

1 **Working after age 50 in Spain. Is the trend towards** 2 **early retirement reversing?**

3 *Madelin Gómez-León and Pau Miret-Gamundi**

4 **Abstract**

5 As the baby boom cohort approaches retirement, there has been considerable
6 uncertainty about the economic sustainability of the social security systems in most
7 of the developed world. In recent decades, Spain has had both one of the oldest
8 populations and the lowest levels of employment among the population aged 50 and
9 over in Europe. This article addresses these issues by investigating the relationship
10 between ageing and labour participation in the adult population. We examine the
11 changes in employment exit patterns among men and women between 1999 and
12 2012, and the factors which influence early retirement, using the Spanish Labour
13 Force Survey (panel dataset). We found clear gender effects in retirement behaviour
14 in terms of the shares of the population who were not working and the predictors of
15 early retirement. The partner is shown to be more relevant in the retirement timing
16 decisions of men, while dependents are found to be more relevant in the decisions
17 of women. Moreover, the likelihood of exiting the labour market early appears to be
18 decreasing among women, and increasing among men.

19 **1 Introduction**

20 Since the end of the 20th century, scholars and policy-makers in general have been
21 increasingly concerned about the demographic, social, and economic consequences
22 of population ageing (Dixon 2003; Christensen et al. 2009; Bloom et al. 2011).
23 In discussions of this issue, much attention has been focused on the relationship
24 between demographic ageing and the labour market. The declining workforce is
25 driven by two factors: on the one hand, the working-age population is decreasing

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1 due to sustained low levels of fertility (Barwell 2001; Aaronson et al. 2006); while
2 on the other, the retired population is increasing, especially with the baby boom
3 cohorts approaching retirement ages (Díez 1999, Auer and Fortuny 2000, Díaz and
4 Llorente 2005). This phenomenon of a decline in the size of the population of active
5 ages has led some observers to express considerable uncertainty about the economic
6 sustainability of the European welfare system, and particularly of Europe's pension
7 systems.

8 Several studies have focused on the transition from working to non-working status
9 at older adult ages. Job characteristics, labour market structures, and the institutional
10 background play significant roles in the transition from employment to permanent
11 retirement (Burtless and Moffitt 1984; Antolín and Scarpetta 1998; Cano et al. 2000;
12 Flippen and Tienda 2000). Furthermore, a range of demographic characteristics—
13 such as gender, age, educational attainment, and family responsibilities—have
14 considerable influence on the timing of retirement (Auer and Fortuny 2000; Garrido
15 2004; Ortiz 2004; Flores 2008; Dittrich et al. 2011).

16 The Spanish population structure is among the oldest in Europe (Puyol 2005).
17 Moreover, as in most other European countries, in Spain the ages at which adults
18 leave the labour market have been falling (Quinn 1999; Gendell 2001; Garrido and
19 Chuliá 2005; Christensen et al. 2009).

20 This paper examines the patterns of employment of the adult population in
21 Spain, paying special attention to the permanent early exits of older adults and
22 the interrelationship between an individual's early retirement and his or her family
23 arrangements. Among adults approaching the state pension age (SPA),¹ we seek to
24 characterise the nature of labour market exits which result in permanent inactivity,
25 evaluating the effects of socio-demographic determinants on withdrawal from
26 employment. Specifically, this paper will:

- 27 1. *Describe the employment patterns of individuals near the SPA in Spain, before*
28 *and after the economic crisis in 2008.*
- 29 2. *Examine the socio-demographic determinants which influence the transition*
30 *to permanent labour inactivity among older adults in Spain.*

31 The focus of the paper is on early exits from the labour market among the adult
32 population; i.e. entry into retirement by individuals who have not yet reached
33 the SPA (age 65), when they can claim 100% of work-related pension benefits.
34 Before this age, access to various benefit regimes is based on contextual conditions,
35 individual characteristics, and the terms of pension schemes. These regimes will be
36 described in greater detail in the following section.

37 We will study exits from employment among adults between the ages of 50 and 64,
38 or under the SPA (the point at which the majority of workers enter retirement).

¹ The state pension age (SPA) was 65 for both sexes in Spain until 2013, when it started to gradually increase. The SPA will reach 67 in 2030. The SPA is the age at which an individual can apply for 100% of a retirement pension, based on the number of years worked and the contributions made to the pension system.

1 We have chosen to focus on this age range in our study because previous research
2 has shown that labour market participation rates of males start to decline around
3 age 50 (Gómez-León 2013). Moreover, this decline appears to be driven by the
4 difficulties individuals face in re-entering employment at this stage of their life
5 (Chan and Stevens 2001; Hofäcker 2006), and the incentives they are offered by
6 companies or by private or public schemes to remain outside of the workforce
7 (Shultz et al. 1998; Oswald 1999; Dittrich et al. 2011).

8 The transition to inactivity among the adult population can be analysed from
9 a variety of perspectives and with a multiplicity of determinant factors. Using
10 a demographic approach, we will investigate in this paper the changes in the
11 ages at which workers exit employment and the socio-demographic factors which
12 influence early retirement among the adult population, including differences in sex,
13 educational attainment, and household composition. Specifically, we will analyse
14 the evolution of employment and early exits among the adult population in Spain,
15 highlighting the effects of family and economic contexts during the period of study
16 (1999–2012) and the gender differences in the Spanish labour market.

17 **2 Contextual and individual background**

18 In recent years, European governments have expressed concerns about the decline
19 in the size of the working population, whose contributions are needed to sustain
20 the dependent population; i.e. those who are not in employment. Recent policy
21 debates have therefore focused on ways to encourage people to spend more time
22 in employment, and in particular to delay their permanent exit from the labour
23 market. Regulations which limit early retirement and which extend the retirement
24 age beyond the SPA have been introduced in most European countries (European
25 Union 2012). Yet despite these efforts, in recent decades the employment rates of
26 55–64-year-olds have declined considerably in most European countries, and the
27 mean actual retirement age has fallen in most OECD countries (Auer and Fortuny
28 2000; López 2004; Antón et al. 2007; Bloom et al. 2011). In the case of Spain, where
29 the SPA was set at 65 until 2013, the mean age of exit has consistently been below
30 this level for the last three decades, with a mean age of exit of around 62 in 2012.

31 Withdrawal from the labour market is basically determined by three interrelated
32 dimensions: the institutional or legal context (macro level), the structural or
33 economic context (meso level), and individual characteristics (micro level).

34 The first dimension is the institutional or legal context, which is determined
35 primarily by the policy and legal framework. This context limits and conditions
36 the duration of an individual's years in employment by regulating the age of
37 entrance into the labour market and the age of exit or retirement. The retirement
38 age is typically set through regulated sources of income, such as social pensions
39 or other economic benefits (Casey and Wood 1994; García 2003). Individuals who
40 have worked for a period of time generally have access to a retirement pension
41 after fulfilling certain requirements. If individuals are leaving the labour market

1 temporarily or have not yet met the requirements for retirement, they can apply
2 for other types of benefits, including unemployment benefits; this is a widely used
3 pathway to an early labour market exit among older adults, as discussed below.

4 The decline in the mean age of retirement is attributable in large part to
5 the introduction in the 1970s and 1980s of specific schemes and regulations
6 which facilitated early retirement. The explicit goal of these schemes, which were
7 promoted by governments and companies, was to reduce the size of the labour force
8 (Shultz et al. 1998; García 2003). However, in countries such as Finland and the
9 UK, policies with the opposite aim have been promoted since the end of the 1990s,
10 with positive but limited results (Nickell 2003; López 2004; Díaz and Llorente 2005;
11 Garrido and Chuliá 2005).

12 The universal Spanish social security system dates from 1963 (Erdogan-Ciftci
13 et al. 2008), when a unitary model of social protection encompassing both private
14 and sector-based schemes was implemented. In addition to providing retirement
15 and unemployment benefits, this social protection system provides other forms
16 of support, including benefits for widows and for individuals with work-related
17 disabilities.² The pension system is financed through a pay-as-you-go model.
18 A range of schemes was created within this system to allow for early retirement.
19 For example, individuals may apply from the age of 50 onwards to receive various
20 kinds of social benefits which can later be linked to early retirement benefits (see
21 Table 1).

22 The second dimension corresponds to the structural or economic context, and
23 thus refers to the labour market conditions which can affect workforce supply and
24 demand. For example, lower employment rates may be caused by an economic
25 recession or by changes in the economic system. Several studies have found that
26 labour inactivity among elderly adults tends to be especially high in countries
27 in which early retirement programmes have been heavily promoted (Blöndal and
28 Scarpetta 1998; Gruber and Wise 1999). In many cases, these programmes had
29 been introduced as a response to an economic recession, but went on to become
30 permanent mechanisms of labour force regulation.

31 By the end of the 20th and the beginning of the 21st centuries, the Spanish
32 economy was growing steadily. This process of expansion was based on a large-
33 scale restructuring of industry and the economy during the 1980s, and on Spain's
34 integration into the European Union. Largely as a result of participation in early
35 retirement schemes, the Spanish labour force supply was reduced in almost all
36 of the productive sectors during this period, and especially in the industrial and
37 agricultural sectors. At that time, agriculture was the most important sector of the
38 Spanish economy (Díez 1999). Although male labour participation continued to
39 decline, with exits occurring as early as at age 50, employment rates among the

² Detailed information on the benefits and the pension system in Spain can be found in: Cano et al. (2000). 'El mercado de trabajo y su medición en España.' *Estadística Española* **Vol. 42** (Núm. 146), Zubiri (2003). *El futuro del sistema de pensiones en España*. Madrid, Instituto de Estudios Fiscales.

Table 1:
Features of pathways to early exit from employment in Spain

Age	Access to (early) exits schemes or social benefits	Years in employment required (min-max)
50	Social benefits (i.e. unemployment up to 2 years)	
52	Early retirement for workers in specific dangerous occupations	15
52–56	Early retirement for disabled workers	15
60	Early retirement schemes for particular workers	15–30
60	Compulsory early retirement	30
61 (2013)		33 (2013)
61	Partial retirement (voluntary)	30
63 (2013)		33 (2013)
65	Full retirement	10–25
		15–35 (1980)
65–67 (2013)		15–38,5 (2013)
65	Part work/Part retirement	
65–67 (2013)		
After 65–67 (2013)	Delayed retirement	

Source: *Ministerio de Empleo y Seguridad Social* (<http://www.empleo.gob.es>) and *Sindicato de Comisiones Obreras* (<http://www.ccoo.es>).

1 50–54 age group generally rose during the period of steady economic growth which
 2 started at the end of the 1990s. (Miret-Gamundi and Gómez-León 2009).

3 The third dimension refers to the individual context, which influences both entry
 4 into and duration of participation in the labour market. During the last century, key
 5 life events such as family formation, educational achievement, and entry into the
 6 labour market underwent important transformations, both in terms of the moment
 7 at which these events occur, as well as in the length of time spent in various states
 8 throughout the life cycle (Baizán et al. 2001; Esping-Andersen 2004; Olmo and
 9 Herce 2011). The delaying of these events, together with rising life expectancy,
 10 may lead us to assume that events such as the exit from employment should also be
 11 delayed. However, improvements in health and life expectancy have not translated
 12 into a longer working life. Instead, the proportion of the population who leave the
 13 labour market in their early fifties has been increasing over time. This represents a
 14 premature exit period of nearly 15 years prior to the defined SPA (age of 65). We
 15 focus on in our analysis this age range.

16 Together with macro-economic determinants, individual determinants heavily
 17 influence the exit from the labour force. Patterns of employment and of the transition
 18 to retirement differ significantly by gender, especially at the ages in which we
 19 are interested: i.e. 50–64. In Spain, men have much higher rates of employment

1 than women, as men are generally expected to assume the breadwinner role, while
2 women tend to be engaged in informal work, such as taking care of the household
3 and the family (Garrido 2004; Lindeboom and Kerkhofs 2009). Moreover, the low
4 activity rates among women appear to be related with their living arrangements,
5 as women who live with a partner are much less likely to be working (Even and
6 MacPherson 1994; Ruhm 1996; Ortiz 2004).

7 The likelihood of remaining in the labour force also differs by type of occupation.
8 In this paper, educational attainment will be used as a proxy for occupation,
9 as previous studies have shown that people with higher levels of education are
10 more likely than their less educated counterparts to remain in the labour market
11 (Sicherman and Galor 1990; Garrido and Chuliá 2005; Dittrich et al. 2011).

12 While in our analysis we include several determinants of the decision to retire,
13 such as age, education, family arrangements, and the employment status of the
14 partner; other factors which are not included here may also play an important role,
15 and should therefore be mentioned. For instance, a large number of studies have
16 shown that health status is a predictor of the transition to retirement (Pinzón-Fonseca
17 2011; García-Gómez et al. 2014). Moreover, the employment history and income of
18 an individual (with women having shorter durations and lower wages in general)
19 may also determine earlier or later transitions to retirement.

20 **3 Data and methods**

21 **3.1 Data and variables**

22 The data used in this study come from the Spanish Labour Force Survey (LFS),
23 conducted by the National Institute of Statistics in Spain. The LFS is a nationally
24 representative rotating panel, set as a continuous quarterly survey (one-sixth of the
25 sample is changed in each round). As a result, each household could be followed in
26 up to six waves, for a total of a year and a half. The survey collects information (the
27 reference is the week previous to the day of interview) regarding all of the members
28 of the household,³ including information on the respondents' sex, marital status,
29 educational attainment, and labour activity.

30 The study used all of the waves of the LFS data from 1999 to 2012, or 161 waves
31 for the entire period. This allowed us to analyse short-term changes, and to conduct
32 a more general analysis of the labour market (Greene 2004). Our analysis starts
33 in 1999, since this is the year in which the relationship of the individuals within the
34 household can pinpointed; in particular, we are interested in the presence of children,
35 parents, and partners. Our study population is comprised of all of the respondents
36 aged 50 to 64 who could have been observed up to six times during the period

³ Secondary or stage households are excluded, as are collective households, hospitals, and military lodgings.

Table 2:
Summary statistics of the sample

Variables	Frequency of total observations / Mean (standard deviation)
<i>Dependent variable</i>	
Employment status	
Working	49.5%
Not working	50.5%
<i>Main independent variables</i>	
Household arrangements	
Living alone	6.4%
Living with partner only	21.4%
Living with partner and dependent children	9.6%
Living with partner and parents	2.7%
Living with dependents (children/parents)	5.2%
Living with partner/older children/others	54.7%
Partner's employment status ($n = 442,132$)	
Partner is working	54.8%
Partner not working	45.2%
<i>Covariates</i>	
Sex Males	40.3%
Females	59.7%
Age	56.6 (4.46)
50–54	36.6%
55–59	33.3%
60–64	30.0%
Education level	
Illiterate	2.4%
No schooling	11.6%
Primary	38.6%
Vocational training	19.9%
Secondary	15.5%
Bachelor's or higher	12.1%
Observations (individuals-waves)	1,750,410
Individuals	533,145

Source: Spanish Labour Force Survey.

1 of analysis. We thus have 1,750,410 observations of a final subsample of 533,145
2 individuals, 59.7% of whom are females. Descriptive statistics of the variables used
3 in the analysis are presented in Table 2.

1 Dependent variable

2 A variety of approaches can be applied to analysing early retirement behaviours.
3 Defining the group of people who take early retirement is challenging. If we take
4 into account all of the individuals who are not working, the group could include all
5 of the following: those who have never worked, those who have stopped working
6 but do not meet the requirements to receive an early or a full retirement pension,
7 those who are receiving a pension, and those who combine part-time employment
8 with pension benefits. In our study, we follow previous scholars who differentiated
9 between individuals who are actively engaged in employment and those who are
10 not (Antolín and Scarpetta 1998; Antón et al. 2007). Therefore, we will focus
11 on two main states: 1) working and 2) not working. This approach allows us to
12 include in the non-working group all individuals who were not actively engaged in
13 employment, regardless of whether they were receiving a retirement or disability
14 pension or another form of social benefits, or had no income at all.

15 Independent variables

16 Our study focuses on the differential effects of family arrangements for men and
17 women. Based on a literature review, we also include other factors as control
18 variables. Table 2 shows the main characteristics of the variables used in the analysis.
19 Thus, the *age* of individuals is split into three different groups to control for the
20 increasing likelihood that they will retire as they approach the age of 65.

21 Economic factors are controlled for with the variable *time*. During the period
22 of study, a phase of substantial economic growth was observed (accompanied by
23 an increase in labour force demand) until 2008, when the economic crisis hit the
24 Spanish economy. A reversal of this positive trend then occurred (at least in terms of
25 demand for labour among males, an issue we will analyse in the following section)
26 and employment rates at all ages were negatively affected. To account for these
27 changes, time will be split into dummy variables for each year in the study (1999–
28 2012).

29 According to the human capital theory developed by (Becker 1964), individuals
30 who complete higher levels of education are expected to have higher wages.
31 Moreover, other studies (Sicherman and Galor 1990) have pointed out that
32 the acquisition of education, knowledge, and experience is associated with
33 improvements in working conditions and status over time. Thus, education increases
34 an individual's chances of entering and remaining in employment, and of getting
35 a better job (Garrido and Chuliá 2005; Dittrich et al. 2011). However, in a study
36 which compared Germany with the United Kingdom (Oswald 1999), a significant
37 association between higher education levels and the postponement of the exit from
38 employment was found among German men only.

39 Because the Spanish educational system has undergone five major reforms in
40 recent decades, the education variable recorded in the LFS has changed over time.
41 Therefore, the standardisation of the variable (see Appendix A.1) takes into account

1 the changes in the classifications used. The categories for the *education* variable are
2 as follows:

- 3 1. Illiterate or non-schooled
- 4 2. Primary
- 5 3. Secondary
- 6 4. Vocational training
- 7 5. Bachelor's or higher

8 In terms of household characteristics, from 1999 onwards the LFS dataset
9 includes the relationships of all of the household members surveyed. This
10 information allows us to derive a variable which reflects the respondents' family
11 arrangements, including their relationships to their parents, their partner, and their
12 children. We also take into account the age of the household members, assuming
13 that the household members who were under age of 16 were dependents, and that
14 the presence of dependents would be associated with a decreased probability of
15 being in employment among women, and an increased probability among men. In
16 addition, we assume that adults who were living with a parent were more likely to
17 change jobs or exit employment, as the elderly parent was likely to be a dependent
18 (Schneider et al. 2013).

19 We also examined gender differences in the influence of the employment pattern
20 of the partner/spouse on the probability of being out of the labour market. Since
21 the retirement decision is often made jointly by the couple (Ruhm 1996; Mark et al.
22 1999; Ortiz 2004), using the *partner's employment status* variable, we expect to
23 observe among those respondents whose partner was in employment a reduced risk
24 of being out of work.

25 Regarding household arrangements, the variable of *living arrangement* has being
26 created with the following mutually exclusive categories:

- 27 • Living alone
- 28 • Living with a partner only
- 29 • Living with a partner and dependent children
- 30 • Living with a partner and parents
- 31 • Living with potential dependents (young children or parents)
- 32 • Living with a partner/adult children/others

33 3.2 Methods (data analysis)

34 As the study focuses on the early retirement patterns of the adult population in
35 Spain, we start the first section with a general descriptive analysis which compares
36 the age of exit from employment for different European countries, and examines the
37 remaining life expectancy at age 60 in Spain according to the years in employment
38 from this age onwards.

1 The employment patterns are then built using the LFS in order to illustrate the
2 trends associated with different activity statuses (employed/unemployed/inactive)
3 for males and females aged 50 to 64 between 1976 and 2012.

4 To ensure that our estimates are unbiased—i.e. are not affected by unobserved
5 individual characteristics—the relationship between family arrangements and the
6 permanent exit from employment was estimated using a random effects (RE) model.
7 RE models are useful in this context because they allow us to take into account
8 the fact that each individual can have more than one observation over time (Diggle
9 2002); and up to six observations in our case. The model assumes that the variation
10 across individuals is random and is uncorrelated with the other predictors included
11 in the model. An advantage of the RE model is that it allows us to include in our
12 analysis time-invariant variables, such as education and sex, and to specify those
13 characteristics which may or may not influence the predictor covariates. To check
14 for the precision of the results and the inclusion of the time-variant covariates, the
15 results from the RE model were compared with the ordinary least square (OLS)
16 models.

17 As our dependent variable is dichotomous, logistic regression with random effects
18 was used to estimate the probability of being out of the labour market, including
19 other variables to control for time, age, economic activity of the partner, and
20 education.

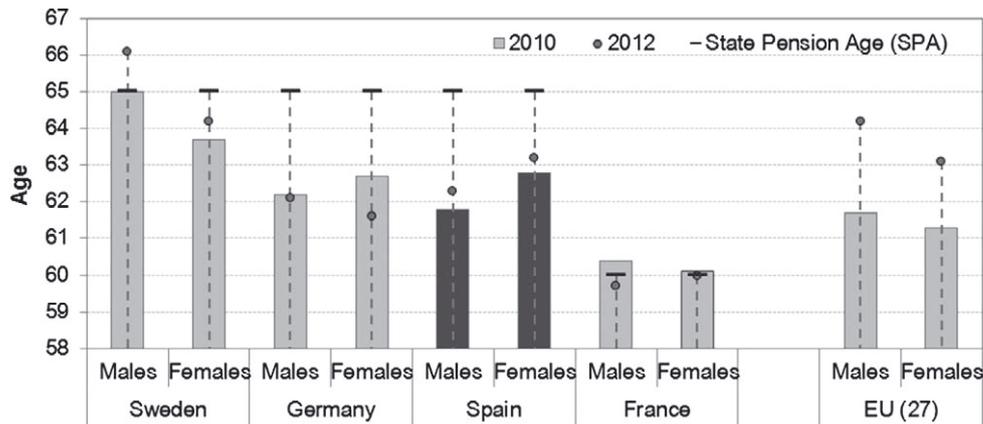
21 While our control variables cover a range of important determinants, the lack of
22 other factors could bias our results, and should thus be mentioned. For instance,
23 our dataset does not include information about health status, which is an important
24 predictor of the transition to retirement. Moreover, the employment history and
25 income of the individuals (with females having shorter employment careers and
26 lower wages in general) may also determine earlier or later transitions to retirement.

27 **4 Demographic potential of the workforce**

28 The current political and social debates regarding labour force participation often
29 focus on ways to encourage people to work beyond the SPA (age 65). However, a
30 large proportion of individuals do not remain active in the labour market up to this
31 age, as the mean age of exit from the labour market indicates.

32 Figure 1 shows that several European countries have a mean age of exit
33 below the SPA, albeit with important differences by gender. Moreover, in some
34 countries the situation does not appear to have improved between 2010 and 2012.
35 Across the European Union (UE-27), the mean age of exit in 2012 was 63 for
36 females and 64 for males, up from 61 for both genders in 2010. Three main patterns
37 can be distinguished from the figure. In the first group of countries, which includes
38 Sweden, Denmark, and Switzerland, the mean age of exit is relatively high, and
39 even surpasses the SPA for males. In the second group of countries, which includes
40 Germany and Spain, the mean age of exit is higher for females than for males, with
41 Spain showing modest improvements between the 2010 and 2012. In the third group

Figure 1:
Average effective age of labour market exit and state pension age (SPA) by sex.
European Union and selected countries (2010 and 2012)



Source: Eurostat, data for 2010 consulted on 24/06/2013; 2012 consulted on 27/11/2014 (OECD 2013).

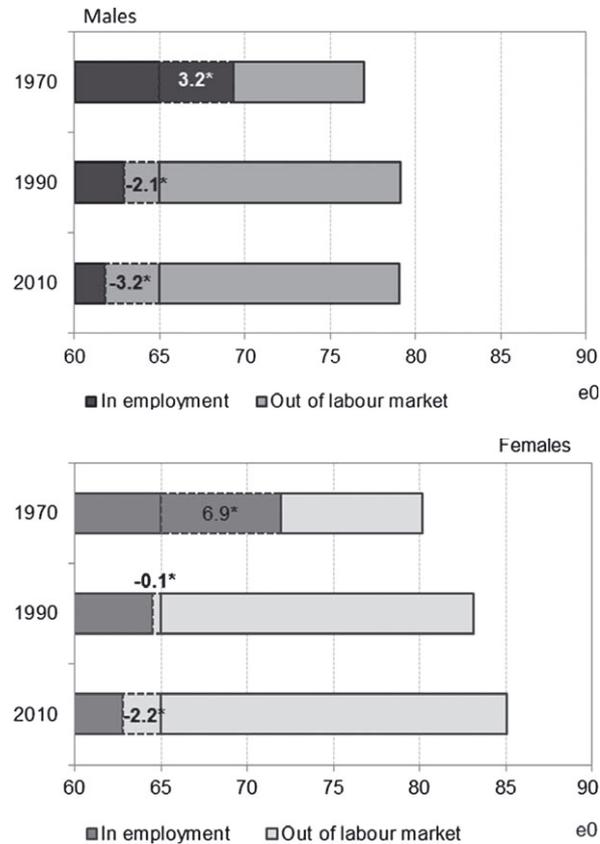
1 of countries, which includes France and Italy (with differences by sex), the SPA
2 levels are very low compared with the other countries. These countries are, however,
3 in the process of raising the age beyond 65, in line with the rest of the European
4 Union.

5 This pattern of increasingly early exit from employment has been occurring since
6 the 1970s and 1980s, when most of the OECD countries used early retirement
7 programmes to respond to economic crises and restructuring. Since the 1980s in
8 Spain, the total number of years spent in employment has been falling due to early
9 retirement. Meanwhile, over the same period, life expectancy has been rising.

10 These two opposing phenomena are depicted in Figure 2, which shows the life
11 expectancy at birth (light grey bars) and the years spent in employment (dark grey
12 bars) according to the age of exit from the labour market. As we can see from the
13 graph, in 2010 life expectancy at birth was 79.1 for men and 85.1 years for women,
14 2.1 and 4.9 years longer than in 1970. However, during the same period, the number
15 of years spent in employment decreased, as people were leaving the labour market
16 at progressively young ages.

17 It is noteworthy that in 1970 the average age of exit from employment was
18 considerably higher than 65, especially among working women, who, on average,
19 remained in the labour market beyond age 70. By 1990, a significant reduction in
20 the number of years the average person was working had already taken place, with
21 a large share of the labour force retiring before age 65. This trend was especially
22 pronounced among males. By 2010, the number of working years had fallen ever
23 further, to 3.2 years below 65 for men, and to 2.2 years below 65 for women.

Figure 2:
Life expectancy at birth by employment status and sex. Spain (1970, 1990, and 2010)



Note: Years in employment are calculated using the mean age of labour market exit.

(*) The value indicates the difference between the mean age of labour market exit and the SPA (at age 65).

Source: Institute of National Statistics (www.ine.es) for the life expectancy; Eurostat (<http://epp.eurostat.ec.europa.eu>) consulted on 24/06/2013 for the mean age of exit from employment.

1 Figure 2 also shows that the effective mean age of retirement—and, hence, the
 2 average number of years an individual spends in the labour market—has decreased
 3 over the last 40 years. This has occurred despite political efforts to increase the mean
 4 age of retirement to 67; a policy which has already been implemented in countries
 5 such as Spain and Germany.

1 5 Labour market patterns of the adult population in Spain

2 Having documented the decrease in the mean age of labour market exit, we now
3 examine the labour market status of individuals who are under age 65. Figure 3
4 shows the proportions of Spanish males aged 50 to 64 who were employed,
5 unemployed, or inactive for the period 1976–2012. The highest level of employment
6 was observed at the beginning of the period, or in the mid-1970s, when around 80%
7 were working. This level had dropped markedly by the end of the 1970s and the
8 beginning of the 1980s, stabilising in 1985 at 65%; but then falling even lower
9 during the 1990–1994 economic crisis, to 58%. During the 1995–2008 period of
10 strong economic growth, employment levels increased, but only to 69%; far lower
11 than the levels reached in the 1970s. The economic crisis of 2008 disrupted this
12 trend, with employment falling to 1996 levels, or to about 60%.

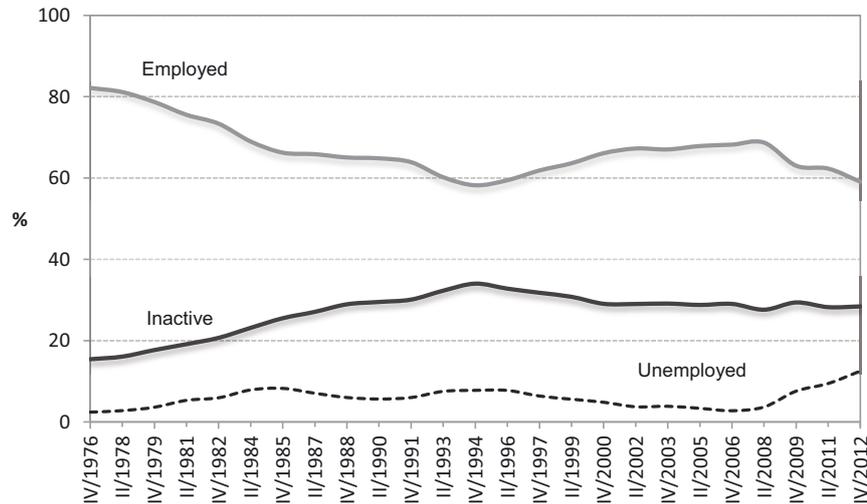
13 Given the decline in employment levels in the first half of the period, the
14 unemployment rate should have risen more steeply than it did: among 50–64-year-
15 olds, the unemployment rate increased only from 2% in 1976 to 8% in 1996 and
16 to 12% by 2012. It therefore appears that a very large number of people in this age
17 group who were not employed had become inactive, thus permanently exited the
18 labour market shortly thereafter.

19 The proportion of 50–64-year-old men who were inactive was around 15% in
20 1976. This share had doubled by 1994, and then remained at around 25% until 2012.
21 Even during times of economic growth, the share of 50–64-year-old men who were
22 inactive remained steady. This trend is likely attributable to the intensive use of the
23 early retirement programmes which were created during the Spanish restructuring
24 process of the 1980s, and which continued to be available in the subsequent decades.

25 Figure 4 shows the labour market trends among 50–64-year-old women from
26 1976–2012. When we compare these trends with those shown in Figure 3, we can
27 see that much higher proportions of women were out of the labour market for the
28 entire period of analysis. From 1976 to 1994, between 75% and 77% of women
29 aged 50–64 were inactive. These percentages decreased steadily to 47% by 2012.
30 This trend illustrates the changes in Spanish society since the 1980s, with women
31 entering most spheres of socio-economic and political life. However, for the adult
32 population nearing retirement, this shift did not take place until the mid-1990s.

33 Unlike male labour market participation, female labour market participation does
34 not seem to have been affected by the economic crisis in the 1970s or the 1990s.
35 However, the economic crisis which started in 2008 appears to have had a modest
36 impact on female labour participation, albeit with a certain delay. For instance,
37 the percentage of women in employment stagnated in 2009–2010, and had fallen
38 slightly by 2012. This decline has affected the unemployment rates of women. In
39 the first part of the period of analysis, unemployment rates for women were very
40 low, which indicates that relatively few women of these ages were actively looking
41 for a job. This situation started to change in the 1990s, but the female unemployment
42 rate remained low, at around 5%.

Figure 3:
Male population aged 50–64, by labour market status. Spain (1976–2012)



Note: Roman numbers correspond to the trimester in any given year.

Source: Spanish Labour Force Survey (LFS).

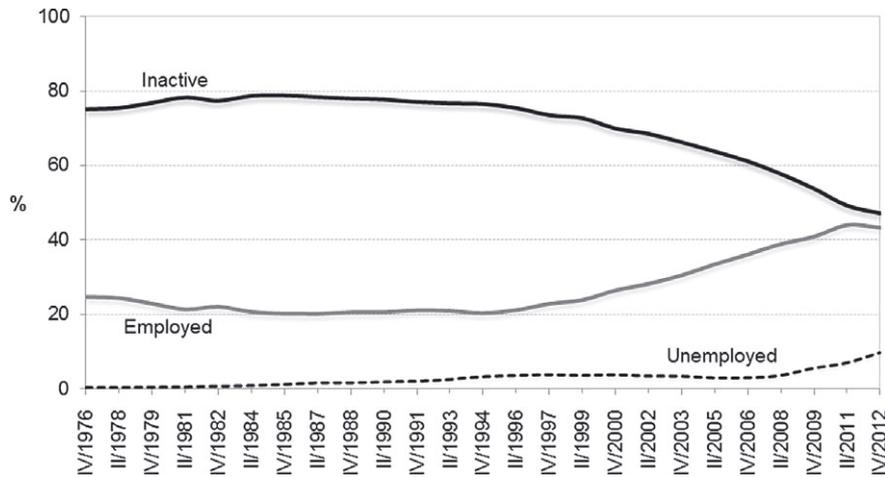
1 Especially remarkable is the significant increase in the unemployment rate for
 2 women aged 50–64 since the start of the crisis in 2008, to 10%. This trend is
 3 particularly interesting, as until recently this was one of the population groups who
 4 seem to have been most protected from the crisis, as older women are especially
 5 likely to be employed in the public sector with a permanent contract. This higher
 6 rate, may, however also be a response to the higher unemployment and inactivity
 7 rates among men in this on-going crisis.

8 During the entire period of study (1976–2012), there were clear sex differences
 9 in labour market participation: i.e. the male trends followed the ups and downs of
 10 the economic cycles, whereas the female trends did not. In the next section we will
 11 analyse sex-specific employment trends for different periods of time and different
 12 levels of educational attainment.

13 6 Demographic determinants of early retirements

14 The previous sections showed that male and female patterns of employment clearly
 15 differed. While the participation levels of women were much lower than those
 16 of men throughout the period, the increase in labour market participation among
 17 women does not appear to have been affected by the economic downturn which
 18 started in 2008. Moreover, this pattern of a low level of employment among women

Figure 4:
Female population aged 50–64, by labour market status. Spain (1976–2012)



Note: Roman numbers correspond to the trimester in any given year.
Source: Spanish Labour Force Survey (LFS).

1 at older ages could be also related to the fact that many women take on the role
 2 of family caregiver, especially if there is another source of income in the household
 3 (which could be the partner's income or the pension benefits of the parents).

4 In the following analysis, we will address this issue by selecting two models (one
 5 for each sex) to test the effect of having potentially dependent family members at
 6 home; and the effect of time to control for changes in the patterns before and after
 7 the 2008 crisis (using the period between 1999–2008).

8 Before discussing in detail the results of the analysis for males and females, we
 9 first present the results of two models which we ran for the entire sample (males
 10 and females together) to check whether it was pertinent to use the random effects
 11 model instead of the simple logistic regression (see Appendix A.2). The results show
 12 the same effect (negative or positive) for all of the variables in the study; however,
 13 the levels are significantly different, with higher coefficients for the random effects
 14 model. Moreover, although the variance is in large part due to the differences across
 15 the waves (96.8%), the residuals within individuals are highly significant (4.6^{***}); it
 16 is therefore important to take this variance into account.

17 Having analysed in the previous section employment status in the cross-sectional
 18 data for the entire period, we will now focus on 1999–2008, a period for which
 19 we have data on the respondents' family arrangements. Using discrete panel data,
 20 Table 3 depicts for this period the transition probabilities of changes in employment
 21 states over two consecutive waves (up to six waves for each individual), for males
 22 and females separately. As we noted in the literature review, entry into employment

Table 3:
Transitions in employment status between waves by sex, period 1999–2012. Spain
(50–64 years old)

		State in t_{x+1}					State in t_{x+1}		
		Not					Not		
	Males	Working	working	Total		Females	Working	working	Total
State in t_x	Working	402,830	17,146	419,976	State in t_x	Working	219,168	14,948	234,116
		95.9%	4.1%	100.0%			93.6%	6.4%	100.0%
	Not working	10,750	199,614	210,364		Not working	12,840	339,969	352,809
		5.1%	94.9%	100.0%			3.6%	96.4%	100.0%
	Total	413,580	216,760	630,340		Total	232,008	354,917	586,925
		65.6%	34.4%	100.0%			39.5%	60.5%	100.0%

Note: The transition probabilities use panel data for nested observations within individuals.

Source: Spanish Labour Force Survey (LFS).

1 at adult ages is relatively rare. As expected, we observed relatively few transitions
 2 into or out of the labour market in our sample of individuals aged 50 to 64, although
 3 the patterns differed by sex.

4 In Table 3, we have 630,340 observations of males and 586,925 observations
 5 of females which could have been recorded across the six waves. In the last
 6 observation, 65.6% of the men were working. Meanwhile, more than half (60.5%)
 7 of the women were not working—a higher share than the one observed in the cross-
 8 sectional analysis, specially after 2008.

9 This stresses the importance of taking into account the differences in the
 10 behavioural patterns of men and women. Relatively few women were still working
 11 at these ages, but among those who were working, their probability of remaining in
 12 employment was similar to that of men. Thus, employment status was highly stable
 13 among both sexes, with more than 90% staying either in or out of employment. By
 14 contrast, the rate of transition into employment was lower with 5% among men and
 15 nearly 4% among women.

16 The results from the logistic model with random effects are presented in Table 4.
 17 The models show a high degree of intraclass correlation between the residuals within
 18 individuals and between the overall error terms for females and males (96% and
 19 97%, respectively). Meanwhile, the standard deviation within groups should also be
 20 taken into account (8.6 and 9.9, respectively).

21 In terms of family arrangements, we found similarities with previous studies:
 22 i.e. living with a partner increases the chances of being out of the labour market,
 23 with a stronger effect for males. However, the contrary effect is found if the
 24 occupation status of the partner is taken into account. If the partner is in employment,
 25 the probability of an employment exit is reduced; this supports the observation

Table 4:
Family arrangements' impact on the likelihood of exit from employment. Spanish individuals aged 50–64, period 1999–2012

Logistic regression with random effects	Females			Males		
	Coeff.	P	Std. Err.	Coeff.	P	Std. Err.
<i>Household arrangements (ref. Living alone)</i>						
with a partner only	0.123	***	0.036	1.247	***	0.045
with a partner and dependent children	-0.098	*	0.052	0.103	**	0.047
with a partner and parents with dependents (children /parents)	-0.327	***	0.068	-0.235	**	0.114
	-0.539	***	0.186	-0.060		0.232
<i>Partner's employment (ref. not working)</i>						
Partner is working	-1.388	***	0.031	-1.567	***	0.034
Control variables						
<i>Age (ref. 50–54)</i>						
55–59	1.213	***	0.035	1.922	***	0.040
60–64	2.836	***	0.050	9.950	***	0.081
<i>Education (ref. Illiterate)</i>						
No schooling	-0.740	***	0.119	-2.082	***	0.169
Primary	-1.171	***	0.118	-3.333	***	0.171
Vocational training	-2.117	***	0.120	-3.901	***	0.174
Secondary	-4.628	***	0.125	-4.663	***	0.178
Bachelor's or higher	-14.039	***	0.136	-6.892	***	0.192
<i>Year (ref. 1999)</i>						
2000	0.115	**	0.056	0.147	***	0.052
2001	-0.116	*	0.065	0.165	***	0.063
2002	-0.213	***	0.068	0.182	***	0.069
2003	-0.477	***	0.069	0.102		0.071
2004	-1.005	***	0.068	0.091		0.072
2005	-1.606	***	0.069	0.218	***	0.072
2006	-2.167	***	0.069	0.065		0.071
2007	-2.492	***	0.069	-0.029		0.071
2008	-2.678	***	0.070	0.285	***	0.071
2009	-2.879	***	0.070	1.099	***	0.070
2010	-3.057	***	0.071	1.475	***	0.070
2011	-3.292	***	0.071	1.828	***	0.071
2012	-3.234	***	0.074	2.644	***	0.073
Constant	10.462	***	0.131	-4.658	***	0.179
sigma_u	8.558		0.029	9.945		0.043
Rho	0.957		0.000	0.968		0.000
No. of observations (individual-wave)	703,948			728,499		
No. of groups (individuals)	259,766			182,366		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note: Separate models for males and females, controlling for random effects within individuals.

Source: Spanish Labour Force Survey (LFS).

1 mentioned in the literature review that retirement timing is often decided jointly
2 within a couple.

3 In general, we found that having a potentially dependent person living in the
4 household (a child under age 16 or an elderly parent) is negatively associated
5 with the probability of being retired. This finding is contrary to our expectations,
6 especially for females. In the case of women, the family composition in the
7 household does not appear to have negatively conditioned their employment
8 participation. One reason for this result could be that the presence in the household
9 of a parent did not impose a burden; on the contrary, an adult who was living with a
10 parent was more likely to be employed than an adult who was living alone or only
11 with a partner. To further analyse this phenomena, other variables should be taken
12 into account, such as the health of the parent, or the individual's reasons for being
13 out of the labour market.

14 We were, however, surprised to find that men had a greater likelihood of exiting
15 the labour market if they were living with a partner and children (under age 16);
16 although the likelihood of an exit was much lower than it was if they were living
17 with a partner only, which could be explained by the joint decision-making of the
18 couple. Moreover, the risk of retirement was lower among men who were living with
19 a partner and dependents (living with children and parents was negatively related,
20 but this result was not statistically significant). In this case, it appears that the need
21 for an income source reduced the likelihood that men would leave employment,
22 especially when other household members could take care of the other needs in the
23 household.

24 The effect of age was as expected: as the individual approached the age of 65, the
25 probability of being out of employment increased, with stronger effects for males.
26 The estimates for education were similar: i.e. the higher the level of education an
27 individual had, the lower the probability was that he or she would exit the labour
28 market; although the coefficients differed by sex.

29 The protective effect of education for employment was higher among males, and
30 the effect was higher until the secondary level, at which point men and women had
31 similar coefficients. For the upper level of bachelor's degree or higher, females had a
32 much higher coefficient; thus, being highly educated had an especially strong effect
33 on the probability of exiting employment among women.

34 The estimates for the dummy variable of time also showed important differences
35 between males and females: for the entire period of analysis (1999–2012), women
36 had increasingly negative coefficients, indicating that their retirement risk declined
37 over time (even after 2008); whereas the variable had the opposite effect among
38 men. Men had positive signs for all of the years (except for 2007, although this was
39 not statistically significant), which implies that they had a higher risk of retirement
40 than the reference group of 1999. The coefficients indicate that the trends were
41 stable in the early years, and that there were no differences between 2003 and 2007.
42 However, in 2008 the coefficients increased systematically, and the risk of being out
43 of employment rose sharply.

1 **7 Discussion**

2 (Early) retirement patterns have been studied extensively from economic and
3 demographic perspectives, and a wide variety of methods have been applied in
4 these investigations. The purpose of this paper was to investigate the effect of family
5 composition on early retirement for the population near the state pension age of 65.
6 The Spanish Labour Force Survey (LFS) is a national representative survey which
7 is most often used to study labour market changes. But because these survey data
8 are complex and have only recently become available, they have so far been used
9 mainly in a cross-sectional format, rather than as panel data.

10 Using the LFS in our study as a panel dataset, we were able to apply a
11 random effects framework to investigate the employment status of the adult
12 Spanish population, thereby taking unobserved heterogeneity and variations within
13 individuals into account.

14 The first objective of this paper was to analyse the labour market participation
15 of adults between the ages of 50 and 64. Our findings indicate that men had
16 higher levels of employment than women during the entire period. The results
17 further show that male labour participation followed macro-economic variations,
18 decreasing during times of economic depression and increasing in periods of
19 economic expansion. It is worrying that even during the phases of economic growth
20 in our study period male employment rates did not approach the levels of the 1970s,
21 and that in the first four years of the current crisis the rates had fallen to the lowest
22 levels since the 1970s.

23 The reverse trend was found for women. Female employment rates grew steadily,
24 and do not appear to have been affected by economic cycles or labour market
25 policies which promoted a reduction in the workforce. Until the late 1980s, less
26 than one-third of women over the age of 50 were participating in the labour market.
27 But the figures since the 1990s suggest that women are becoming increasingly active
28 in the economy. Particularly interesting are the patterns of employment after 2008,
29 which show that labour market participation rates are declining among men but
30 increasing among women.

31 Our second research objective was to analyse the socio-demographic
32 determinants of the transition to permanent labour inactivity of the adult population
33 in Spain. The results show that the exit from employment is strongly influenced by
34 family arrangements, by education, and—in the case of males—by the economic
35 crisis of 2008.

36 In terms of family arrangements, living with a partner has been shown to be an
37 important determinant of employment during the early 21st century for both sexes:
38 i.e. in line with the retirement joint decision model, the analysis showed that the
39 chances of an individual being in employment were affected by whether his or her
40 partner was working. This finding is similar to those of several previous studies
41 (Mark et al. 1999; Ortiz 2004; Garrido and Chuliá 2005). Moreover, using separate
42 models for each sex, we found that females were less likely to leave employment
43 for any type of family arrangement except living with a partner only, while males

1 who were living with a partner only, or with a partner and dependent children,
2 had an increased risk of entering retirement. However, the presence of an elderly
3 parent (regardless of the presence of others) increased the likelihood of staying in
4 employment. Thus, living with a parent appears to encourage adults to continue
5 working.

6 Our analyses were adjusted for several covariates to control for the effects of other
7 important predictors. Level of education was found to be a significant determinant
8 of the likelihood of remaining in employment among older adults. Our study
9 population included large shares of individuals who had only a primary school
10 education or vocational training. The results clearly showed that highly educated
11 males and females were more likely to remain in employment after age 50. After
12 controlling for the period of analysis and family composition, this effect was found
13 to be especially strong among women, but comparatively weak among men.

14 Limitations

15 Several limitations of our research should be mentioned here. The analyses
16 conducted for this paper were based on employment status, and considered all
17 of the individuals who reported in the survey that they were not working to be
18 early retirees. Moreover, unmeasured biases could have affected our results. For
19 example, because health status was not recorded in the LFS, we could not control
20 for the health status of the respondents or of their family members. Both health
21 indicators are important predictors of stopping work, as individuals who are disabled
22 or who have informal care responsibilities are less likely to remain in employment
23 (Lindeboom and Kerkhofs 2009; Schneider et al. 2013). We also did not control
24 for other factors, such as differences in retirement patterns by occupational sectors,
25 the trade-off between income earned prior to retirement and pension benefits (Díaz
26 and Llorente 2005; García-Gómez et al. 2014), and cohort pattern changes (Garrido
27 2004).

28 Longitudinal datasets are particularly useful for studying transitions and life
29 course events, but there is a scarcity of such datasets in Spain. We therefore used
30 the panel data of the LFS, which have a number of advantages, as was previously
31 discussed. But since we did not have the full employment histories of the individuals,
32 the analysis here refers to the changes which occurred within a year and a half.
33 This short period may not be sufficient to analyse the effects of the changes which
34 occurred over the adult ages before retirement.

35 8 Conclusion

36 At the start of the 21st century, the Spanish labour market is still characterised by
37 significant gender divisions. This situation should change for younger generations
38 as they approach the SPA (which has already shifted from 65 to 67 in Spain), as

1 today's young people will have spent their childhood and adult life in a different
2 social context. In particular, we can expect more women to become actively engaged
3 in the social, political, and economic spheres.

4 In general, we have confirmed the importance of family composition for
5 individuals as they reach the age of retirement; finding that having a family tends to
6 encourage people to remain in employment rather than to retire early, except among
7 people who live with a partner only. The effect on employment of living with a
8 parent is stronger among females, while among males the presence of a partner,
9 rather than the presence of dependents, appears to have a greater influence.

10 The improvements in educational attainment during the second half of the 20th
11 century barely affected the population aged 50 and over. However, we expect that
12 subsequent generations in Spain will reach retirement ages with higher levels of
13 education, and that they will therefore be more likely to delay retirement.

14 Finally, the analysis showed that early exits from employment among adults have
15 not been declining; on the contrary, they have been increasing, at least among
16 men. During the economic expansion, employment rates increased and the risk of
17 early retirement decreased among women; whereas among men employment rates
18 increased moderately, but the risk of early retirement also rose. After the onset of the
19 economic crisis in 2008, these gender-specific trends in labour market attachment
20 among this age group continued: the risks of early retirement increased among men
21 and decreased among women.

22 Policy implications can be drawn from these results. For instance, the higher rates
23 of early retirement among males could be forcing the partners of those who retire
24 to also stop working. Early retirement schemes seem to play an important role in
25 driving people out of the labour market. We have confirmed that in recent decades
26 a large proportion of the Spanish population have been inactive, even during the
27 expansion of the Spanish economy in the first decade of the 21st century. The finding
28 that highly educated individuals are less likely to retire early reinforces the need
29 for re-qualification and training programmes for the adult population, as such
30 programmes will prepare them to face the requirements of a constantly changing
31 labour market.

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³ Appendix

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Table A.1:
Classification of education levels used in the Labour Force Survey, Spain

Educational level	1992	2000	2000
	I/1992–IV/1999	I/2000–IV/2004	I/2005–
Illiterate or non-schooled	0, 1, 2	0–3	80, 11, 12
Primary	3	04, 05	21–23
Vocational training	5, 6	06, 07, 9–13	31, 33, 34, 36, 41, 51, 53
Secondary	4	08	32
Bachelor's or higher	7, 8, 9	15–19, 20–31	(50), 52, 54–56, (59), 61

Note: Roman numbers correspond to the trimester in the year.

Source: Methodological documentation from the Spanish Labour Force Survey (LFS), www.ine.es.

Table A.2:
Coefficients from the random effect and logistic regression models of exit from employment. Spanish individuals aged 50–64, period 1999–2012

Variable		Random effect	Logistic regression
Age group (Ref. 50–54)	55–59	–4.6517269***	–1.3809676***
	60–64	–3.0306076***	–.9254262***
Education (Ref. illiterate)	No schooling	–1.2745979***	–.60700117***
	Primary	–2.0990315***	–.95527769***
	Vocational training	–2.8924968***	–1.1685589***
	Secondary	–4.7066073***	–1.5244851***
	Bachelor’s or higher	–8.1719743***	–2.3694812***
Year (Ref. 1999)	2000	.46496853***	.04116479***
	2001	.32837089***	–0.01858511
	2002	.24007136***	–0.01752625
	2003	–0.00104075	–.0342946***
	2004	–.34822911***	–.05727066***
	2005	–.66487853***	–.07947445***
	2006	–1.1141239***	–.1288721***
	2007	–1.3942593***	–.17644001***
	2008	–1.3846567***	–.18793123***
	2009	–1.1040909***	–.11846196***
	2010	–1.0346155***	–.09003472***
	2011	–.98668031***	–.10141166***
2012	–.52102874***	–.03234491**	
Household arrangements (Ref. Living alone)	Living with a partner only	.53937921***	.1644103***
	Living with a partner and dependent children	–.1550163***	.03997679***
	Living with a partner and parents	–.17293362**	–.03145328**
	Living with dependents (children/parents)	–.35097697*	–.11841031***
Partner’s employment (Ref. Not working)	Partner is working	–1.2159281***	–.32222306***
Sex (Ref. Males)	Females	13.955721***	1.7147895***
	_cons	.83101968***	1.3402433***
Insig2u _cons		4.6172855***	
N		1,432,447	1,432,447
Rho		0.9685	

Note: Legend: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.000$.
Source: Spanish Labour Force Survey (LFS).