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ABSTRACT

Similar to other OECD countries, labor force participation rates of Spanish older workers were falling until the mid-1990s when there was a reversal in the trend. Labor force participation rates of Spanish men have been increasing since then, although at a slower pace than in other OECD countries. We explore to what extent several factors can be behind these trends. First, we conclude that the (old-age) social security system (except perhaps for the disability component) has played a marginal (at most) role on this reversal given the lack of major changes in social security benefits until the last set of reforms in 2011 and 2013. Second, we also rule out that changes in the health status of the population are responsible for the reversal of this trend. Finally, we find that aggregate economic conditions, and differences across cohorts in both the skill composition and the labor force attachment of wives are potential drivers of these observed changes.

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1. Introduction

The large increase in life expectancy and old age dependency ratios urged a change in the trends in early retirement and lower participation rates observed during the eighties and early nineties. Fortunately, employment rates in many OECD countries reversed this trend and started to increase (following a U-shaped pattern) since the mid-1990s. In a majority of countries this increase has been largest for men aged sixty to sixty-four, but men aged fifty-five to fifty-nine and sixty-five to sixty-nine in most (though not all) countries have also experienced an increase in their participation rates. Labor force participation and employment rates of women have also been increasing since the mid-nineties, although the previous trend was not negative, and in some countries even positive. In Spain, low participating and educated mothers have been replaced in the labor market by more educated high participating daughters (Boldrin et al, 2001). In fact, labor market participation of women has practically doubled in the last 35 years in Spain, from 28% in 1977 to 53% in 2014, converging but still not reaching labor force participation rates of men.

Many factors may have contributed to the recent increases in labor force participation and employment, including changes in the incentives from social security and other early-retirement routes like disability insurance or unemployment insurance, improving health and longevity, increasing education, a shift towards less physically demanding jobs, and rising female labor force participation (combined with the desire for joint retirement among couples).

There is a line of work, see Garcia-Perez et al (2013) and the references therein, that emphasizes the importance of social security and employment regulations in determining labor force behavior of older workers. Using administrative data they find that economic incentives have a strong impact on labor market decisions in Spain. Unemployment regulations are shown to be particularly influential for retirement behavior, along with the more traditional determinants linked to the pension system. In particular the early retirement route (see also Gruber and Wise (1999) or Hairault et al (2010)) of unemployment insurance is particularly important in Spain. However, there are no substantial modifications of the system around 1995 to justify a change in the previous labor force trends of older workers.

One of the key factors behind the increase in employment trends could be the strong growth of the Spanish economy observed after the 1993-1995 recession. Felgueroso and Jiménez-Martín (2009) show that the Spanish economy experienced a very strong job creation period between the mid-1990s until 2007, allowing the overall employment rate to increase by about 20

percentage points. This affected all population groups regardless of education and gender. The implications of such a period of prosperity were very important. Spain moved from the last position in the employment rate of the EU15 to the average level, overtaking Italy (7 percentage points), catching up with France (1 percentage point) and cutting the distance to countries like UK, Germany or Finland (-4-6 percentage points).

Finally, another potential factor is human capital accumulation (Felgueroso and Jiménez-Martín, 2009). Between 1996 and 2008, the reduction of the share of low-educated individuals in Spain at ages forty to fifty-nine has been about 20 percentage points (thereby reducing the overall differences with other EU15 countries). This may have strong implications for labor force participation and employment of older workers and also for the type of jobs they can do.

In this paper we explore, from a descriptive point of view and using a variety of data sources, the potential influence of these factors in explaining the employment trends over the last decades in Spain. Neither changes in the underline social security rules or changes in health conditions can explain the change in trends observed around 1995. However, we document three factors that are potential drivers of these observed changes: the overall growth of the employment rate observed in the 1995-2007 period, differences across cohorts in the skill composition as well as increases in the labor force attachment of wives.

The rest of the paper is organized as follows. Section 2 reviews the main trends in labor force participation observed in the las 30 years. Section 3 explores the potential factors behind these trends, and section 4 concludes.

2. Trends in labor force participation and employment for older men in Spain

In this section we present evidence on the evolution of labor force participation rates and employment rates for Spanish men aged fifty-five to sixty-nine. We divide older men in three age groups: those aged between fifty-five and fifty-nine, those in the age bracket sixty to sixty-four and those between sixty-five and sixty-nine years old (above the normal retirement age set at 65 years old).

We first use data from the OECD statistics database to plot trends in labor force participation from 1980 until 2014 for men in these three age groups. Figure 1 shows that, as expected, labor force participation rates are highest for the youngest group, and stay above 70% for the entire period. Their labor force participation rate was over 80% in the early 1980s, but this rate

decreased smoothly until 1995 when it hit the lowest value over the period (70%), before it started increasing. Labor force participation trends for men aged fifty-five to fifty-nine continuously increased until 2008 when the Great Recession hit Spain. Labor force participation of this age group has remained stable at around 80% thereafter.

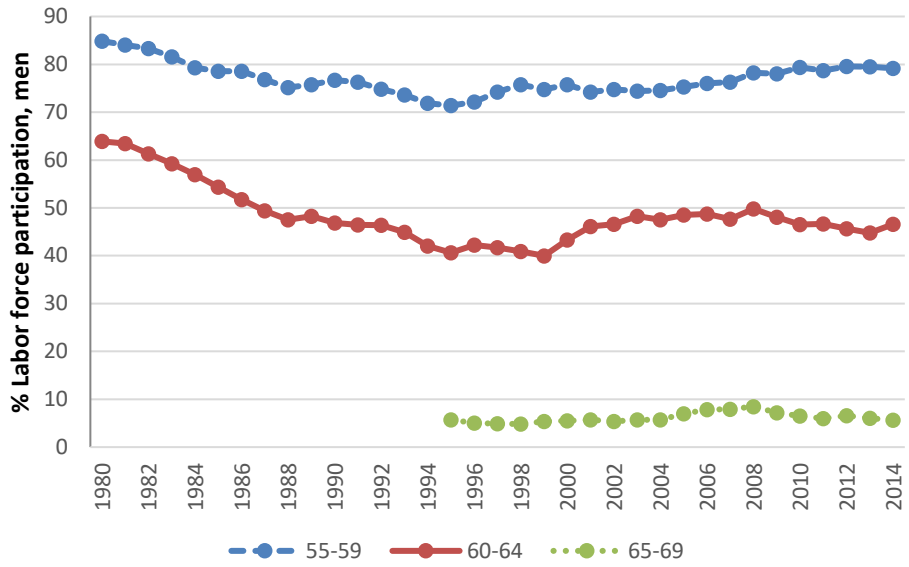
Labor force participation rates of men aged sixty to sixty-four present a similar U-shape between 1980 and 2008 with four particularities. First, the overall labor force participation levels are lower. Second the drop between the start of the period, when labor force participation rates were above 60%, until the mid-1990s was larger. Third, trends did not immediately reverse after 1995, but labor force participation rates of men aged sixty to sixty-four were stable at the lowest level of the period (40%) until 1999. Fourth, while labor force participation rates increased between 2000 and 2008, they stayed at 50%, 10 points below the rates at the start of the period. In addition, labor force participation rates of men aged sixty to sixty-four slightly decreased during the Great Recession.

Last, for the oldest group of individuals aged sixty-five to sixty-nine, the OECD only has data from 1995 until 2014. We can see that labor force participation rates of this group of individuals are very low and always below the 10% level. This is reasonable taking into account that the normal retirement age in Spain is set at 65. Although the levels are low, we can see a similar evolution of labor force participation rates for this older group of workers; increasing from 1995 until 2008 when the rate reached the highest level of the period (10%) and decreasing during the recent economic crisis.

In order to shed light on the evolution of labor force participation rates of men aged 65-69 over the whole period, we use quarterly data from the Spanish Labor Force Survey (Encuesta de Población Activa, EPA) for the period 1977 to 2015.[1] The left panel of Figure 2 shows that there was a sharp decrease in labor force participation rates for this age group between the late 1970s, when more than 30% of men aged sixty-five to sixty-nine were in the labor force, and the mid-1990s, when participation rates were slightly above 5%.

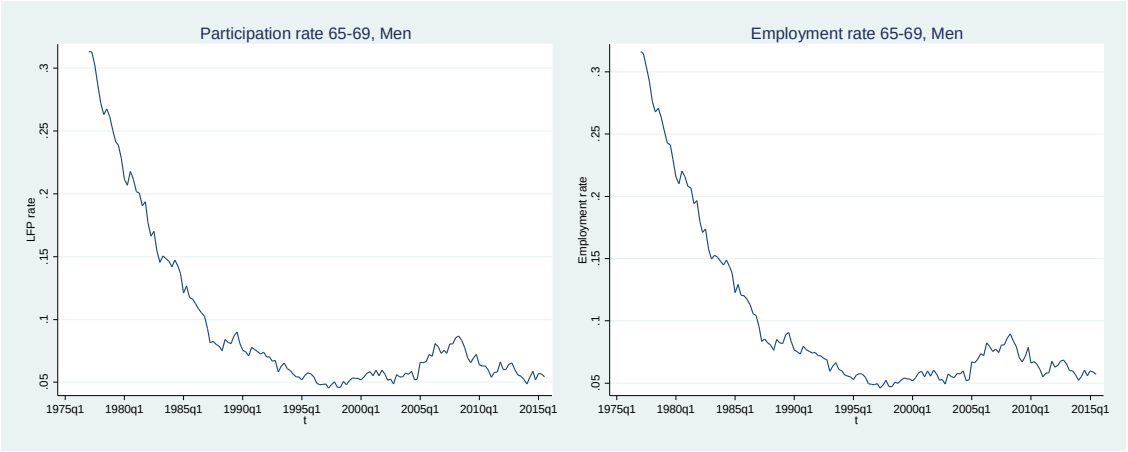
[1] The EPA is a rotating quarterly survey carried out by the Spanish National Statistical Institute (*Instituto Nacional de Estadística*, INE). The planned sample size consists of about 64,000 households with approximately 150,000 adult individuals. Although the survey has been conducted since 1964, publicly released cross-sectional files are available only from 1977. The 1977 questionnaire was modified in 1987 (when a set of retrospective questions were introduced), in the first quarter of 1992, in 1999 and 2004. The EPA provides fairly detailed information on labor force status, education and family background variables but, like most of the other European-style labor force surveys, no information on health is provided. The reference period for most questions is the week before the interview.

Figure 1. Labor force participation rates for older men in Spain 1980-2014. Age groups 55-59, 60-64 and 65-69.



Source: Own calculation based on OECD data

Figure 2. Labor force participation and employment rates for men aged 65-69 (1978-2015)

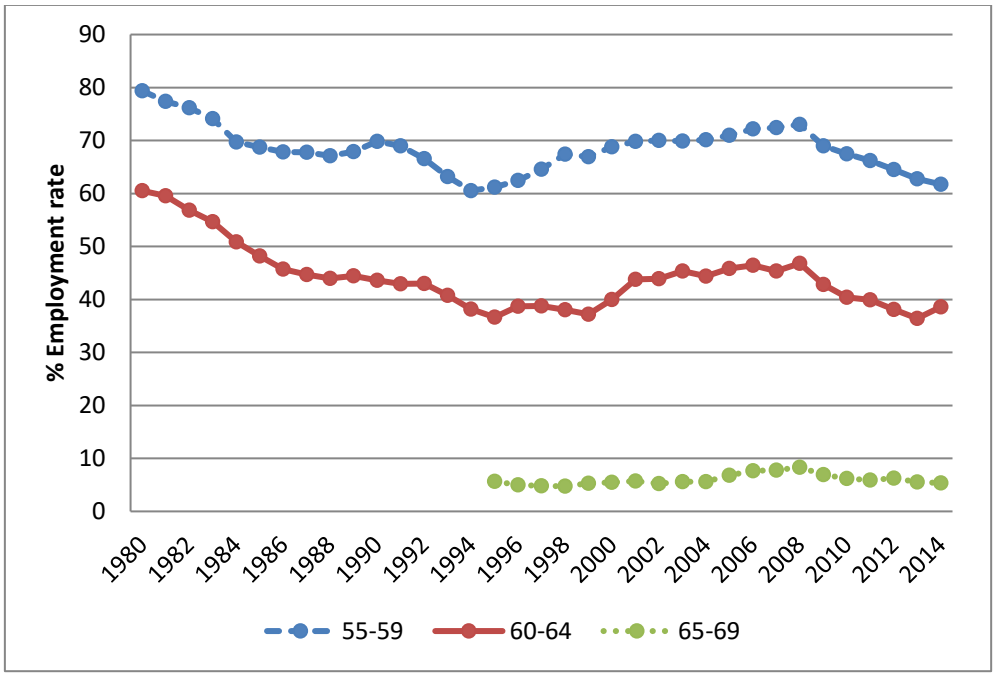


Source: Own calculation based on data from the Spanish Labor Force Survey

Figure 3 shows employment rates for the same age groups of men and the same time period using data from the OECD. First, we see that both the trends and levels of employment of men above the normal retirement age (group aged 65-69) are the same as the labor force participation rates (see Figure 3 and right panel of Figure 2). Therefore, men aged sixty-five to sixty-nine in Spain only stay active in the labor force if they remain employed. Similarly, the evolution of employment rates is almost the same than labor force participation rates for the

group aged 60-64. We can see that their employment rates started particularly high in 1980 (60%) and decreased steadily until the mid-1990s when they were below 40%. From the late 90's employment rates of men aged sixty to sixty-four increased mildly until the onset of the economic crisis in 2008 which reduced employment rates for men in this age group. Last, although employment rates of the youngest group (55-59) follow a similar trend as their labor force participation rates, they seem more affected by the business cycle. For example, while there is an overall decreasing trend between the early 1980s and mid-1990s, there is a mild increase in employment rates around the late 1980s. Similarly, while labor force participation rates of men aged fifty-five to fifty-nine have remained stable after the onset of the Great Recession, we see that their employment rates have decreased from over 70% in 2007 to 60% in 2014.

Figure 3. Employment rates for older men in Spain 1980-2014. Age groups 55-59, 60-64 and 65-69.

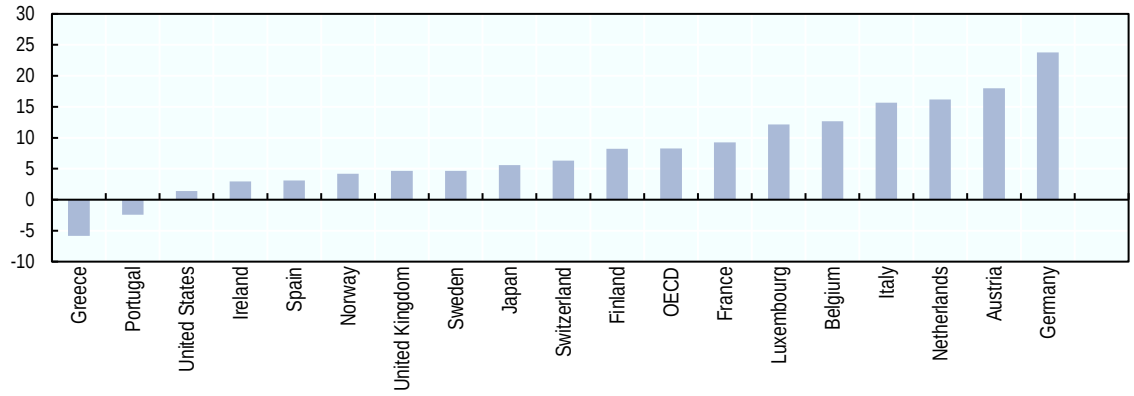


Source: Own calculation based on OECD data

Figure 4 plots the changes in employment rates of older workers (aged fifty-five to sixty-four) in OECD countries between 2004 and 2014 in order to place the Spanish case in an international perspective. The first thing to be noted is that employment rates have grown in almost all OECD countries (except Greece and Portugal) for individuals aged fifty-five to sixty-four. We can also see that Spain is one of the countries where employment rates for this age group have increased

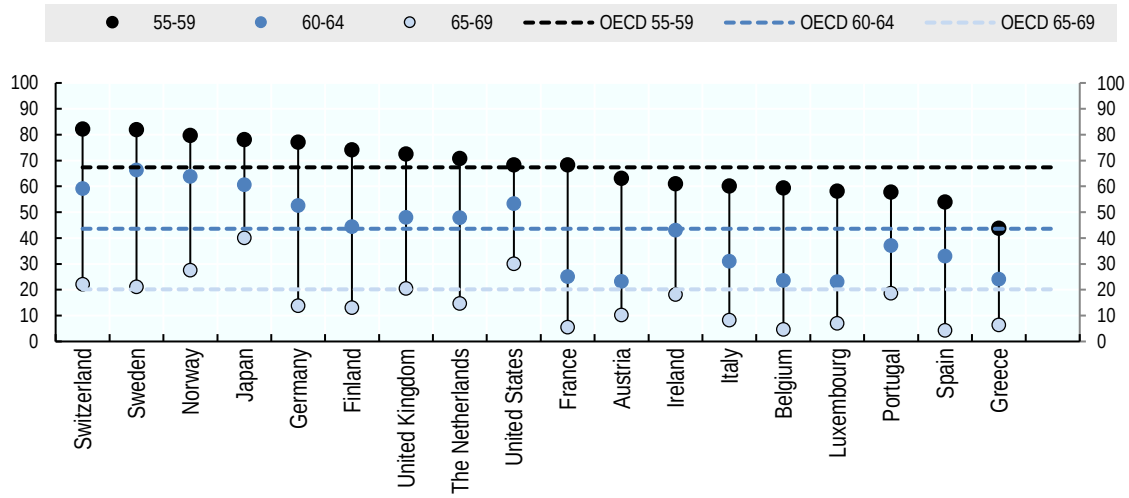
the lowest (below 5 percentage points). In other European countries, like Germany, The Netherlands or Italy, employment rates have increased by more than 15 percentage points. Furthermore, Figure 5 also shows that in 2014 employment rates of workers aged 55-59, 60-64 and 65-69 in Spain were one of the lowest across the OECD.

Figure 4. Percentage point changes in employment rate of older workers in OECD countries, 2004-2014.



Source: Own calculation based on OECD (2015) data.

Figure 5. Employment rates of workers aged 55-59, 60-64, 65-69 in 2014 in OECD countries.

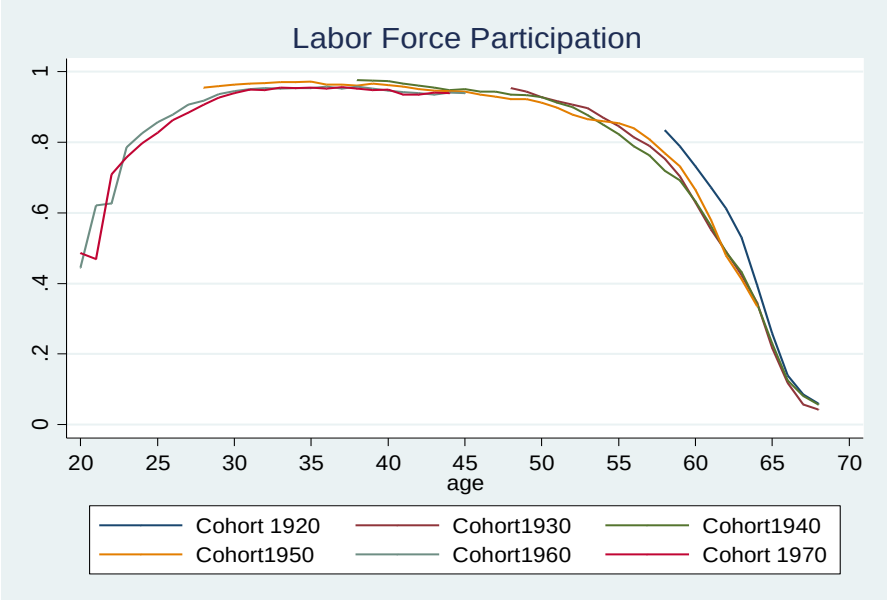


Source: Own calculation based on OECD (2015) data.

Previous figures suggest that the increase in labor force participation and employment rates of the age group sixty to sixty-four occurred about five years after the increase in the younger age group (55-59). This suggests that changes in these trends may be driven by cohort effects. Therefore, we obtain labor force participation and employment rates over the working life for different cohorts using data from the Spanish Labor Force Survey. In particular, Figure 6 and

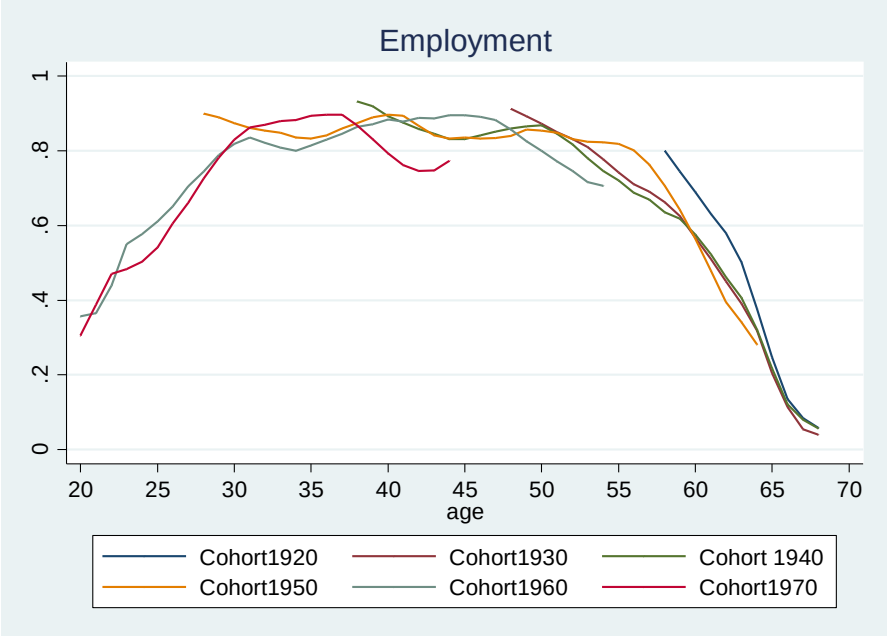
Figure 7 plot the labor force participation and employment profiles for ages 20-68 for the cohorts of Spanish men born in 1920, 1930, 1940, 1950, 1960 and 1970. We see that there are no main differences in labor force participation and employment rates across cohorts for men aged between twenty and fifty beyond possible business cycle effects on employment, but not in labor force participation. However, few differences appear among older workers. Labor force participation and employment rates were higher at ages 57-68 for the oldest cohort of men (1920), while the differences between the other cohorts are smaller. However, it seems that labor force participation rates of the cohort born in 1950 between ages fifty-five and sixty-two were slightly higher than labor force participation rates of the cohorts born in 1940 and 1930. This was only partially translated into employment, as employment rates of this cohort suddenly decreased at the late fifties when they were affected by the economic crises in 2008, so employment rates of men in their early sixties in this cohort are even lower than the rates of the preceding two cohorts.

Figure 6. Labor force participation trends for different cohorts of men in Spain.



Source: Own calculation based on data from the Spanish Labor Force Survey

Figure 7. Employment trends for different cohorts of men in Spain.



Source: Own calculation based on data from the Spanish Labor Force Survey

3. Why labor force participation rates for men in Spain have been increasing since the mid-90s?

In this section we provide some descriptive evidence to shed light on the possible drivers behind the trend reversal in labor force participation rates for men in Spain observed in the mid-90s. In particular, we explore the potential contributions of changes in financial incentives, health status, skill levels, labor market conditions, and women labor force participation.

3.1. Changes in Social Security Benefits

The Spanish old-age pension system is a defined benefit pay-as-you-go system. There have been many reforms in the Spanish old-age pension system in the last 30 years (see Table 1 for a summary, and Boldrin et al 2010 and García-Gómez et al 2012 for a detailed exposition of the changes in old-age pension system in Spain). Since the 1985 reform, there have been substantial parametric reforms in 1997, 2002, 2007, 2011 and a non-parametric reform in 2013.[2]

[2] The 2013 reform cannot be classified as a parametric because, by linking benefits to life expectancy, it changes, at least partially, the spirit of the system.

3.1.1. The old-age pension system after the 1985 reform

The key ingredients of the Spanish pension system were set in the 1985 reform. Eligibility to the old-age pension benefits in Spain requires having contributed to the system by at least 15 years. The pension amount is calculated by multiplying a regulatory base by a percentage which depends on the age of the individual and the number of years contributed to the system. The pension amount is capped from below by the minimum pension which is currently about the same level than the minimum wage (see Jiménez-Martín, 2014, for details) and the maximum benefit (between 4 and 5 times the minimum wage).

Under the 1985 regime, a worker could enter into the system at the normal retirement age of 65 if she did not have any job with affiliation to the social security system, and those who had first contributed to the system benefit 1967 could early retire at sixty. In order to compute the pension, the regulatory base was obtained by dividing by 112 the wages of the last 96 months before retiring and the percentage applied to this regulatory base was the following:

$$\begin{cases} 0 & \text{if } n < 15 \\ 0.5 + 0.03(n - 15) & \text{if } 15 \leq n \leq 25 \\ 0.8 + 0.02(n - 25) & \text{if } 25 < n < 35 \\ 1 & \text{if } 35 \leq n \end{cases}$$

where *n* is the number of years of contributions to the system.

3.1.2. The 1997, 2002, and 2007 reforms

In 1997 the number of contributory years used to compute the benefit base was progressively increased from 8 to 15 years[3] and the formula to calculate the replacement rate was also made less generous. On the other hand, the 8% penalty applied to early retirees between the ages of sixty and sixty-five was reduced to 7% for individuals with at least forty years of contributions at the time of early retirement.

In 2002 further changes in the old-age system were introduced. Before 2002, only individuals who had contributed to the system earlier than 1967 could benefit from early retirement at sixty, while the rest had to wait until the normal retirement age of sixty-five. In 2002, early retirement at age sixty-one was made available for the rest of the population. At the same time, there was an impulse to the partial and flexible retirement schemes with the possibility of

[3] In 1997 the last 108 months are included, the last 120 months in 1998, the last 132 months in 1999, the last 144 months in 2000, the last 156 months in 2001, and the last 180 months from 2002 onwards.

combining income from work with old-age benefits and the introduction of incentives for individuals to retire after the legal retirement age of sixty-five.[4] At the same time, the possibility to access early retirement at sixty-one was extended to some involuntary unemployed individuals. In particular, to those registered in the employment office during the last 6 months with at least 30 years of contributions into the old-age system.

In 2007 the incentives to retire later than age sixty-five were further increased providing an additional three percent, instead of the two percent introduced in 2002. In addition, two restrictions were added: i) individual must have contributed for at least two out of the last 15 years to have access to the old-age pension system; and ii) the proportional part related to the extra monthly salaries were now excluded from the computation of the number of contributed years. On the other hand, the 8% penalty applied to early retirees between the ages of sixty and sixty-five was reduced for those individuals with at least 30 years of contributions to 6-7.5%, depending on the number of years contributed. In addition, the contributions for unemployed workers older than fifty-two were increased so that they would receive a higher old-age pension when retiring.

Although these reforms have tried to increase labor supply of older male workers, the existing evidence (see for example, Garcia-Perez et al (2013) and the references therein) does not show any clear link between these reforms and the increased labor supply of older male workers.

Table 1. Main reforms since 1980 of the pension system Spain since 1985

1985	- The minimum mandatory years of contribution increases from 8 to 15. -The number of contributive years used to compute the pension increases from 2 to 8. - Several early retirement schemes are introduced; Partial retirement and special retirement at age 64.
1997	-The number of contributive years used to compute the pension increases from 8 to 15 (progressively by 2001). -The formula to compute the benefits is made less generous. -The 8% penalty applied to early retirees between the ages of 60 and 65 is reduced to 7% for individuals with 40 or more contributory years.
2002	-Early retirement only from age 61. -Impulse partial retirement; possible to combine it with work. -Unemployed aged 61 can retire if contributed for 30 years and the previous 6 months registered in employment offices. -Incentives to retire after age 65.
2007	-15 “effective” contributory years are used to calculate the pension. -Reduction from 8% to 7.5% of the per-year penalty applied to early retirees between 60 and 65 for individuals with 30 contributory years. -Broaden incentives to stay employed after age 65.

[4] An additional two percent per additional year of contribution beyond the age of 65 for workers with at least 35 years of contributions on top of the 100% applied to the regulatory base.

	-Increase contributions to the old-age pension system made by the social security administration for individuals receiving the special scheme of unemployment assistance for 52+.
2011	-The number of contributive years used to compute the pension increases from 15 to 20 -The normal retirement age increases from 65 to 67 -Eligibility conditions for early retirement are modified
2013	-Introduction of a sustainability factor -New scheme to make compatible pension and work income

3.1.3. The 2011 reform

The terrible demographic and labor market scenarios that arose during the first years of the great recession led the Spanish government (forced by the EU pressure to reduce the underlining future deficits) to introduce a reform of the pension system in 2011. In this reform two crucial elements were changed: the extension of the number of years of contributions taken into account to compute the benefits, and the increase in the normal retirement age (from 65 to 67, gradually).[5] This second change was extremely relevant for Spain because the normal retirement age had not been amended since the year it was first established in 1919. These two changes caused a cut in the generosity of the pension system. The first one reduced the replacement rate by about 10 to 20 percent depending on the worker's characteristics and earnings history, and the second reduced the social security debt with those individual planning to retire at the normal retirement age. The reform also changed (restricted) the eligibility conditions for early retirement but the effects of these changes are less clear.[6] Finally note that, since the reform barely changed the eligibility conditions to access to the minimum pension, those workers expecting to receive the minimum pension (basically individuals with low income and short contributive careers) are expected to be less affected by this reform (Jiménez-Martin, 2014).

The case of Spain is not an isolated one, as most European countries have initiated or are about to initiate a process of pension reform (European Commission, 2012). In the majority of cases, the reform involves the following three elements: (i) delaying the normal retirement age (but relaxing the requirement to make compatible work and pension income), (ii) reducing the system's generosity, and (iii) introducing a sustainability factor, which adds some uncertainty to the final benefit, thereby moving the respective system from a defined benefit to a defined contribution model.

The 2011 Spanish reform (law 27/2011), which includes elements (i) and (ii) above, should, in normal circumstances, have been sufficient to alleviate the medium-term financial pressure on

[5] The age was increased one month each year from 2013 to 2018 and by two month each year thereafter.
[6] See Benítez-Silva et al (2013) for a description of other changes introduced by the 2011 reform.

the Spanish pension system. However, some studies consider that the reform is insufficient (see for example Díaz-Giménez and Díaz-Saavedra (2017) and Sánchez-Martín (2014, 2017)) from a financial point of view.

3.1.4. The 2013 Reform and the Sustainability Factor

The importance of the 2013 reform lies in the introduction of an automatic link between the initial pension and the evolution of life expectancy: the Sustainability Factor (Conde-Ruiz and Gonzalez, 2016). Therefore, it was an attempt of the government to ensure that its short- and long-term social security finances are under control. The pension system in Spain is a defined-benefit, pay-as-you-go scheme, so the pension does not fulfill any criteria of financial balance. Thus, when the demographic variables (for example, life expectancy) or economic variables (primarily, the relationship between contributors and pensioners, and productivity) that impinge on the system deteriorate, the system becomes unbalanced. The Sustainability Factor, among other things, automatically adjusts the system when exposed to these demographic changes and, thus, can be seen as a mechanism that transforms a defined benefit scheme, such as that operated by Spain, to a defined contribution scheme.[7]

The Sustainability Factor has two key components: the intergenerational equity factor (IEF) and the pension revaluation index (PRI). The IEF aims to provide equal treatment to those that retire at the same age and with the same employment history, but who have different life expectancies. This factor has not given rise to much controversy, since it seems reasonable that if pensioners are to receive the same total pension throughout their retirement, an individual with a greater life expectancy should receive a little less each year. The second factor, fixes a budgetary constraint on the economic cycle and, as such, it is relatively flexible in the short term. However, the discretionary rule chosen by the Government guarantees that, even though social security revenues are insufficient to cover pension costs, pensions should rise each year by at least 0.25% and by no more than the annual changed in the CPI + 0.25%.[8]

In summary, the 2011/2013 pension reforms, by reducing benefit expectations and also by including some incentive to work longer (partial benefit compatibility after the normal retirement age), are expected to incentivize the labor supply of older workers in Spain (see

[7] See, in this regard, http://www.fedeablogs.net/economia/?p=32680.
[8] See Sánchez-Martín (2014 and 2017) for a description of the functioning of intergenerational equity factor (IEF) and the pension revaluation index made by two member of the reform commission.
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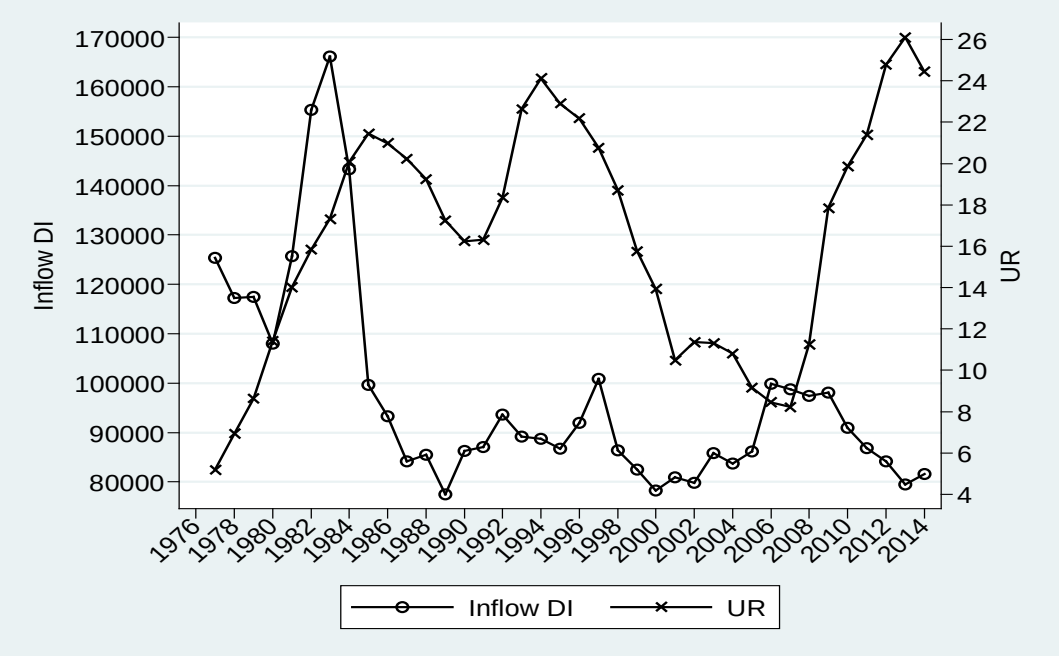
Sánchez-Martín (2014 and 2017)), however it is still too early to fully detect their implications in the data.

3.1.5. Other routes into early-retirement

Another factor that may affect the labor market behavior of older workers is disability and unemployment insurance policies. Both the main characteristics of the disability system as well as its main reforms are extensively documented in García-Gómez et al. (2012).

Figure 8 shows the evolution of the number of new disability benefits granted each year (or inflow to DI) and the unemployment rate during the years 1976-2014 in Spain. In contrast to other industrialized countries, DI inflow in Spain does not show a continuous increase during the last decades (see, OECD 2010 for OECD countries). As stated before, this low historical increase in the inflow could be a result of the stringency of the Spanish system (Jiménez-Martín et al. 2018). More specifically, the government implemented a reform of the system in 1985 that increased the requirements to be granted a disability benefit. As clearly shown in Figure 8, this reform seems to have immediately reduced the inflow to DI and kept it at a low level since then. However, around 1995 we do not detect any reduction in the inflow that can justify the strong increase in the employment rate of older workers thereafter.

Figure 8. New contributory disability benefits granted each year and unemployment rate. Years 1977-2014.



Source: Own calculation using data from Spanish Social Security Administration for the Inflow to disability insurance (DI) and data from the Spanish National Institute of Statistics for the unemployment rate (UR).

Finally, between 1995 and 2011 there was a special unemployment scheme for those workers aged at least fifty-two (UB52+) who: (a) are eligible for a retirement pension, except for their age; (b) have an income below 75 percent of the monthly minimum wage. In 2011 the program was restricted to workers aged at least fifty-five (UB55+).

The benefit can be collected until the person reaches a retirement age, either early or normal. During this time the individual collects UB52+ or UB55+ and, until 2011, the system was assigning a fictitious contribution equal to 125% of the minimum wage. After the 2011 reform, the contribution varies with the length of the contributive career. The existing evidence (see for example, Garcia-Perez and Sánchez-Martín, 2015) illustrates that UB52+ or UB55+ limits the job search of low income workers, thereby reducing participation in the labor market.

3.2. Trends in self-assessed health and mortality

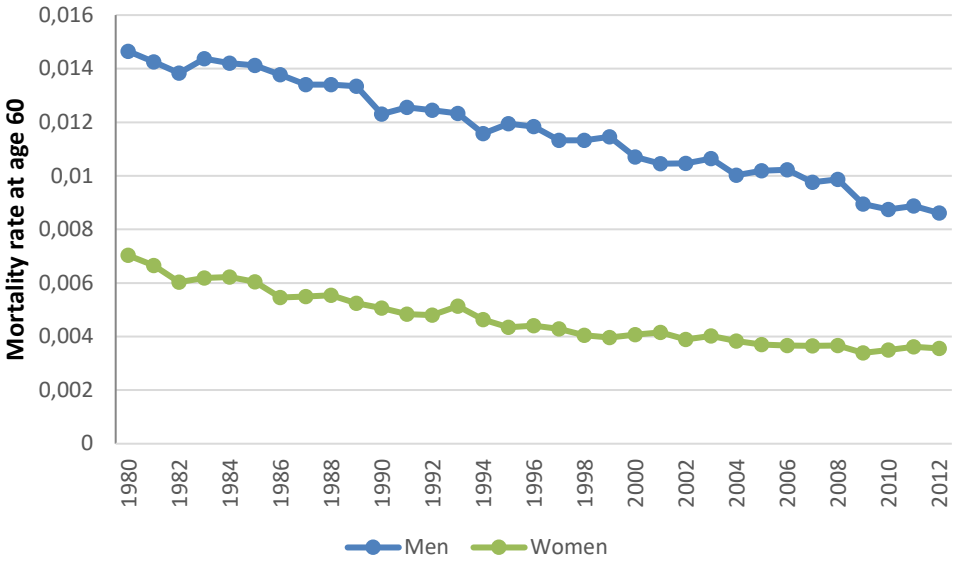
Another potential explanation of the increase in labor force participation of Spanish men since the mid-1990s would be an improvement in the health status of those workers that could allow older workers to remain longer in the labor market. We investigate the plausibility of this hypothesis looking at trends in mortality using data from the Human Mortality Database and trends in self-reported health using data from a series of Spanish Health Surveys (*Encuesta Nacional de Salud*, ENS).[9]

Figure 9 plots mortality rates at age sixty for Spanish men and women from 1980 until 2012. We can see a steady decline in these mortality rates for both men and women. In addition, the decrease is slightly stronger for men suggesting that the gender gap in mortality has narrowed over time. However, these trends do not necessarily translate into an improvement of health, as the international evidence is inconclusive regarding whether changes in mortality are translated into a compression or expansion of morbidity (Klijs et al. 2009). For the Spanish case, it seems that these improvements in mortality rates at older ages have, at most, partially translated into improvements in self-assessed health. Figure 10 presents the percentage of men and women who declare to be in fair or poor health at ages fifty-five to sixty-four in Spain. We see that, even if mortality rates at age sixty have constantly decreased for both men and women in Spain since the early-1980s, only a minor improvement is found in self-assessed health status from 2006. In addition, García-Gómez et al (2012) show that the percentage that reports having

[9] ENS is a set of nationwide cross-sectional surveys that collect information on health, health care use, lifestyles and socioeconomic characteristics of the Spanish population. We use data from the cross-section ENS in 1987, 1993, 1995, 1997, 2001, 2003, 2006, 2009, 2011 and 2014. Self-assessed health is defined as the percentage of individuals that rate their general health as fair or poor.

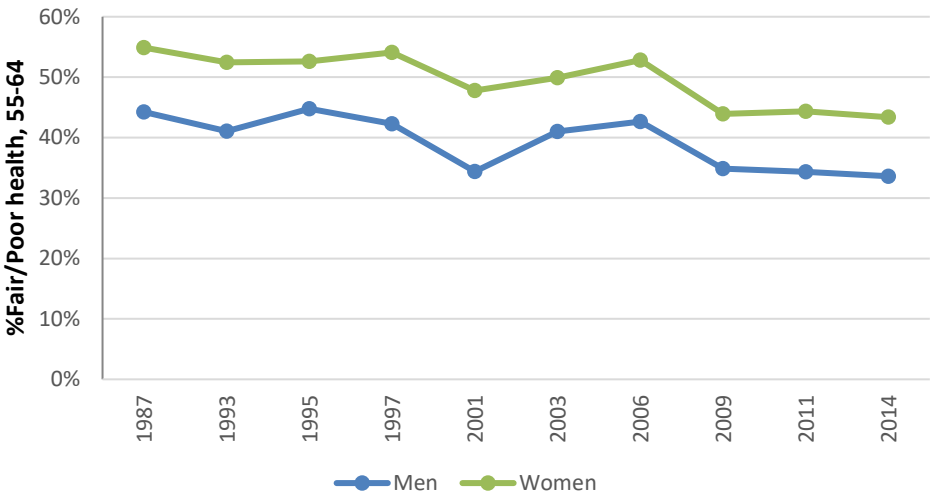
reduced their principal activity because of a health problem has increased over the same period, together with the prevalence of hypertension, cholesterol, obesity and the number of hospitalizations due to mental problems in Spain for the same age groups over the same time period. Therefore, it seems unlikely that changes in the health of the population can explain changes in labor force participation trends of older workers in Spain.

Figure 9. Mortality rates at age 60 for men and women in Spain.



Source: Own calculation based on data from the Human Mortality Database.

Figure 10. Percentage of men/women in fair or poor health at ages 55-64 in Spain.



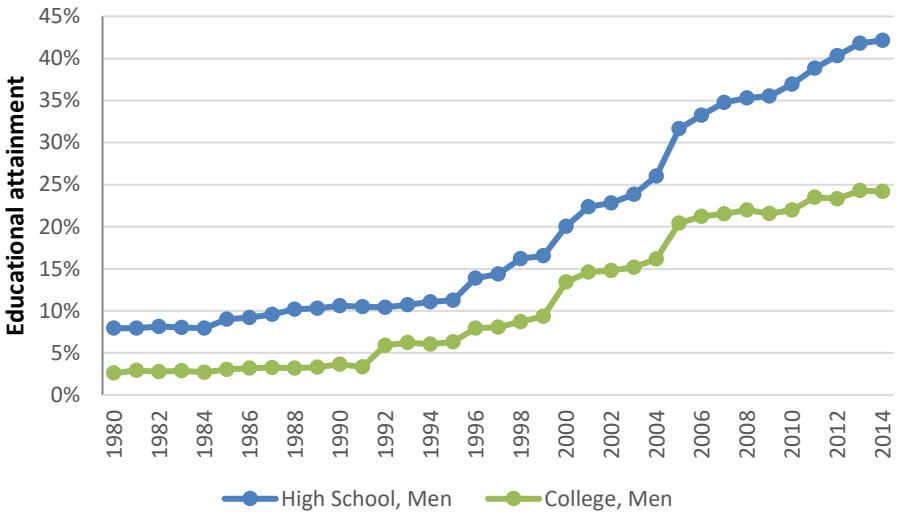
Source: Own calculation based on data from the Spanish Health Survey.

3.3. Trends in human capital

Another potential explanation of the increase in the labor force participation observed after the mid-1990s would be an increase in the skill level of Spanish men approaching the retirement age that could lead to a stronger labor force attachment. Figure 11 plots the trend in educational attainment for men aged fifty-five to sixty-four in Spain from 1980 until 2014 using data from the Spanish Labor Force Survey. We see a strong increase over time in both high school as well as college attainment for Spanish older men. While in 1980 only 8% of men aged fifty-five to sixty-four had completed a high school degree (and only 3% had college education), in 2014 41% of men aged fifty-five to sixty-four had a high school diploma and 25% of them had a college degree. Moreover, their educational attainment increased slowly from 1980 until the mid-1990s, while it expanded quite sharply from the mid-1990s until 2014. Therefore, we see that the shift in the trends in labor force participation rates and employment rates coincides with the arrival of more educated cohorts.

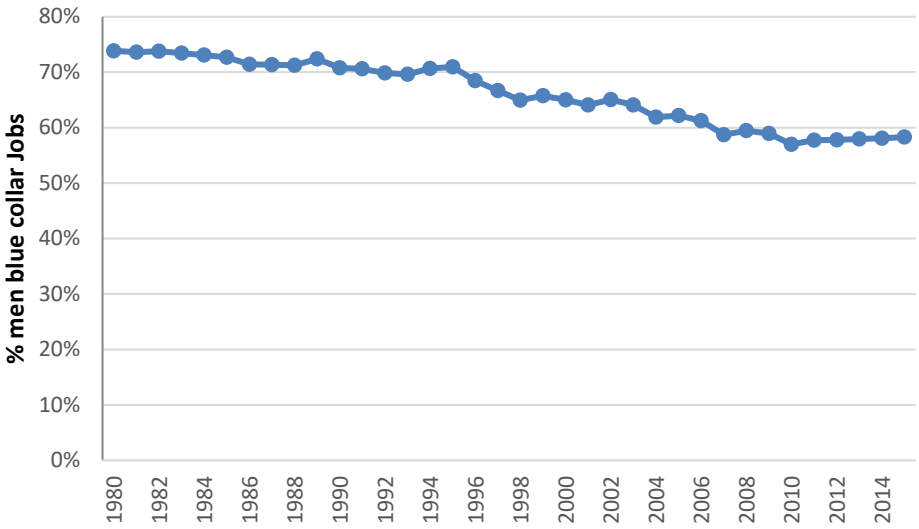
A similar evolution can be observed for the percentage of Spanish men with a blue collar job from 1980 until 2014 (see Figure 12). We see that the percentage of men working in blue collar occupations remained pretty stable around 70% from 1980 until 1994. However, from 1995 (and coinciding with the raise in educational attainment observed in Figure 11) the percentage of Spanish men in blue collar jobs started steadily to decrease from 70% until a level below 60%. Again, this confirms that changes in the skill level of older workers may be (at least partly) behind the trends in labor market participation and employment rates in Spain.

Figure 11. Trends in educational attainment for men aged 55-64 in Spain, 1980-2014.



Source: Own calculation based on data from the Spanish Labour Force Survey.

Figure 12. Percentage of men workers aged 55-64 in blue collar jobs in Spain, 1980-2014.



Source: Own calculation based on data from the Spanish Labor Force Survey.

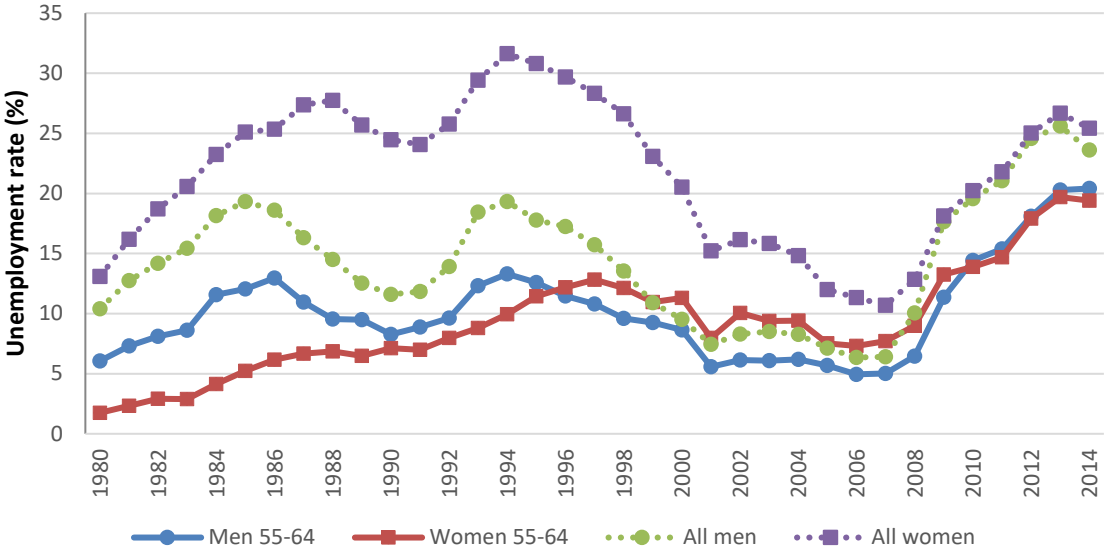
3.4. Business cycle conditions

As previously discussed, business cycle conditions may also be behind some of the trends in labor force participation and employment rates. Figure 13 compares trends in unemployment rates between 1980 and 2014 for men and women aged fifty-five to sixty-four and the overall working-age population using data from the OECD. First, we notice that unemployment rates for men move in parallel for both men in working ages and men aged fifty-five to sixty-four, although the levels for the older workers are always lower. [10] A similar picture, although at even higher levels until the onset of the economic crises, is found for the unemployment rate of all women of working age. However, trends in unemployment rates of women aged fifty-five to sixty-four present a different pattern during the first half of the period. Their unemployment rate was below 5% at the early 1980s but continuously increased until reaching almost 15% in 1997. Since then, trends move in parallel to the other age groups.

Thus, by looking at Figure 13 we can see that business cycle conditions may have played an important role in explaining the increase in labor force participation and employment rates of older men since the mid-1990s that unemployment rates strongly decreased for all age groups from this point onwards (until the onset of the economic crisis in 2008) as a result of the strong improvement in the economic cycle in Spain.

[10] See Dolado et al (2013) for an analysis of unemployment for young individuals in Spain.

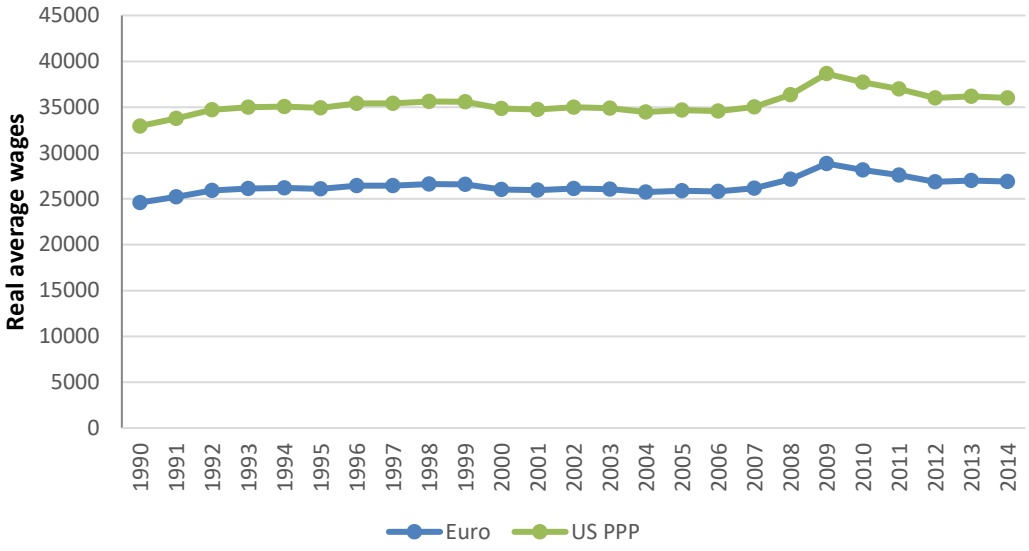
Figure 13. Unemployment rate in Spain, all men/all women and those aged 55-64, 1980-2014.



Source: Own calculation based on data from OECD.

Another potential explanation for higher labor market attachment after the mid-1990s could be higher wages. However, there have been almost no changes in real wages in Spain over the last two decades (see Figure 14). We see that real average wages only increased after the onset of the economic crises in 2008. However, this is due to a composition effect as low paid workers in temporary contracts were laid off first (Puente and Galán, 2014).

Figure 14. Real average wages of Spanish workers, 1990-2014.

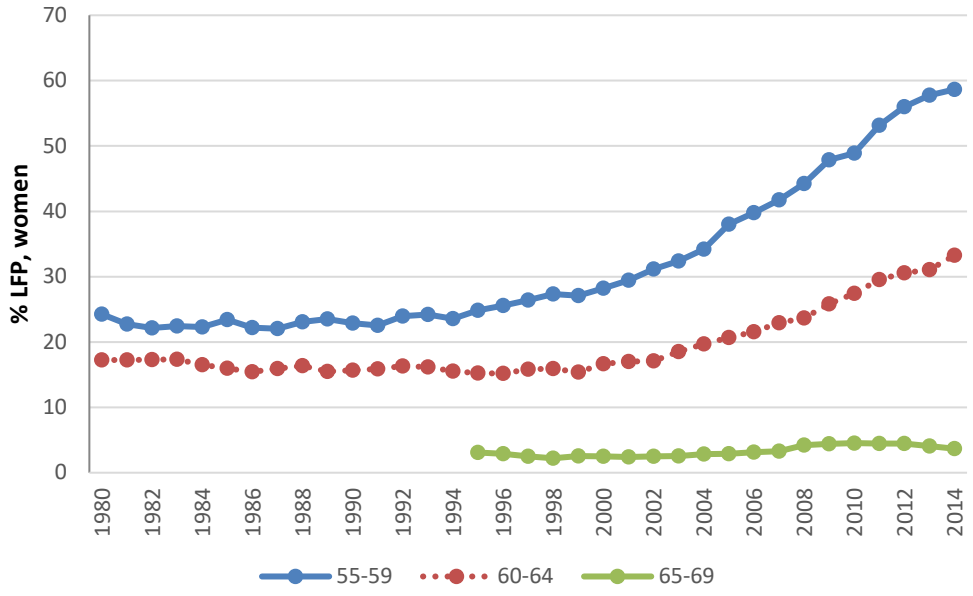


Source: Own calculation based on data from OECD.

3.5. Employment and labor force participation of spouses

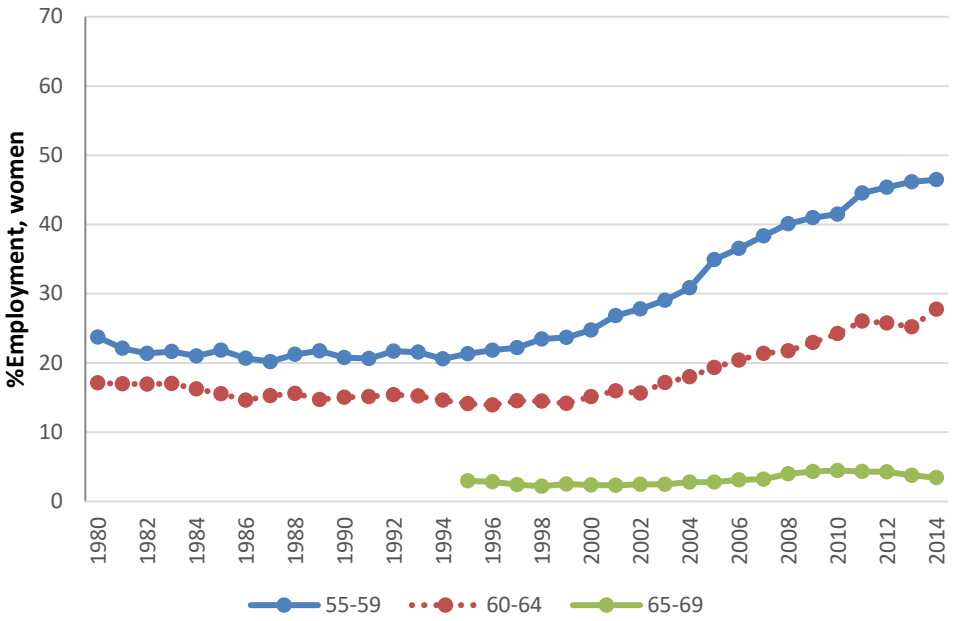
Schirle (2008) estimates that between one-fourth and one-half of the increase in older men's labor force participation in United States, Canada and United Kingdom can be explained by the effect of their wife's participation decisions. Figures 15 and 16 plot labor force participation rates and employment rates for women aged 55-59, 60-64 and 65-69 over the period 1980-2014 using data from the OECD. We see that trends in employment (Figure 16) follow very closely trends in labor force participation rates (Figure 15). Moreover, until the mid-1990s the levels are similar suggesting that almost all older women still active in the labor market were also employed. In addition, we see that participation rates remained flat at around 23% for women aged fifty-five to fifty-nine and 16% for women aged sixty to sixty-four until the mid-1990s. Similar to the trends observed for men, we find that participation rates of women aged fifty-five to fifty-nine started increasing first around 1995, followed by the rates of the older age group (60-64) about five years later. At the end of the period, and despite the economic crises, almost 60% of women aged fifty-five to fifty-nine were in the labor market, although only about 45% of them were employed. Last, we find that both labor force participation and employment rates of women aged sixty-five to sixty-nine have remained low between 2.5% and 4% throughout the observation period. This is similar to the trends observed for men in this age group.

Figure 15. Labor force participation (LFP) of Spanish older women, ages 55-59, 60-64, 65-69 in 1980-2014.



Source: Own calculation based on OECD data.

Figure 16. Employment of Spanish older women, ages 55-59, 60-64, 65-69 in 1980-2014.

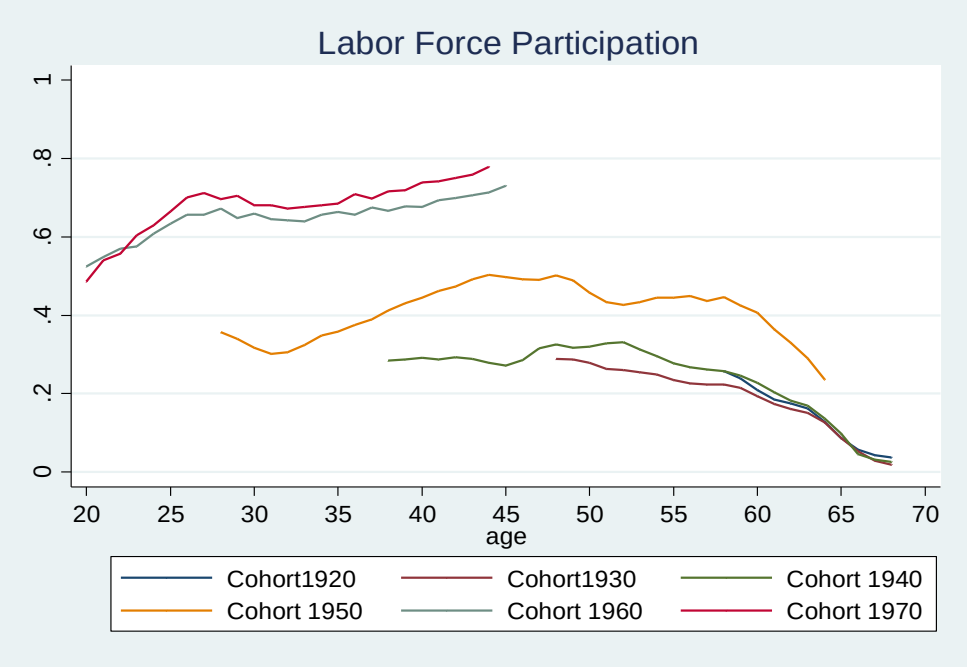


Source: Own calculation based on OECD data.

The five-year difference in the turning point in the trends suggests that cohort differences in labor market behavior may be relevant. Figures 17 and 18 plot labor force participation and employment profiles for ages 20-68 for the cohorts of Spanish women born in 1920, 1930, 1940, 1950, 1960 and 1970 using data from the Spanish Labor Force Survey. We see that there were no differences in participation rates of women from the cohorts born in 1920, 1930 and 1940. However, we observe that labor force participation rates of the subsequent cohort (born in 1950) was almost 20 percentage points higher, and a similar increased is observed between the cohort born in 1950 and the cohort born in 1960. Subsequent gains are smaller, and as a result, the labor force participation rate at younger ages of the last cohort (born in 1970) was still far below the rates observed among men.

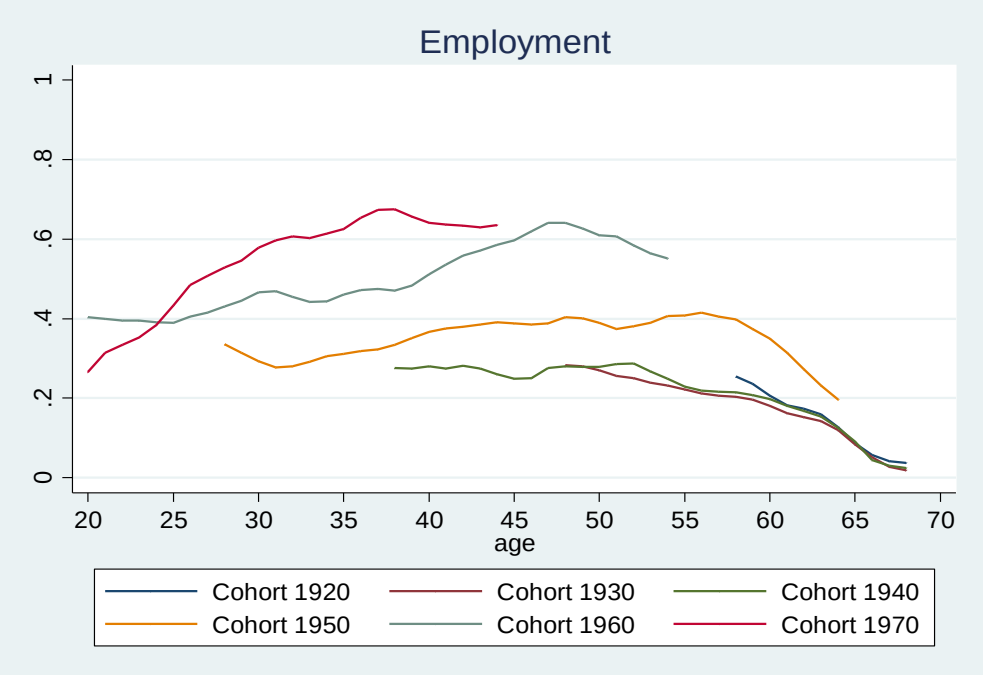
The stronger attachment to the labor market of more recent cohorts of women can also be seen in Figure 19. It plots 20 years lagged labor force participation rate of Spanish women at ages thirty-five to forty-four, i.e., the labor force participation of women aged fifty-five to sixty-four when they were twenty years younger. We see that the labor force participation at younger ages of the cohorts of women aged fifty-five to sixty-four was steadily increasing since the early 1990s, and this increase has become steeper over the last decade.

Figure 17. Labor force participation of Spanish women by cohort.



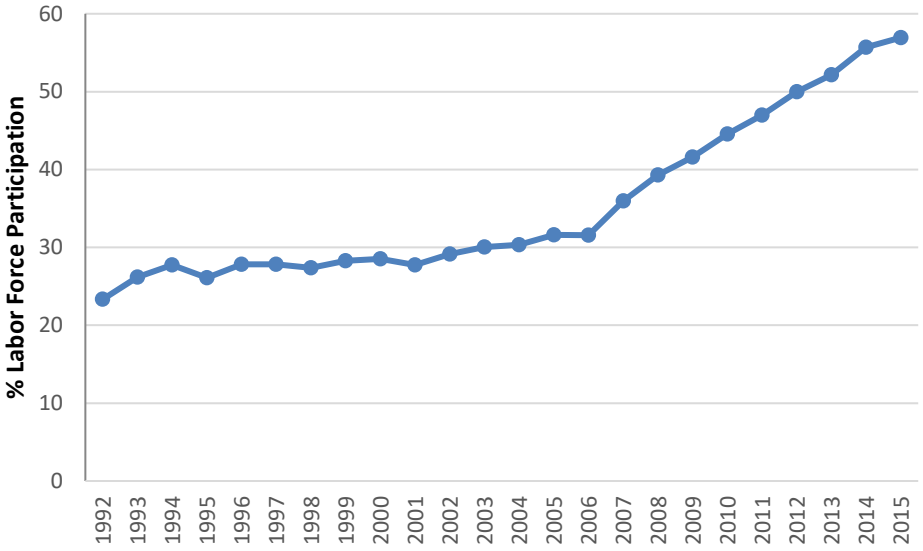
Source: Own elaboration using data from the Spanish Labor Force Survey.

Figure 18. Employment rates of Spanish women by cohort.



Source: Own elaboration using data from the Spanish Labor Force Survey.

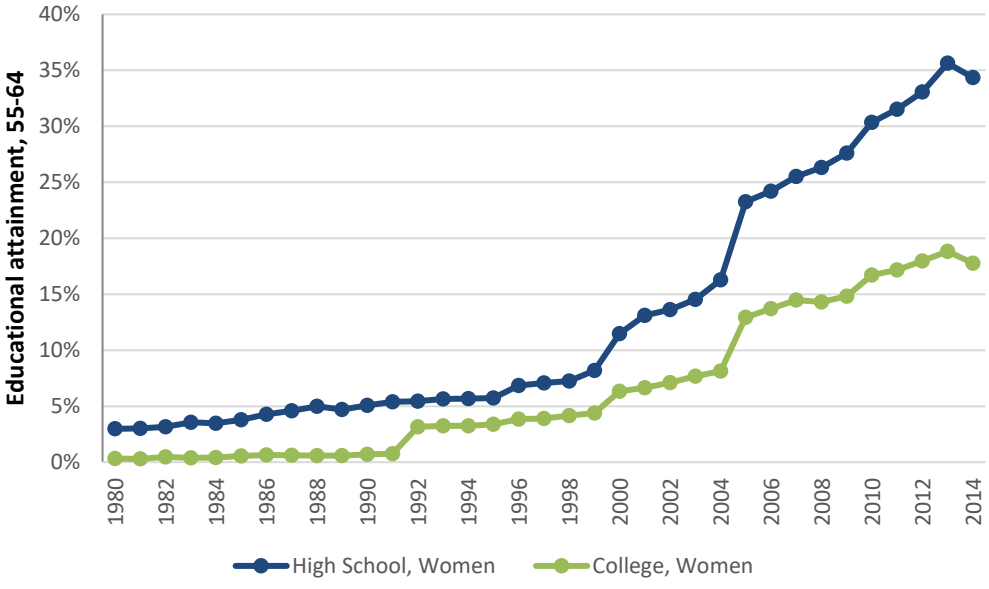
Figure 19. 20 years lagged labor force participation rate of Spanish women at ages 35-44.



Source: Own elaboration using data from the Spanish Labor Force Survey.

Similar to the evidence shown for men, educational attainment of women aged fifty-five to sixty-four has been improving over the last few decades. In fact, in Figures 10 and 20 we can see that these trends move almost in parallel, although both the percentage with high school and college have been always lower for women aged fifty-five to sixty-four compared to men aged fifty-five to sixty-four.

Figure 20. Educational attainment of Spanish women aged 55-64, 1980-2014.



Source: Own elaboration using data from the Spanish Labor Force Survey.

All in all, these figures provide suggestive evidence that a stronger attachment of women to the labor market may be one of the drivers of the observed increase in labor market participation and employment of older men workers. To the extent that labor force attachment of future older women is expected to be higher, based on current participation at younger ages, one could expect further increases in labor force participation of older men in the coming two decades.

4. Conclusions

Similar to other OECD countries, labor force participation rates of Spanish older workers were falling until the mid-1990s when there was a reversal in the trend. Labor force participation rates of Spanish older men have been increasing since then, although at a slower pace than in other OECD countries.

We explore to what extent several factors can be behind these trends. First, we conclude that the (old-age) social security system (except perhaps for the disability component) has played a marginal (at most) role on this reversal given the lack of major changes in social security benefits until the last set of reforms in 2011 and 2013. Future work should evaluate whether these last set of reforms have a substantial effect on the labor supply of older workers, as one would expect given the fundamental changes in some of the main parameters of the old-age pension system. In addition, one cannot rule out that the set of reforms have introduced a higher uncertainty about future benefits over time. This increased uncertainty could have also played a role.

Second, we also rule out that changes in the health status of the population are responsible for the reversal of this trend. Mortality rates at age 60 have been decreasing at a steady pace since the 1980's for both men and women in Spain. However, there is no change in this trend from the mid-1990's that could help explain the change in labor force participation trends at that time. Similarly, data on self-assessed health shows a mild improvement of subjective health only from 2006.

We find that the overall increase in employment due to the strong economic growth since 1995 is one of the factors that can explain the increase in labor force participation and employment rates of older Spanish men. Furthermore, differences across cohorts in both the skill composition and the labor attachment of wives are also potential drivers of these changes in labor market outcomes of older men. We find that the share of males with high-school or college degree starts increasing at the same point in time as employment and labor force participation

trends reverse sign. Similarly, at this point in time, the percentage of older workers in blue collar jobs starts decreasing.

Finally, we find strong cohort effects in female labor force participation and employment rates. In particular, the increase in labor force participation, employment and educational attainment of women in the same age group coincides with the reversal of the men's trend.

In this paper we have documented changes in labor force participation rates for older men in Spain since the 1980's. Although all the evidence presented is descriptive and we cannot estimate any causal relationship, we have pinpointed some potential factors that can explain (at least part) of the increase in labor force participation rates of older men in Spain since the mid 1990's.

Further research needs to establish the causality of these relationships and the extent to which each of the factors displayed in this paper is responsible for explaining the increase in older men participation rates in Spain.

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Appendix. Spanish Social Security System.

	Social Security System						Disability Insurance	Other Key Programs
	Eligibility	**Early and Normal Retirement Ages**	**Benefit Formula**	**Actuarial Adjustment**	**Earnings Test**	**Reforms implemented since 1990**		
Contributory pensions from 2002 to 2013	15 years of covered employment	* ERA: 61 or 63 * NRA: 65 and 3 months, currently on the from 65 to 67	Average of 15 last covered wages. Minimum pensions: Basic rate (65, no spouse) 8883 euro (it varies with age and spouse)	Benefits reduced by 6-8% per year before NRA * Benefits increased by 2-3% per year after NRA	50 per cent of pension for those qualifying (full contributive career)	1997- Number of years contribution in formula increased from 8 to 15; less generous replacement rate; incentives to longer careers 2002-Early retirement only from age 61. -Impulse partial retirement; possible to combine it with work. 2007-15 “effective” contributory years are used to calculate the pension. -Reduction from 8% to 7.5% of the per-year penalty applied to early retirees between 60 and 65 for individuals with 30 contributory years. -Broaden incentives to stay employed after age 65. **2011**- Years of contribution in benefit formula from 15 to 20 -NRA from 65 to 67 -Eligibility conditions for early retirement are modified **2013** -Sustainability factor + New scheme for work/pension compatibility	Medical screening leading to +33% disability. Four levels of disability. Benefits is an average of the average covered wage of last 8 (2 in case of accident) years	Survival pension and dependent benefits
Not contributory Old Age pensions	Means tested, insufficient contributions for the contributory regime	Age 65+	Fixed amount 2015, 5.136,6 euro, 14 instalments	N.A.	N.A.	none		