have been under more generous retirement conditions than workers of private sector, namely: the old-age pension may be claimed before the age of 60 with a period of insurance at least 36 years; because the reference earnings is the last monthly wage the public servants with a complete career have a replacement rate of 100%.⁷ The gradual harmonisation of this scheme with the general scheme is now to be implemented: the rising of retirement age to 65 (six months a year in the next ten years); the rising of the insurance period up to 40 years until (six months a year until 2016); the reduction of the amount of pension in case of early retirement; and the inclusion of all new public servants in the general scheme from 2006.

The second pillar (voluntary and funded) is under-developed. These schemes are usually pension's funds managed by private institutions.

The third pillar (individual, voluntary and funded) is mainly represented by life insurance schemes and pensions funds. Its growth has been encouraged by tax incentives.

2.2. Pensioners and pensions

In line with trends observed in other European countries, the number of contributory pensions has significantly increased (Table 2-1). During the 1994-2001 period, both the retirement pensioners under the Public Servant Scheme and the General Regime have increased by 33% and 34%, respectively. The numbers of pensioners covered by the Non-Contributory Regime and by the Special Social Scheme for Agricultural Activities (RESSAA) have showed a significant decline (50% and 28%, respectively)⁸.

⁵ The monthly income cannot exceed 30% of the minimum wage for a single person or 50% for a couple.

⁶ The Central Government is an exception: only makes transfers to cover the annual deficit.

⁷ Since 1993, all new public servants have been under the same retirement conditions as private sector workers.

⁸ The Special Social Scheme for Agricultural Activities (RESSAA) has been closed in 1986.

In 2001, the retired male receiving a pension under the public servant scheme represented 65% of all pensioners. In the general scheme this figure falls to 55%. The proportion of women receiving a pension under non-contributory scheme and RESSAA was greater than that of men (about 70% and 75%, respectively).

With regard to contributory pensions there are significant differences between the two schemes when considering the average pension of new pensioners (Table 2-2).

The figures for the new pensions revealed a significant increase in nominal terms between 1994 and 2001: 45% and 78% for workers coming from private sector and public officials, respectively. Despite the generosity of the benefit formula under the general scheme the average monthly new pension in 2001 was 352 euros which represented 48% of the average monthly earnings and only 29% of average pension under the public servant scheme (1225 euros, corresponding to 1,7 times the average earnings).

There are a number of reasons for this. First, the differences between the pension rules described above. Second, and more important, the short contribution career of retired people under general scheme. In 1994, the average contribution period was only 21 years; 73% of retirement male had paid contributions for 20 years or less and this figure increased to 88% for retirement female.⁹

Another way of analyzing the differences between the contributory schemes is to look at the number of pensioners by level of pension (Table 2-3).

Whereas a pension of 500 euros or less was granted to 92% of pensioners under general scheme this rate shifted to 31% in the public servant scheme.

In nominal terms, minimum and social pensions have been increased significantly. All pensions are adjusted once a year (on December) with regard to inflation rate but different increase rates have been applied in different pensions with lower pensions getting a higher increase.

⁹ The Portuguese social security scheme (established in 1935) only became universal after 1974. The maturity will be reached after 2015.

The ratio between the minimum pension and the minimum wage has been significantly increased: it was 53% in 1994, and it reached a proportion of 55 to 97% in 2001, according to the contributory period (Table 2-4). These figures were the result of an annual adjustment above the rate of inflation. The same principle has also been applied to pensions granted by RESSAA and to social pension.

Due to short contributory careers and very low reference earnings, the minimum and social pensions have been the most representative old age benefits under the Social Security System: in 2001, around 80% of all pensioners received an amount equal or less the minimum pension of the general scheme¹⁰. In the public servant scheme, only 2% of all pensioners received the minimum pension.

3. Data, definitions and methodological issues

The empirical data source used in this paper is the longitudinal survey of EUROSTAT, ECHP – European Community Household Panel – covering the eight waves corresponding to the 1994-2001 period. We use the UDB (*user data base*) version of this database which is representative of the whole Portuguese population. This database contains a systematic information about household income, sociodemographic and socioprofessional characterization of the individuals as their labour market status, health, education, housing conditions and a wide set of information on social indicators of standards of living of the households and persons.

The European Panel UDB version is based on four complementary modules of information (EUROSTAT, 2001): (i) the *household file* which has general information about incomes and sociodemographic characteristics of the households in each wave; (ii) the *personal file* that contains information about the “eligible respondents” of the *survey*, that is, persons aged 16 or more. In this file we can, for instance, collect data about the individual job status, the educational and professional skill levels and training, or the economic activity status (retired/ not-retired), health situation, interpersonal relationships, and other subjective assessments; (iii) *register file* which gather the whole sample of individuals (adults and

¹⁰ This rate includes pensioners under the special social scheme for agricultural activities (RESSAA) and the non-contributory scheme.

children less than 16) and (iv) the *link file* that allows to follow in time the longitudinal status of a given observation unit surviving along the panel time window.

The observation unit considered throughout the paper is the individual, either in cross-sectional or longitudinal analysis. However, the household remain the unit of measure for some variables, such as the variable of resources (income), or to characterize the environment in which the individual lives.

Starting from the original data, some methodological issues have to be dealt with and choices have to be made concerning the definitions of variables as they have direct impact on the analysis carried out.

The first issue to be addressed, as it is probably the most important to this paper, is the definition of retired individual. There are different forms of defining the “retired” state from micro data, each one with advantages and drawbacks. The various definitions depend on how the reality is inquired and on which criteria is adopted to configure the concept, of *objective* or *subjective* nature. For instance, considering an objective criteria, we can classify an individual as being retired if he/she has a pension paid by the social security system as the main income source or - it is another example - to agree on an exogenous or conventional classification based on self declared number of hours worked. In subjective terms, the individual can be classified as retired from each individual’s own assessment of his or her labour market status. We assume this option in this work. Any one of these possibilities would lead to differentiated forms of identifying the target-population of the study.

Another issue to be dealt with is the dating of retirement. Despite the fact that many authors consider the individual's transition to retirement to be a *process* (in the sense that a transition takes some time to be prepared by individuals and, thus, it is not reducible to a point in time), we adopted in the paper a more “workable” definition of retirement, based on what each adult respondent declares at a given point in time regarding his/her labour market status, just like Bardasi, Jenkins, and Rigg (2002) do. Retirement is then considered to take place in the first year the individual declares that being retired is her/his labour market status.

The third addressed question regards the choice of a variable of resources or income. We choose to consider as variable of resources the income per equivalent adult, the household remaining the unit of measure, as previously said. We have adopted the OECD modified equivalence scale to allow for comparability of incomes between households with different dimensions and compositions. The household income is expressed in real terms (base=1994) and we have also chosen to consider the *current* income per equivalent adult (that is, the available income at the month prior to the interview) instead of annual net income (which refers to the year prior the interview), as this lag between the reference date for income and, namely the dating of retirement, might introduce some noise in the analysis. *Current* income per equivalent adult is calculated from the household *current* net income after deduction of direct income taxes and contributions for the social security system. Household income is defined as the sum of cash income from all sources: labour market incomes from employment and self-employment, private investments and savings income, public occupational and private pensions and other net cash benefits from social security system¹¹.

As much attention is put on the analysis of poverty incidence, four monetary poverty lines are used throughout the paper: three *contemporary* poverty thresholds and an "anchored" poverty line. They are the following: a) the first quintil of the income per equivalent adult distribution, b) the 33rd percentile of the income per equivalent adult distribution, c) 60% of the median of the income per equivalent adult distribution and d) the "anchored" threshold, as 66% of the median of the income per equivalent adult distribution on wave 1, 1994.

Throughout the paper we use different subsets of the ECHP panel. In section 4 we use the whole sample to analyse the incidence of poverty among retired people in comparison with other groups of the population and to analyse the incidence of poverty in different groups of retired.

In section 5 we concentrate on those that have retired during our sample period. The selected sub-sample considered in the dynamic analysis has 974 individuals (481 men and 493 women) aged 50-69 years at the time of entering the panel database. These individuals have experienced a transition process to retirement state within the time window of the

¹¹ This income decomposition is only available on the annual net income variable and not on current income data, the income variable which we will use in this paper.

panel, that is, the subset of individuals belonging to that age group who, at the time of entering the panel, were classified as “not-retired” and during the panel time are observed to make a transition into retirement.

In section 6 we further restrict the analysis considering, from those that have experienced the transition to retirement during the sample period, only those that were not poor in the year prior to retirement and that are either poor or not poor after retirement.

4. Cross-section comparisons

Regardless of the definition of poverty, its incidence is always larger for retired than for not-retired persons (see Figure 4-1 and Table 4-1). The group with the lowest poverty incidence rate is that of workers.¹² The first half of the period of the analysis has been especially advantageous to retired men, since they were the group whose situation improved the most.

Retired and not-retired women usually show a larger proportion of individuals in poverty. That changes when only workers are considered. Based on the cross-section evidence, feminine workers show slightly smaller poverty incidence rates than masculine workers. The different results obtained when analysing workers and not-retired individuals must be due to the existence of a more significant part of women than of men who have no paid activity, and are not retired.

When using the median criteria, the evolution of income has been favourable to men, between 1994 and 2004. This means that equivalent income has evolved in a way that men have become better off.

For retired workers, older cohorts tend to be more subject to poverty than younger ones¹³ (see Figure 4-2 and Table 4-2). The conclusions we may reach from the cohort analysis do not change much if we consider annual or current income.

The cohort of people born since 1940 is always the one with the smallest incidence of poverty, regardless of the poverty line that we consider. The first years in the sample - until

¹² “Workers” is a subset of “not-retired”. “Not-retired” includes unemployed and some inactive population.

¹³ In our study we use four different cohorts: the first one with individuals born since 1940, the second cohort with individuals born from 1930 to 1939, the third cohort with individuals born from 1920 to 1929, and the oldest cohort with individuals born until 1919. The age composition of these cohorts is naturally different.

1997 or 1996, depending on the measure of low income, - have shown a particularly favourable evolution of this cohort's relative position.

The cohort of people born from 1930 to 1939 is always the second less poor, but depending on the poverty criterion that is considered, its situation may not improve during the period.

The other two cohorts sometimes interchange their position as the poorest cohort, although the oldest one is dominant in that position. Their situation does not improve during the period unless the criterion of 66% of the median of 1994 is used.

When analysing differences in low income incidence by household type¹⁴, we can see that retired people living alone are the ones that are worse off (See Figure 4-3 and Table 4-3). That is true both for men and for women. Nevertheless, the gap between the relative position of that household type and the position of the next poorest household type – couple with no children - is especially large for women. Men living in a couple with no children used to show considerably smaller poverty incidence rates, but that changed in the last years of our sample. For men, the first two worse off categories converged.

Men living with children (without a wife) have shown the most irregular evolution, with the largest incidence rate taking place in 1997 (47% using two of our poverty definitions) and the lowest incidence rates in 2000 or 2001 (5% in 2001 using the same two poverty definitions).

For women, the other three household types show rather similar levels.

Our results are robust to the choice of the poverty criterion.

5. Income effects in the transition to retirement

The analysis in section 4 revealed a higher incidence of poverty among retired individuals. That evidence has different implications if it results from the fact that retired and not-retired individuals have different characteristics or if it arises from the old age social protection system that does not cover retired individuals from the risk of poverty.

If the first case is true, waiting is the answer as the normal change of the composition of retired and not-retired will solve the problem, but if the second is true some political action

¹⁴ We identify 5 different types of households a retired person may belong to: 1) single person household, 2) person living with children, 3) couple with no children, 4) couple with children, and 5) others.

might be required in order to increase the ability of the social protection system to cover retired individuals against the risk of poverty.

The cross sectional analysis of poverty incidence carried out in section 4 does not allow us to answer to this question. A longitudinal analysis of the individual change of income associated with the retirement transition is required in order to evaluate whether this transition makes individuals more likely to become poor.

This is what we try to do in this section. We consider all the individuals that retired during our sample period and we evaluated the incidence of poverty in the year prior to retirement and after retirement, and also the proportion of non poor individuals in the year prior to retirement that become poor after retirement. We do this for the whole population that retires and for different groups in order to try to evaluate if there are some groups for which retirement is more likely to imply a situation of poverty. Among the characteristics considered are gender, early retirement, activity status in the year prior to retirement, and the situation regarding property of the house.

It is clear from the data that, in general, retirement increases the chances of poverty. Considering the 33rd percentile low income definition, Table 5-1 shows that the percentage of persons that live with low income in the year before retirement is inferior to the percentage of persons with low income in the retirement year.

Women are already poorer than men, on average, but they are not more penalized by retirement. The difference between the percentages of poor women and of poor men slightly decreases from the year before retirement to the year of retirement.

As expected, a large percentage of persons who live in social housing are poor, either before (59%) or after (63,9%) retirement. Nevertheless, the percentage of persons living in social housing who are not poor before but become poor in the retirement year is impressive: 38,2%. Being a home-renter is not more typical of those who become poor with retirement than being a home-owner. Nor is it more typical of those who are poor, in general.

A Portuguese person is definitely more at risk of becoming poor in the year of retirement if he/she lives in social housing, was previously an employee working less than 15 hours per week or was self-employed. Remarkably, the percentage of persons who live with low

income - in the year before retirement, and in the year of retirement – is larger for self-employed than for unemployed. Furthermore, from those who were not poor, a larger percentage of self-employed than of unemployed, fall into poverty. This probably corresponds to that part of the population that works in low productivity activities, - small agricultural workers, fishermen, or small artisanal workers for instance - that earn low and unstable incomes and seldom discount to social security.

A Portuguese person that has retired before 65 years of age, and before that was an employee working at least 15 hours per week, is relatively protected against falling into poverty in the year of retirement. This may be explained by the mass of civil servants that could retire before 65 in the considered period, and that had a well-built history of contributions to social security.

6. Multivariate analysis: determinants of becoming poor

The analysis in section 5 enabled us to evaluate whether the transition to retirement increases the probability of being poor and also for which groups this effect is stronger. But being a bivariate analysis, the conclusions have to be considered carefully as compositional effects may be present and then the marginal effects of each of the characteristics cannot be properly identified.

We estimate in this section several probit models of the probability of becoming poor on retirement, in order to try to evaluate which characteristics make some more likely to become poor when they retire, overcoming the limitations of bivariate analysis.

In this analysis only the individuals that have retired during our sample period, that were at least 50 years old in 1994, and that were not poor in the year before retirement are considered.

Probit models are estimated considering the four definitions of poverty line that we have been using and for each gender separately.

Among the explanatory variables we include those considered in previous section such as gender, activity status in the year before retirement, and home ownership. We include also other variables trying to account for differences by industry of activity in the year before retirement, geographical region of residence, type of family and for being a civil servant or

experiencing early retirement, as these may help to change the probability of becoming poor given that different industries and civil servants have different social protection regimes (see section 2).

For gender a dummy signalling *male* is included. For activity status the year previous to retirement, 5 dummies signalling being employed, part time employed, self employed, in unpaid activity or unemployed are considered. For industry we consider two dummies signalling working in manufacturing and in services. We consider four dummies to classify the type of family, considering the situations of retired alone with children, retired couple with no children, retired couple with children and others. We included regional dummies and dummies for being a civil servant and retiring before the legal age.

The reference individual is a female, not a civil servant, not early retired, living in north region, working in agriculture, that lives alone, and who is a tenant in her home.

Results of the estimated models are presented in Table 6-1: . This includes also some diagnostic tests on the overall quality of estimation.

Employment status, industry, region, type of family and being civil servant are the determinants that seem to be important in explaining entry into poverty when retirement occurs.

Regarding employment status, being self employed, having unpaid activity and, less significantly, unemployed increases the probability of becoming poor. This is different from what Bardasi, Jenkins, and Rigg (2002) found. In their paper the self-employed are not significantly more prone to become poor on retirement than inactive people, and if anything the effect would be the opposite, since the corresponding parameter is negative.

Working in Manufacturing and in the Services industries seems to decrease the probability of becoming poor in a significant way, comparing to working in Agriculture.

By region, living in Alentejo increases the probability of becoming poor whereas living in Lisbon area reduces this probability.

The type of family seems also to play a role, being retired couples with children less prone to become poor.

Another robust result is the effect of being civil servant. Being a civil servant reduces significantly the probability of becoming poor.

On the other side, early retirement, gender, and owning the house seem not to be relevant in changing the probability of becoming poor.

7. Conclusions

In this paper we address the question whether transition into retirement is associated with an increase of the probability of becoming poor. We use an income approach to poverty.

We start by analysing the incidence of poverty for different groups of the population, namely retired and non retired individuals, and among retired people and we have found that regardless of the definition of poverty, its incidence is always larger for retired than for not-retired persons. We have found some evidence of an improvement in the situation of retired individuals in the first half of the analysed period, especially of retired men.

We have also found some evidence of gender inequality as retired and not-retired women usually show a larger proportion of individuals in poverty. This difference is not present when only workers are considered which points to the fact that the difference may arise from gender differences in labour market status, namely the existence of a more significant part of women than of men who have no paid activity, and are not retired.

For retired workers, older cohorts tend to be more subject to poverty than younger ones. The cohort of people born since 1940 is always the one with the smallest incidence of poverty, regardless of the poverty line that we consider. The first years in the sample - until 1997 or 1996, depending on the measure of low income, - have shown a particularly favourable evolution of this cohort's relative position.

When analysing differences in low income incidence by household type, we saw that retired people living alone are the ones that are worse off. That is true both for men and for women. Nevertheless, the gap between the relative position of that household type and the position of the next poorest household type – couple with no children - is especially large for women.

Looking at the transition to retirement, based on a cross-sectional analysis, it emerges that retirement increases the chances of poverty. Women are poorer than men before retirement, on average, but they are not more penalized by retirement. The groups that tend to be more penalized in the transition to retirement are those living in social housing, and those having previously been employees working less than 15 hours per week or self-employed. The self-employed are more at risk of falling into poverty with retirement than the unemployed. A Portuguese person that has retired before 65 years of age, and before that was an employee working at least 15 hours per week, is relatively protected against falling into poverty in the year of retirement. This may be explained by the mass of civil servants that could retire before 65 in the considered period, and that had a well-built history of contributions to social security.

Finally we have estimated several probit models of the probability of becoming poor when retirement occurs to evaluate which characteristics make an individual more or less prone to become poor when retiring. We have found that they are: employment status, industry, region, type of family and being civil servant. Regarding employment status, being self employed, having unpaid activity and, less significantly, being unemployed increases the probability of becoming poor. Working in Manufacturing and in the Services industries seems to decrease the probability of becoming poor in a significant way, comparing to working in Agriculture. By region, living in Alentejo increases the probability of becoming poor whereas living in Lisbon area reduces this probability. As to the type of family, retired couples with children are less prone to become poor.¹⁵ Last, being a civil servant reduces significantly the probability of becoming poor. On the other side, early retirement, gender, and owning the house seem not to be relevant in changing the probability of becoming poor.

Concluding, retirement in Portugal is still associated with an increased probability of becoming poor. This is not due to a stingy social security system, but to the fact that many individuals do not meet the requirements to apply to social security retirement benefits. As our cohort analysis establishes, the oldest cohorts of retired individuals are the poorest. The younger cohorts are better protected. This implies that the problem of poverty associated to

¹⁵ This is partially explained by the use of equivalised income in the analysis.

retirement is very significant in Portugal, but it will gradually improve with the disappearance of the oldest cohorts. Meanwhile, it is highly recommended that the coverage of the risk of poverty by the old age social protection system is evaluated.

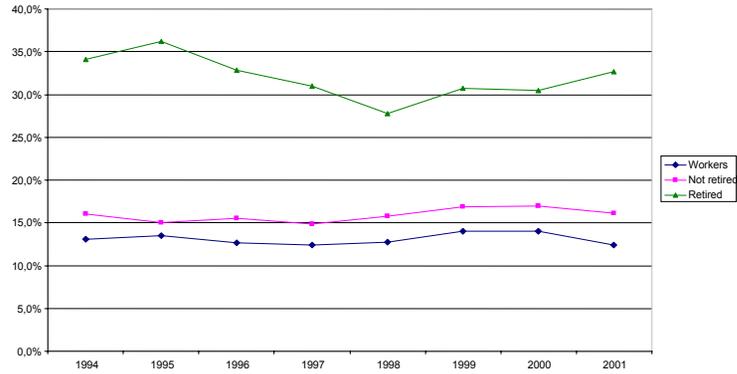
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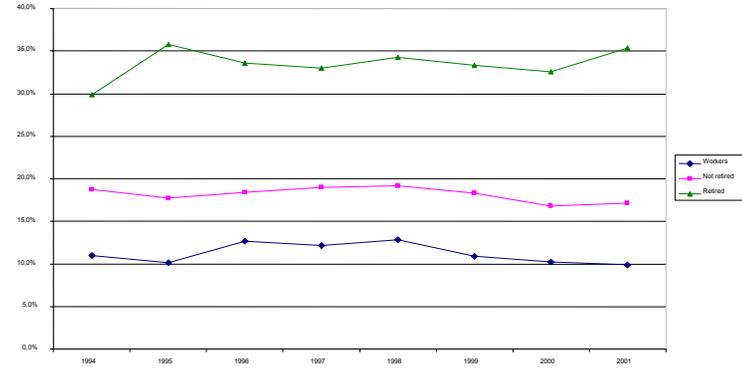
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FIGURE 4-1: LOW INCOME INCIDENCE – CROSS-SECTIONAL COMPARISONS OF RETIRED PEOPLE WITH NOT-RETIRED ADULTS AND WORKERS

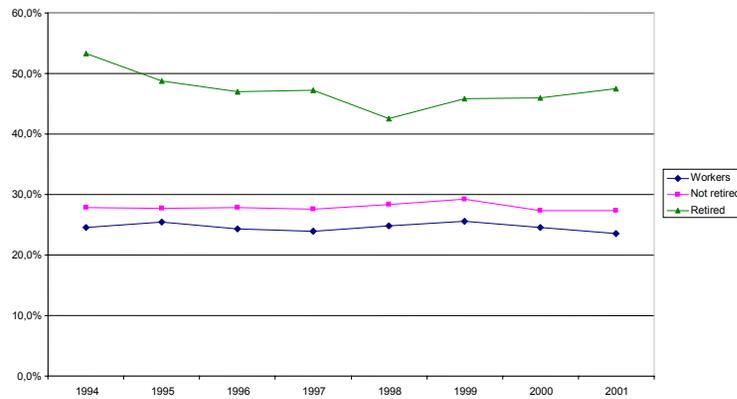
Poorest fifth - Male



Poorest fifth - Women



Poorest third - Men



Poorest third - Women

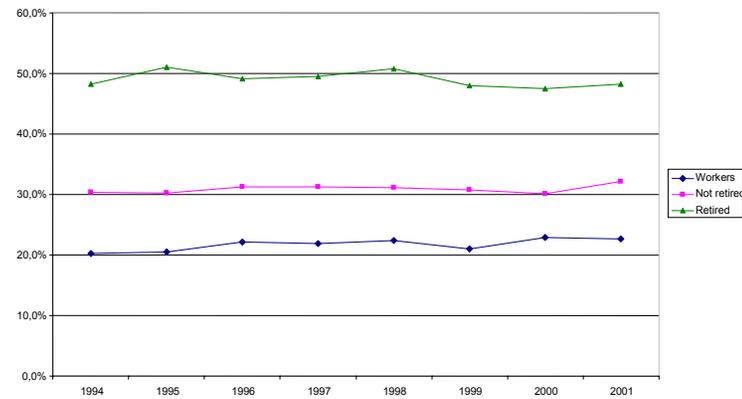
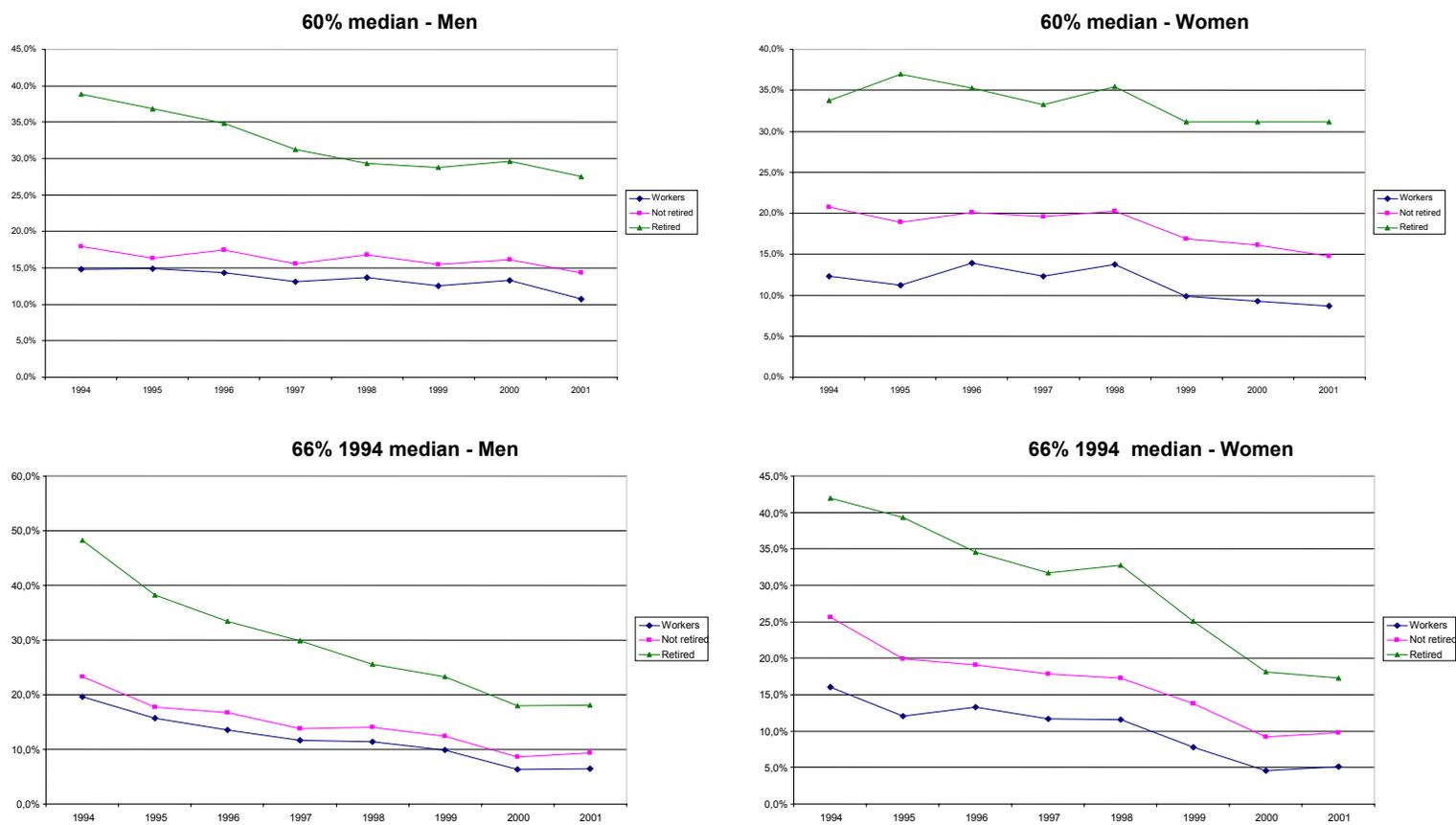


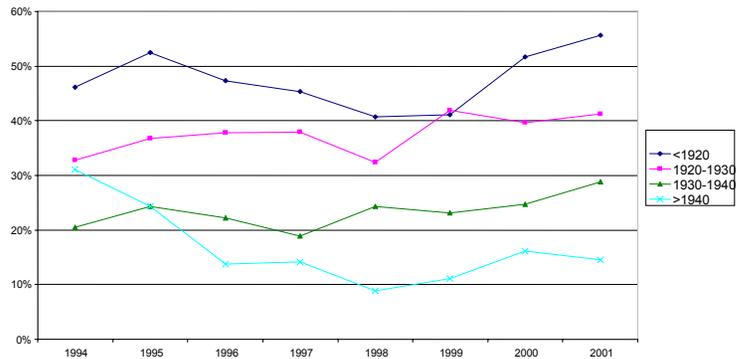
FIGURE 4-1: LOW INCOME INCIDENCE – CROSS-SECTIONAL COMPARISONS OF RETIRED PEOPLE WITH NOT-RETIRED ADULTS AND WORKERS (CONT.)



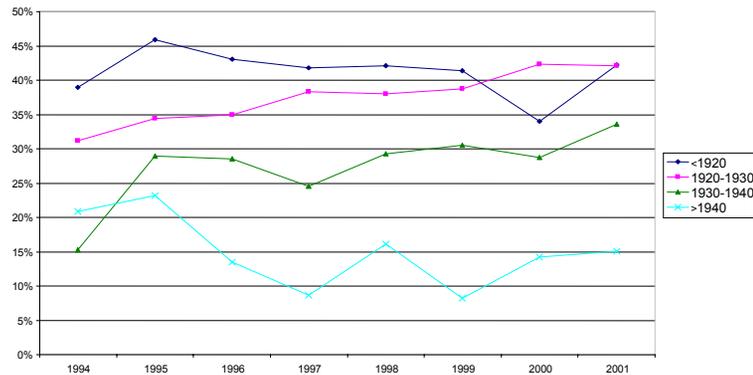
Source: Authors computations based on ECHP.

FIGURE 4-2: LOW INCOME INCIDENCE – PERCENTAGE OF RETIRED PEOPLE BELOW POVERTY THRESHOLD, BY AGE COHORT

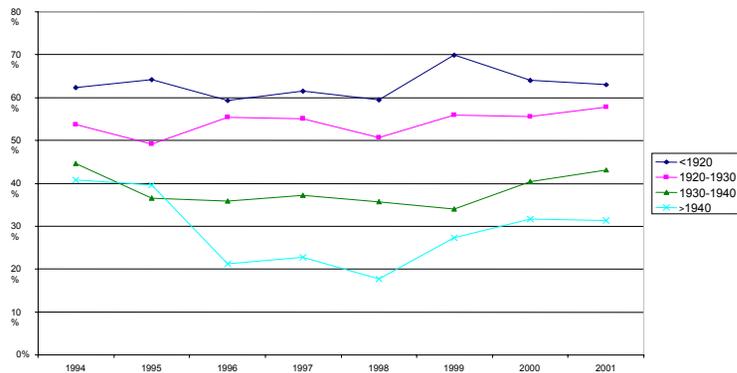
Poorest 5th - male



Poorest 5th - female



Poorest 3rd - male



Poorest 3rd - female

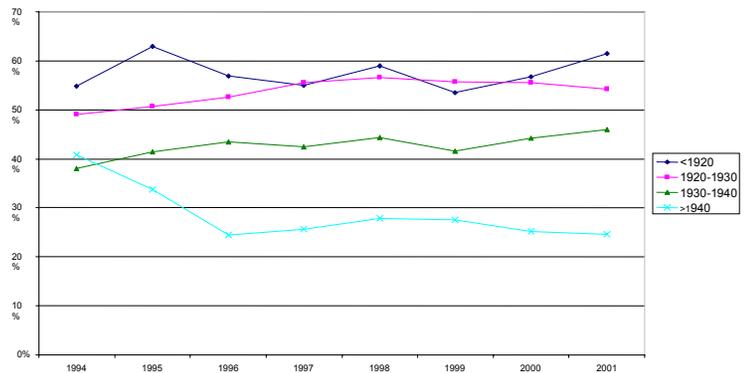
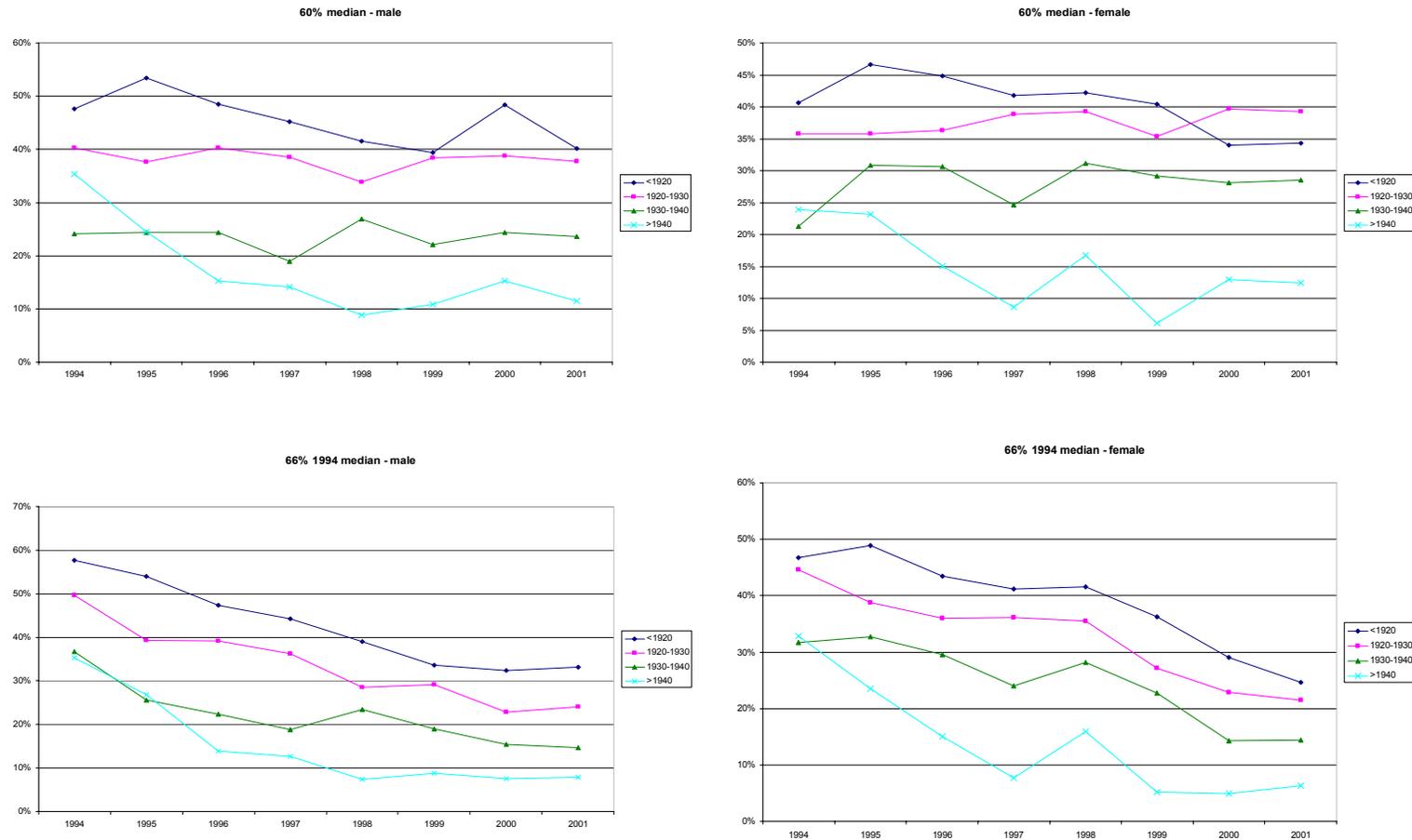


FIGURE 4-2: LOW INCOME INCIDENCE – PERCENTAGE OF RETIRED PEOPLE BELOW POVERTY THRESHOLD, BY AGE COHORT (CONT.)



Source: Authors computations based on ECHP.

FIGURE 4-3: LOW INCOME INCIDENCE – PERCENTAGE OF RETIRED PEOPLE BELOW POVERTY THRESHOLD, BY TYPE OF FAMILY

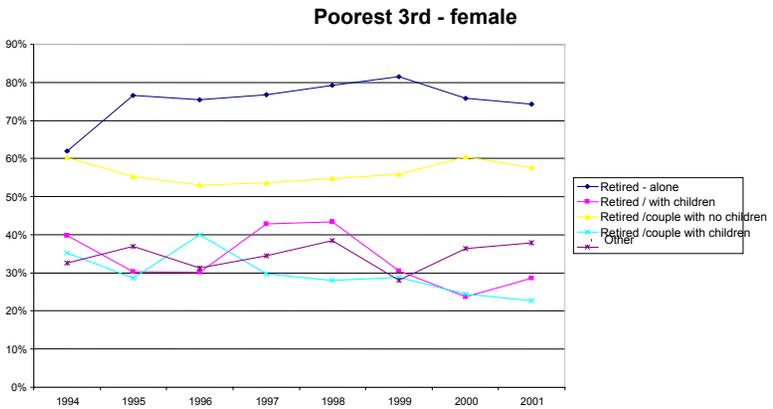
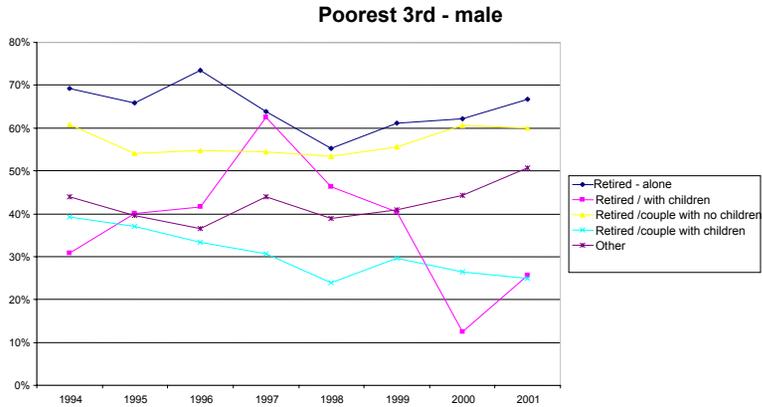
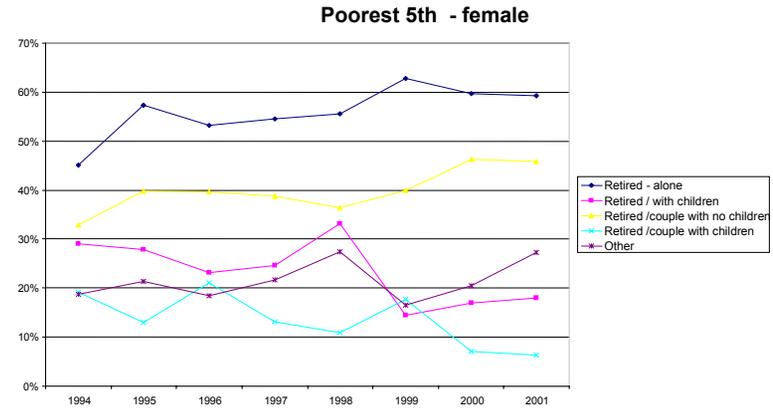
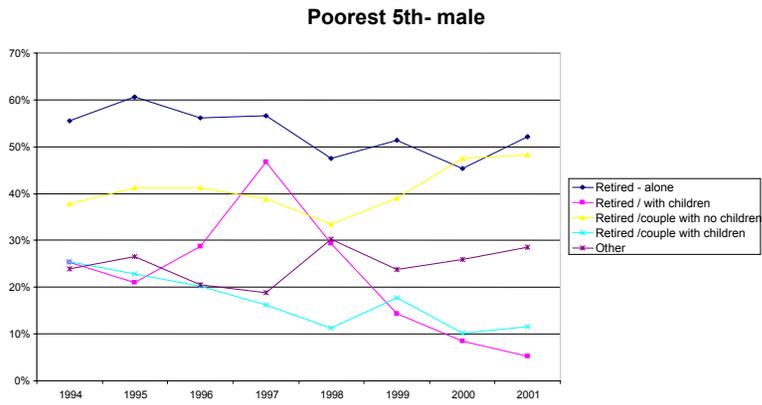
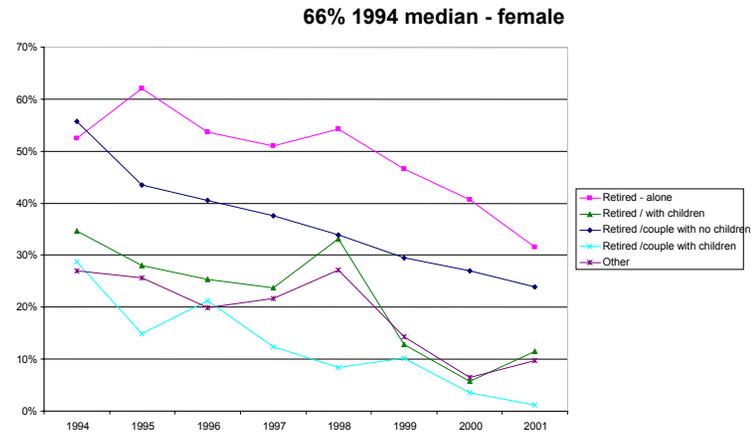
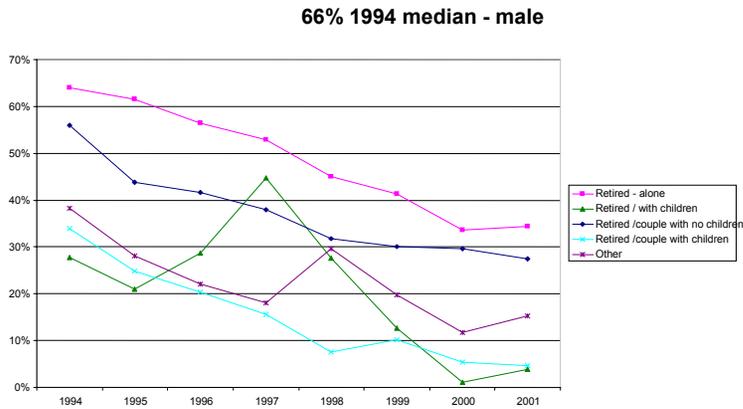
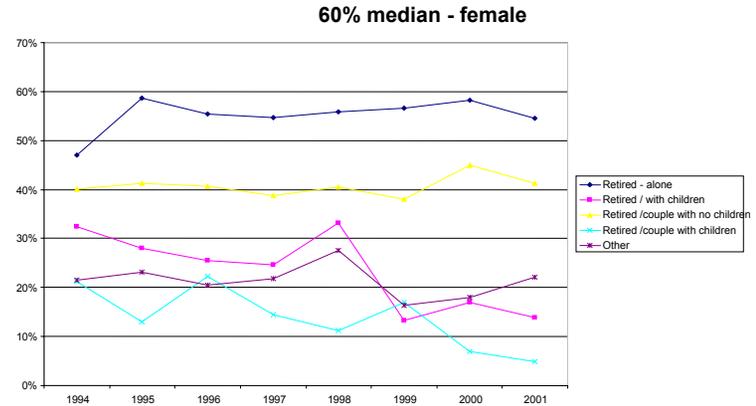
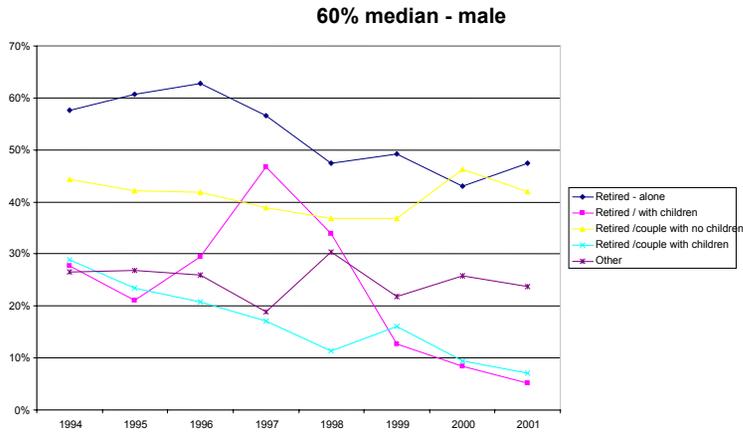


FIGURE 4-3: LOW INCOME INCIDENCE – PERCENTAGE OF RETIRED PEOPLE BELOW POVERTY THRESHOLD, BY TYPE OF FAMILY

(CONT.)



Source: Authors computations based on ECHP.

**TABLE 2-1: NUMBER OF PENSIONERS BY SCHEME
(THOUSANDS)**

| Year | Public Servant Scheme (a) | Social Security | | | |
|------|---------------------------|-----------------|----------------|-------------------------|--------|
| | | Total | General Scheme | Non-Contributory Scheme | RESSAA |
| 1994 | 237 | 1434 | 885 | 109 | 440 |
| 1997 | 285 | 1466 | 997 | 100 | 369 |
| 2001 | 316 | 1557 | 1183 | 55 | 319 |

(a) Retirement and Invalidity.

Source: CGA (1994, 1997, 2001) and INE (1994, 1997, 2001).

**TABLE 2-2: AVERAGE MONTHLY PENSION BY CONTRIBUTORY SCHEME
(NOMINAL TERMS)**

| Year | Public Servant Scheme | | General Scheme | |
|------|------------------------|---------------------------------------|------------------------|---------------------------------------|
| | New pensioners (euros) | % of the average monthly earnings (a) | New pensioners (euros) | % of the average monthly earnings (a) |
| 1994 | 842 | 150 | 198 | 35 |
| 1997 | 888 | 139 | 271 | 42 |
| 2001 | 1225 | 168 (b) | 352 | 48 (b) |

(a) Private sector workers only.

(b) Average monthly earnings for 2000.

Source: CGA (1994, 1997, 2001) and INE (1994, 1997, 2001)

**TABLE 2-3: PENSIONERS BY LEVEL OF PENSION IN 2001
(%)**

| Level of pension (euros/month) | Public Servant Scheme | General Scheme |
|--------------------------------|-----------------------|----------------|
| ≤ 500 | 31 | 92 |
| > 500 to 1000 | 33 | 6 |
| > 1000 | 36 | 2 |

Source: CGA (2001) and INE (2001).

**TABLE 2-4: MINIMUM AND SOCIAL PENSIONS
(UNTIL NOVEMBER; NOMINAL TERMS)**

| Year | Minimum Wage | | Minimum Pension (a) | | RESSAA (b) | | Social pension | |
|------|--------------|-------|---------------------|-----------|------------|---------|----------------|---------|
| | Euros (1) | Index | Euros (2) | (2)/(1) | Euros (3) | (3)/(1) | Euros (4) | (4)/(1) |
| 1994 | 246 | 100 | 131 | 53% | 93 | 38% | 83 | 34% |
| 2001 | 334 | 136 | 174 to 311 | 52 to 93% | 147 | 44% | 134 | 40% |

(a) A scale for minimum pensions (Public Servant Scheme and General Scheme) has been in place since 1 January 1999 in accordance with the contributory career.

(b) During the period 1994-2001, the pensioners under this scheme had an average contributory career of 5 years or less.

Source: CGA (1994, 2001) and INE (1994, 2001).

TABLE 4-1: CROSS SECTIONAL COMPARISONS OF LOW INCOME INCIDENCE: RETIRED PEOPLE, NON-RETIRED ADULTS, AND WORKERS

| | Year | Male | | | Female | | | All | | |
|-----------------|------|---------|-------------|---------|---------|-------------|---------|---------|-------------|---------|
| | | Workers | Not retired | Retired | Workers | Not retired | Retired | Workers | Not retired | Retired |
| Poorest fifth | 1994 | 13,1% | 16,0% | 34,1% | 11,0% | 18,8% | 29,9% | 12,2% | 17,4% | 31,7% |
| | 1995 | 13,5% | 15,1% | 36,2% | 10,2% | 17,7% | 35,8% | 12,1% | 16,4% | 35,9% |
| | 1996 | 12,7% | 15,5% | 32,9% | 12,7% | 18,4% | 33,6% | 12,7% | 17,0% | 33,3% |
| | 1997 | 12,4% | 14,9% | 30,9% | 12,2% | 19,0% | 33,0% | 12,3% | 17,0% | 32,1% |
| | 1998 | 12,8% | 15,8% | 27,8% | 12,8% | 19,2% | 34,2% | 12,8% | 17,5% | 31,4% |
| | 1999 | 14,0% | 16,9% | 30,7% | 10,9% | 18,3% | 33,4% | 12,6% | 17,6% | 32,2% |
| | 2000 | 14,0% | 17,0% | 30,5% | 10,2% | 16,8% | 32,6% | 12,3% | 16,9% | 31,6% |
| | 2001 | 12,4% | 16,1% | 32,7% | 9,9% | 17,2% | 35,4% | 11,3% | 16,6% | 34,2% |
| Poorest third | 1994 | 24,5% | 27,8% | 53,3% | 20,3% | 30,4% | 48,3% | 22,8% | 29,2% | 50,5% |
| | 1995 | 25,4% | 27,8% | 48,7% | 20,5% | 30,3% | 51,0% | 23,4% | 29,1% | 50,0% |
| | 1996 | 24,2% | 27,9% | 47,0% | 22,1% | 31,2% | 49,1% | 23,3% | 29,6% | 48,2% |
| | 1997 | 23,9% | 27,6% | 47,3% | 21,9% | 31,2% | 49,5% | 23,0% | 29,5% | 48,5% |
| | 1998 | 24,8% | 28,3% | 42,5% | 22,5% | 31,2% | 50,8% | 23,8% | 29,8% | 47,1% |
| | 1999 | 25,6% | 29,2% | 45,8% | 21,0% | 30,8% | 48,0% | 23,6% | 30,0% | 47,0% |
| | 2000 | 24,6% | 27,4% | 45,9% | 22,9% | 30,2% | 47,5% | 23,8% | 28,8% | 46,8% |
| | 2001 | 23,6% | 27,3% | 47,5% | 22,6% | 32,1% | 48,2% | 23,1% | 29,8% | 47,9% |
| 60% median | 1994 | 14,8% | 17,9% | 38,8% | 12,3% | 20,7% | 33,8% | 13,8% | 19,4% | 36,0% |
| | 1995 | 14,9% | 16,4% | 36,8% | 11,2% | 18,9% | 37,0% | 13,3% | 17,7% | 36,9% |
| | 1996 | 14,4% | 17,4% | 34,8% | 14,0% | 20,1% | 35,3% | 14,2% | 18,8% | 35,1% |
| | 1997 | 13,1% | 15,5% | 31,2% | 12,4% | 19,6% | 33,2% | 12,8% | 17,6% | 32,4% |
| | 1998 | 13,7% | 16,8% | 29,3% | 13,8% | 20,3% | 35,4% | 13,7% | 18,6% | 32,7% |
| | 1999 | 12,5% | 15,5% | 28,8% | 9,9% | 16,9% | 31,1% | 11,4% | 16,2% | 30,1% |
| | 2000 | 13,3% | 16,1% | 29,6% | 9,3% | 16,1% | 31,1% | 11,5% | 16,1% | 30,5% |
| | 2001 | 10,7% | 14,3% | 27,5% | 8,7% | 14,8% | 31,1% | 9,8% | 14,5% | 29,5% |
| 66% 1994 median | 1994 | 19,6% | 23,3% | 48,2% | 16,1% | 25,6% | 42,0% | 18,2% | 24,5% | 44,7% |
| | 1995 | 15,8% | 17,7% | 38,2% | 12,0% | 19,9% | 39,3% | 14,2% | 18,9% | 38,8% |
| | 1996 | 13,6% | 16,7% | 33,4% | 13,3% | 19,1% | 34,5% | 13,5% | 17,9% | 34,0% |
| | 1997 | 11,6% | 13,8% | 29,9% | 11,7% | 17,9% | 31,7% | 11,6% | 15,9% | 30,9% |
| | 1998 | 11,4% | 14,1% | 25,6% | 11,6% | 17,3% | 32,8% | 11,5% | 15,7% | 29,6% |
| | 1999 | 9,8% | 12,4% | 23,2% | 7,8% | 13,8% | 25,1% | 9,0% | 13,1% | 24,2% |
| | 2000 | 6,4% | 8,6% | 18,0% | 4,5% | 9,2% | 18,1% | 5,6% | 8,9% | 18,0% |
| | 2001 | 6,5% | 9,3% | 18,1% | 5,1% | 9,8% | 17,2% | 5,9% | 9,6% | 17,6% |

Source: Authors computations based on ECHP.

TABLE 4-2: CROSS SECTIONAL COMPARISONS OF LOW INCOME INCIDENCE FOR RETIRED INDIVIDUALS BY AGE COHORT

| | Year | Male | | | | Female | | | |
|-----------------|------|------------|-----------|-----------|-------|------------|-----------|-----------|-------|
| | | Age cohort | | | | Age cohort | | | |
| | | <1920 | 1920-1930 | 1930-1940 | >1940 | <1920 | 1920-1930 | 1930-1940 | >1940 |
| Poorest fifth | 1994 | 46,1% | 32,8% | 20,4% | 31,1% | 38,9% | 31,1% | 15,3% | 20,8% |
| | 1995 | 52,5% | 36,7% | 24,3% | 24,3% | 45,9% | 34,4% | 28,9% | 23,1% |
| | 1996 | 47,3% | 37,8% | 22,2% | 13,8% | 43,1% | 34,9% | 28,5% | 13,5% |
| | 1997 | 45,3% | 38,0% | 18,9% | 14,1% | 41,8% | 38,3% | 24,5% | 8,7% |
| | 1998 | 40,7% | 32,4% | 24,4% | 8,8% | 42,1% | 37,9% | 29,3% | 16,1% |
| | 1999 | 41,1% | 41,9% | 23,1% | 11,1% | 41,3% | 38,7% | 30,5% | 8,2% |
| | 2000 | 51,6% | 39,6% | 24,7% | 16,1% | 34,1% | 42,3% | 28,7% | 14,2% |
| | 2001 | 55,7% | 41,2% | 28,8% | 14,5% | 42,2% | 42,1% | 33,6% | 15,1% |
| Poorest third | 1994 | 62,3% | 53,7% | 44,6% | 40,7% | 54,9% | 49,0% | 38,1% | 40,8% |
| | 1995 | 64,1% | 49,3% | 36,5% | 39,6% | 62,9% | 50,6% | 41,3% | 33,8% |
| | 1996 | 59,3% | 55,4% | 35,9% | 21,2% | 56,9% | 52,6% | 43,5% | 24,5% |
| | 1997 | 61,4% | 55,0% | 37,2% | 22,8% | 55,0% | 55,6% | 42,4% | 25,7% |
| | 1998 | 59,5% | 50,7% | 35,7% | 17,7% | 58,9% | 56,6% | 44,3% | 27,8% |
| | 1999 | 69,8% | 55,9% | 34,1% | 27,2% | 53,5% | 55,7% | 41,5% | 27,6% |
| | 2000 | 63,9% | 55,7% | 40,5% | 31,7% | 56,7% | 55,5% | 44,3% | 25,2% |
| | 2001 | 63,0% | 57,7% | 43,1% | 31,2% | 61,5% | 54,3% | 46,0% | 24,5% |
| 60% median | 1994 | 47,6% | 40,2% | 24,1% | 35,3% | 40,6% | 35,8% | 21,2% | 23,9% |
| | 1995 | 53,4% | 37,7% | 24,3% | 24,5% | 46,6% | 35,8% | 30,9% | 23,1% |
| | 1996 | 48,5% | 40,3% | 24,4% | 15,3% | 44,9% | 36,4% | 30,6% | 15,0% |
| | 1997 | 45,3% | 38,6% | 19,0% | 14,1% | 41,8% | 38,8% | 24,7% | 8,7% |
| | 1998 | 41,5% | 33,9% | 26,9% | 8,8% | 42,2% | 39,3% | 31,2% | 16,8% |
| | 1999 | 39,4% | 38,4% | 22,1% | 10,8% | 40,4% | 35,3% | 29,1% | 6,1% |
| | 2000 | 48,4% | 38,8% | 24,4% | 15,3% | 34,0% | 39,6% | 28,1% | 13,0% |
| | 2001 | 40,2% | 37,8% | 23,6% | 11,5% | 34,3% | 39,2% | 28,5% | 12,5% |
| 66% 1994 median | 1994 | 57,6% | 49,7% | 36,7% | 35,3% | 46,7% | 44,5% | 31,7% | 32,8% |
| | 1995 | 54,0% | 39,3% | 25,7% | 26,9% | 48,9% | 38,8% | 32,7% | 23,5% |
| | 1996 | 47,4% | 39,1% | 22,3% | 13,8% | 43,4% | 36,0% | 29,5% | 15,0% |
| | 1997 | 44,2% | 36,3% | 18,9% | 12,7% | 41,2% | 36,2% | 24,0% | 7,7% |
| | 1998 | 39,0% | 28,5% | 23,4% | 7,5% | 41,6% | 35,5% | 28,2% | 16,0% |
| | 1999 | 33,6% | 29,2% | 19,0% | 8,8% | 36,2% | 27,2% | 22,7% | 5,2% |
| | 2000 | 32,5% | 22,8% | 15,4% | 7,6% | 29,0% | 22,8% | 14,2% | 4,9% |
| | 2001 | 33,2% | 24,0% | 14,6% | 7,9% | 24,6% | 21,4% | 14,3% | 6,3% |

Source: Authors computations based on ECHP.

TABLE 4-3: CROSS SECTIONAL COMPARISONS OF LOW INCOME INCIDENCE FOR RETIRED INDIVIDUALS BY TYPE OF FAMILY

| | Year | Male | | | | | Female | | | | |
|-----------------|------|-----------------|-------------------------|----------------------------------|-------------------------------|-------|-----------------|-------------------------|----------------------------------|-------------------------------|-------|
| | | Retired - alone | Retired / with children | Retired /couple with no children | Retired /couple with children | Other | Retired - alone | Retired / with children | Retired /couple with no children | Retired /couple with children | Other |
| Poorest fifth | 1994 | 55,5% | 25,2% | 37,8% | 25,5% | 23,8% | 45,1% | 29,0% | 32,8% | 19,1% | 18,7% |
| | 1995 | 60,6% | 21,0% | 41,2% | 22,9% | 26,6% | 57,4% | 27,9% | 39,8% | 12,9% | 21,3% |
| | 1996 | 56,2% | 28,7% | 41,2% | 20,3% | 20,5% | 53,2% | 23,2% | 39,6% | 21,1% | 18,5% |
| | 1997 | 56,6% | 46,8% | 38,9% | 16,2% | 18,8% | 54,5% | 24,6% | 38,7% | 13,1% | 21,7% |
| | 1998 | 47,5% | 29,3% | 33,5% | 11,3% | 30,1% | 55,6% | 33,2% | 36,4% | 11,0% | 27,5% |
| | 1999 | 51,3% | 14,4% | 39,0% | 17,7% | 23,7% | 62,8% | 14,4% | 40,0% | 17,6% | 16,5% |
| | 2000 | 45,4% | 8,5% | 47,4% | 10,2% | 25,8% | 59,7% | 17,0% | 46,3% | 7,1% | 20,5% |
| | 2001 | 52,0% | 5,2% | 48,3% | 11,5% | 28,5% | 59,2% | 17,9% | 45,8% | 6,3% | 27,3% |
| Poorest third | 1994 | 69,3% | 30,8% | 60,8% | 39,2% | 44,0% | 62,0% | 39,7% | 60,3% | 35,2% | 32,5% |
| | 1995 | 65,9% | 40,1% | 54,1% | 37,0% | 39,5% | 76,5% | 30,4% | 55,2% | 28,6% | 36,9% |
| | 1996 | 73,4% | 41,6% | 54,7% | 33,3% | 36,5% | 75,3% | 30,2% | 53,0% | 40,0% | 31,3% |
| | 1997 | 63,8% | 62,5% | 54,4% | 30,7% | 43,9% | 76,8% | 42,9% | 53,6% | 29,7% | 34,5% |
| | 1998 | 55,3% | 46,4% | 53,3% | 24,0% | 39,0% | 79,2% | 43,3% | 54,8% | 28,0% | 38,4% |
| | 1999 | 61,2% | 40,4% | 55,7% | 29,6% | 40,9% | 81,5% | 30,6% | 55,8% | 28,8% | 28,1% |
| | 2000 | 62,2% | 12,5% | 60,6% | 26,4% | 44,4% | 75,8% | 23,7% | 60,5% | 24,5% | 36,5% |
| | 2001 | 66,7% | 25,6% | 59,9% | 24,9% | 50,7% | 74,3% | 28,7% | 57,7% | 22,8% | 37,9% |
| 60% median | 1994 | 57,6% | 27,7% | 44,3% | 28,9% | 26,5% | 47,0% | 32,4% | 40,1% | 21,3% | 21,5% |
| | 1995 | 60,8% | 21,0% | 42,2% | 23,4% | 26,7% | 58,6% | 28,0% | 41,3% | 12,9% | 23,2% |
| | 1996 | 62,7% | 29,5% | 41,8% | 20,8% | 26,0% | 55,5% | 25,5% | 40,7% | 22,2% | 20,5% |
| | 1997 | 56,6% | 46,8% | 38,9% | 17,2% | 18,9% | 54,6% | 24,6% | 38,7% | 14,4% | 21,8% |
| | 1998 | 47,5% | 34,0% | 36,9% | 11,3% | 30,4% | 55,8% | 33,2% | 40,6% | 11,1% | 27,6% |
| | 1999 | 49,2% | 12,7% | 36,9% | 16,0% | 21,9% | 56,6% | 13,2% | 38,0% | 16,9% | 16,3% |
| | 2000 | 43,0% | 8,5% | 46,3% | 9,5% | 25,8% | 58,1% | 17,0% | 44,9% | 6,9% | 18,0% |
| | 2001 | 47,4% | 5,2% | 42,0% | 7,1% | 23,8% | 54,5% | 13,9% | 41,2% | 4,9% | 22,1% |
| 66% 1994 median | 1994 | 64,0% | 27,7% | 56,0% | 33,9% | 38,2% | 52,5% | 34,6% | 55,7% | 28,8% | 27,0% |
| | 1995 | 61,6% | 21,0% | 43,8% | 24,8% | 28,0% | 62,1% | 28,0% | 43,5% | 14,9% | 25,7% |
| | 1996 | 56,5% | 28,7% | 41,6% | 20,4% | 22,1% | 53,6% | 25,3% | 40,5% | 21,2% | 19,9% |
| | 1997 | 52,8% | 44,7% | 38,0% | 15,5% | 18,1% | 51,0% | 23,8% | 37,6% | 12,4% | 21,7% |
| | 1998 | 45,0% | 27,6% | 31,7% | 7,6% | 29,6% | 54,3% | 33,2% | 33,9% | 8,3% | 27,1% |
| | 1999 | 41,4% | 12,7% | 30,1% | 10,3% | 19,7% | 46,5% | 12,9% | 29,5% | 10,2% | 14,3% |
| | 2000 | 33,6% | 1,0% | 29,6% | 5,3% | 11,7% | 40,6% | 5,8% | 26,9% | 3,5% | 6,5% |
| | 2001 | 34,4% | 3,8% | 27,4% | 4,6% | 15,3% | 31,5% | 11,4% | 23,9% | 1,2% | 9,8% |

Source: Authors computations based on ECHP.

TABLE 5-1: LOW INCOME INCIDENCE AMONG PERSONS WHO RETIRE IN THE YEAR BEFORE RETIREMENT, THE RETIREMENT YEAR AND INFLOW INTO LOW INCOME.

| | Percentage of persons who retire: | | Percentage of persons who retire that are not poor in the year before retirement but become poor in the retirement year | N |
|--------------------------------|---|--|---|-----|
| | with low income in the year before retirement | with low income in the retirement year | | |
| All | 44,5% | 48,3% | 20,5% | 956 |
| Men | 40,6% | 44,8% | 20,3% | 473 |
| Women | 48,2% | 51,8% | 20,8% | 483 |
| Under retirement age | 36,1% | 38,6% | 11,7% | 321 |
| Over retirement age | 48,7% | 53,2% | 26,1% | 635 |
| Owner occupier | 44,7% | 48,3% | 19,5% | 723 |
| Social housing | 59,0% | 63,9% | 38,2% | 150 |
| Other (renter, etc) | 35,3% | 40,0% | 18,6% | 83 |
| Self-employed* | 55,0% | 61,1% | 36,8% | 211 |
| Employee (15+hours/week)* | 17,9% | 25,6% | 12,5% | 273 |
| Employee (less 15 hours/week)* | 60,0% | 80,0% | 50,0% | 5 |
| Unemployed* | 50,0% | 52,3% | 25,6% | 86 |
| Other (inactive, unpaid work)* | 55,6% | 55,9% | 19,7% | 354 |
| Unknown | 61,5% | 57,7% | 30,0% | 26 |

* In the year prior to retirement

Source: Authors computations based on ECHP.

TABLE 6-1: PROBIT MODEL OF MOBILITY INTO POVERTY FOR PEOPLE WHO RETIRE

| Variable | Model 1 - Bottom 20% | Model 2 - Bottom 33% | Model 3 - 60% median | Model 4 - 66% 1994 median |
|---------------------------------|-------------------------|-------------------------|-------------------------|------------------------------|
| | Marginal effect | Marginal effect | Marginal effect | Marginal effect |
| <i>Gender</i> | | | | |
| Male | 0,014 | 0,007 | -0,001 | -0,019 |
| <i>Activity status</i> | | | | |
| employee | 0,065 | 0,042 | 0,064 | 0,059 |
| part time | | 0,325 | | |
| self-employed | 0,108 * | 0,179 * | 0,150 * | 0,114 * |
| unpaid activity | 0,160 ** | 0,294 * | 0,241 * | 0,214 * |
| unemployed | 0,109 ** | 0,054 | 0,105 ** | 0,055 |
| <i>Industry</i> | | | | |
| manufacturing | -0,079 ** | -0,091 | -0,095 * | -0,062 * |
| services | -0,081 * | -0,056 | -0,079 * | -0,035 |
| early retired | -0,024 | -0,054 | -0,029 | -0,026 |
| owner-occupier | -0,057 | -0,075 | 0,000 | -0,046 |
| free occupier | -0,042 | -0,033 | 0,082 | -0,023 |
| <i>Region</i> | | | | |
| centro | -0,017 | -0,076 | 0,005 | 0,012 |
| lisbon | -0,093 * | -0,070 | -0,073 ** | -0,016 |
| alentejo | 0,141 * | 0,099 | 0,197 * | 0,065 ** |
| algarve | -0,027 | -0,097 ** | -0,014 | -0,017 |
| acores | -0,025 | -0,095 | -0,014 | -0,018 |
| <i>Type of family</i> | | | | |
| retired alone with children | 0,006 | 0,063 | 0,048 | 0,066 |
| retired couple with no children | -0,013 | 0,039 | 0,015 | 0,011 |
| retired couple with children | -0,132 * | -0,072 | -0,107 ** | -0,068 ** |
| others | -0,019 | 0,044 | 0,050 | -0,014 |
| civil servant | -0,075 * | -0,121 * | -0,091 * | -0,093 * |
| Nº Obs | 664 | 531 | 660 | 664 |
| LR chi2 | 76 * | 76 * | 95,23 * | 73,19 * |
| Pseudo R2 | 0,131 | 0,141 | 0,161 | 0,158 |

* - significant at 5% level; ** - significant at 10% level

Note: The reference individual is a female, not a civil servant, not early retired, living in north region, working in agriculture, that lives alone, and who is a tenant in her home.