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Trends in Labor Force Participation of Older Workers in Spain 1980-2015

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RESUMEN NO TÉCNICO

El gran aumento en la esperanza de vida y las tasas de dependencia de la vejez impulsaron un cambio en las tendencias de la jubilación anticipada y unas tasas de participación más bajas durante los años ochenta y principios de los noventa. Afortunadamente, las tasas de empleo en muchos países de la OCDE revirtieron esta tendencia y comenzaron a aumentar (siguiendo un patrón en forma de U) desde mediados de los años noventa. En la mayoría de los países, este aumento ha sido mayor para los hombres de entre 60 y 64 años, pero los hombres de entre 55 y 59 años y de 65 a 69 años también experimentaron un aumento sustancial en la mayoría de países. La participación de la fuerza laboral y las tasas de empleo de las mujeres también han aumentado desde mediados de los años noventa, aunque la tendencia anterior no había sido negativa, y en algunos países incluso fue positiva. En España, las madres con bajo nivel de educación y participación fueron reemplazadas por hijas con mayor nivel educativo (Boldrin et al, 2001). De hecho, la participación de las mujeres en el mercado laboral prácticamente se ha duplicado en los últimos 35 años en España, de un 28% en 1977 a un 53% en 2014, convergiendo hacia pero no alcanzando las tasas de participación de los hombres en la fuerza de trabajo.

Muchos factores pueden haber contribuido a los recientes aumentos de la participación laboral y por ende el empleo, incluidos los cambios en los incentivos de la

Seguridad Social y otras rutas de jubilación anticipada como el Seguro de Incapacidad o el Seguro de Desempleo, las mejoras en la salud y la longevidad, el aumento de la educación, el cambio hacia empleos menos exigentes físicamente, y finalmente aumento de la participación femenina (combinado con el deseo de una jubilación conjunta entre las parejas).

Hay una línea de investigación (véase Garcia-Perez et al, 2013), que enfatiza la importancia de la Seguridad Social y las regulaciones laborales para determinar el comportamiento laboral de los trabajadores mayores. Dichos autores encuentran que las regulaciones de desempleo son particularmente influyentes para el comportamiento de jubilación, junto con los determinantes más tradicionales vinculados al sistema de pensiones. En particular, la vía de jubilación anticipada para la jubilación (véase también Gruber y Wise (1999) o Hairault et al (2010)) del seguro de desempleo es particularmente importante en España. Sin embargo, no existen modificaciones sustanciales del sistema alrededor de 1995 (hasta la reforma de 2011/13) como para justificar un cambio en las tendencias preexistentes.

Uno de los factores clave detrás del aumento de las tendencias del empleo podría ser el fuerte crecimiento de la economía española observado después de la recesión de 1993-1995. Felgueroso y Jiménez-Martín (2009) muestran que la economía española experimentó un período de creación de empleo muy fuerte desde mediados de la década de 1990 hasta 2007, lo que permite que la tasa de empleo general aumente en aproximadamente 20 puntos porcentuales. Esto afectó a todos los grupos de población independientemente de la educación y el género. Las implicaciones de tal período de prosperidad fueron muy importantes. España pasó de la última posición en la tasa de empleo entre la UE15 al nivel promedio, superando a Italia (7 pp), poniéndose al día con Francia (1pp) y reduciendo la distancia a países como Reino Unido, Alemania o Finlandia (-4-6 pp)

Finalmente, otro factor potencial es la acumulación de capital humano (Felgueroso y Jiménez-Martín, 2009). Entre 1996 y 2008, la reducción de la proporción de personas con un bajo nivel educativo en España entre los 40 y 59 años fue de aproximadamente 20 pp (reduciendo así las diferencias generales con otros países de la UE15), lo que puede tener importantes implicaciones para la participación y el empleo de los trabajadores mayores y también para el tipo de trabajos que pueden hacer.

En nuestra investigación, concluimos, primero, que el sistema de pensiones seguridad social ha desempeñado un papel marginal (como máximo) en esta reversión, dada la falta de cambios importantes en el cálculo de pensiones de la Seguridad Social hasta el último conjunto de reformas en 2011 y 2013 (que se espera tengan un impacto sustancial en la oferta laboral de los trabajadores mayores).

En segundo lugar, también descartamos que los cambios en el estado de salud de la población sean responsables de la reversión de esta tendencia. Las tasas de mortalidad a los 60 años han disminuido a un ritmo constante desde la década de 1980 tanto para hombres como para mujeres en España. Sin embargo, no hay cambios en esta tendencia desde mediados de la década de 1990 que podrían ayudar a explicar el cambio en las tendencias de participación de la fuerza de trabajo en ese momento. Del mismo modo, los datos sobre la salud autoevaluada muestran una mejora leve de la salud subjetiva solo a partir de 2006.

Encontramos que el aumento general en el empleo debido al fuerte crecimiento económico observado desde 1995 es uno de los factores que pueden explicar el aumento en la participación laboral y las tasas de empleo de los hombres mayores. Además, las diferencias entre las cohortes tanto en la composición de las habilidades como en la vinculación laboral de las esposas también son factores potenciales de estos cambios observados en los resultados del mercado laboral de los hombres mayores. Encontramos que la proporción de hombres con estudios secundarios o universitarios comienza a aumentar en el mismo momento en que las tendencias de participación en el empleo y la fuerza de trabajo se invierten. De manera similar, en este momento, el porcentaje de trabajadores mayores en trabajos de cuello azul comienza a disminuir.

Finalmente, documentamos fuertes efectos de cohorte en las tasas de participación y empleo de la fuerza de trabajo femenina. En particular, el aumento en la participación de la fuerza laboral, el empleo y el logro educativo de las mujeres coincide con la reversión de la tendencia de los hombres.

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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 or aggregate economic conditions are responsible for the reversal of this trend. Finally, we find that differences across cohorts in both the skill composition and the labor force attachment of wives are potential drivers of these observed changes.

Keywords: labor force participation, Spanish men

JEL-Class: J21, J26, J14

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1. Introduction

The large increase in life expectancy and old age dependency ratios have 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 60-64, but men aged 55-59 and 65-69 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 were being replaced 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 a 28% in 1977 to a 53% in 2014, converging but still not reaching labor force participation rates of men.

Many factors may have contributed to the recent increases in LFP and employment, including changes in the incentives from Social Security and other early-retirement routes like Disability Insurance (DI) or Unemployment Insurance (UI), improving health and longevity, increasing education, a shift towards less physically demanding jobs, and rising female LFP (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 to retirement (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 factor 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 among the EU15 to the average level, overtaking Italy (7 pp), catching up with France (1pp) and cutting the distance to countries like UK, Germany or Finland (-4-6 pp).

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 40-59 has been about 20 pp (thereby reducing the overall differences with other EU15 countries), which 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 factor in explaining the employment trends we have observed 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 both the skill composition as well as increases in the labor force attachment of wives.

The rest of the paper goes 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. Finally 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 55 and 59, those in the age bracket 60-64 and those between 65-69 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 analyzed. Their labor force participation rates were over 80% in the early 1980's, 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 55-59 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 60-64 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 60-64 were stable at the lowest level of the period (40%) until 1999. Fourth, while 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 60-64 slightly decreased during the Great Recession.

Last, for the oldest group of individuals aged 65 to 69, 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 years old. 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 reaches the highest level of the period (10%) and decreasing during the recent economic crisis.

Figure 1. Labor force participation rates for older men in Spain 1980-2014. Age groups 55-59, 60-64 and 65-69.
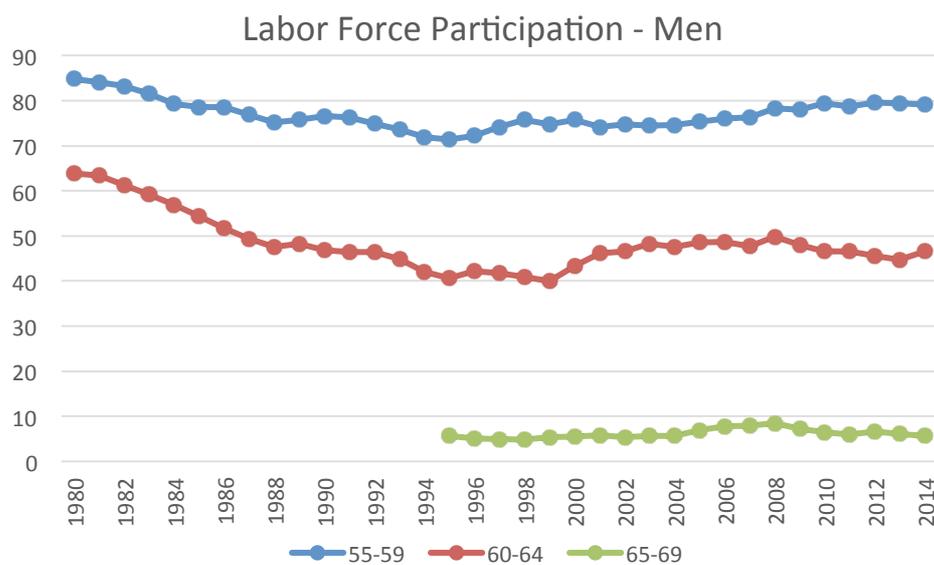
Source: Author's calculations based on OECD data

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%.

Figure 3. Labor force participation and employment rates for men aged 65-69 (1978-2015)
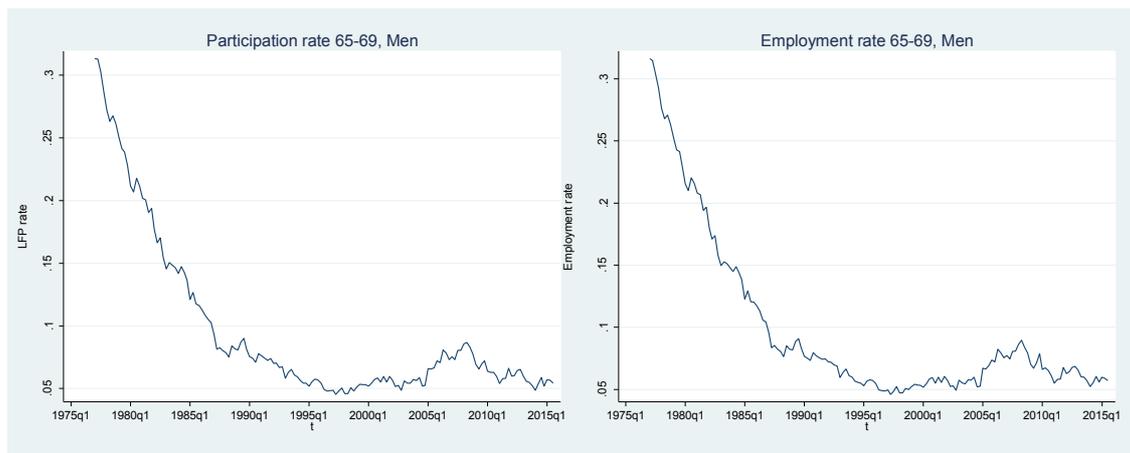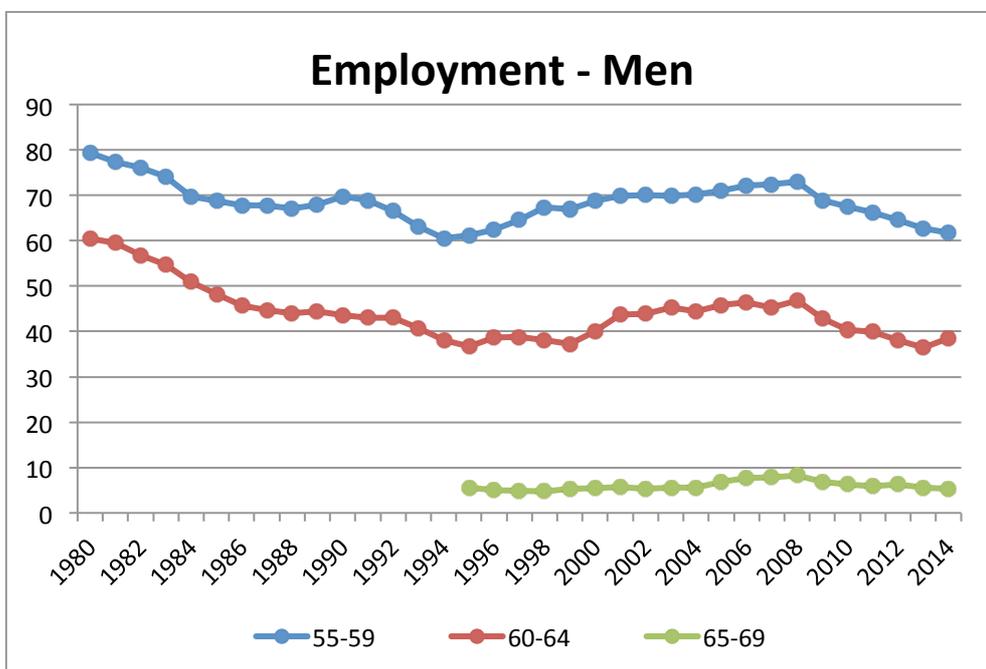

Source: Author's calculations based on data from the Spanish Labor Force Survey

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 65-69 in Spain only stayed active in the labor force in Spain during the last three decades if they remained employed. Similarly, the evolution of employment rates is almost the same than labor force participation rates the group aged 60-64. We can see that their employment rates started particularly high in 1980 (60%) and decreased steadily until the mid-90's when they were below 40%. From the late 90's employment rates of men aged 60-64 increased mildly until the onset of the economic crisis in 2008 which reduced employment rates for men in this

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[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.

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 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.

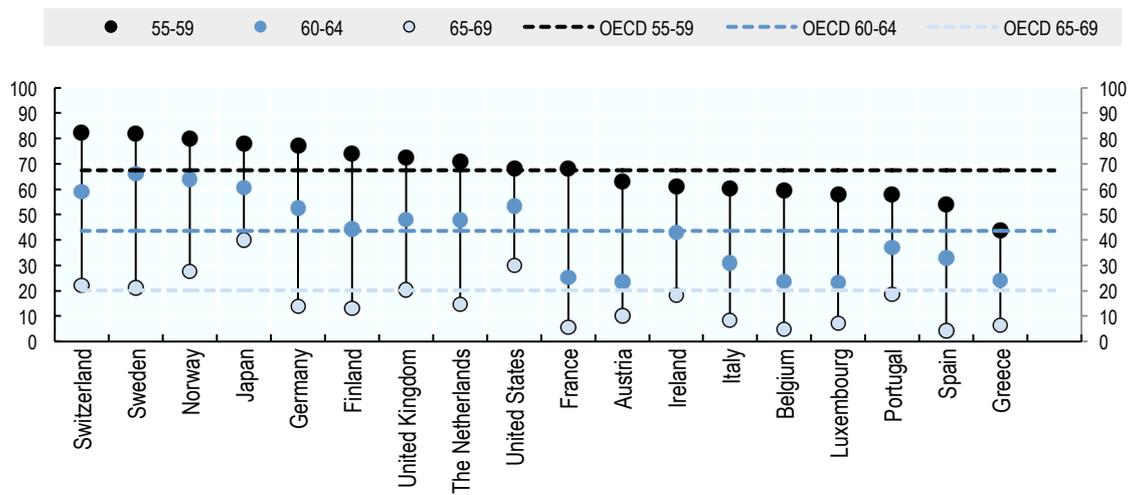Source: Author's calculations based on OECD data

Figure 4 plots the changes in employment rates of older workers (aged 55 to 64) in OECD countries between 2004 and 2014 in order to put the Spanish case into 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 55-64. We can also see that Spain is one of the countries where employment rates for this age group has 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.
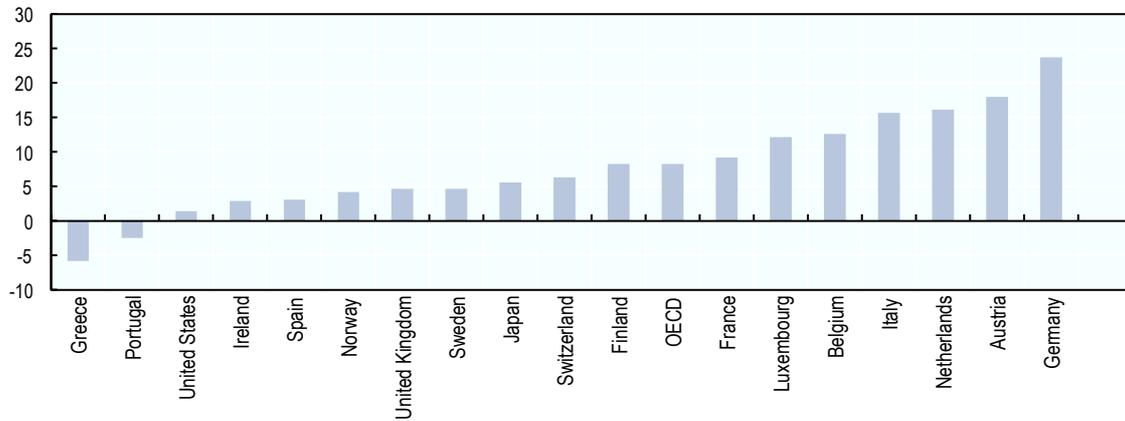
Source: Author's calculations based on OECD (2015) data.

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

Source: Author's calculations 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.
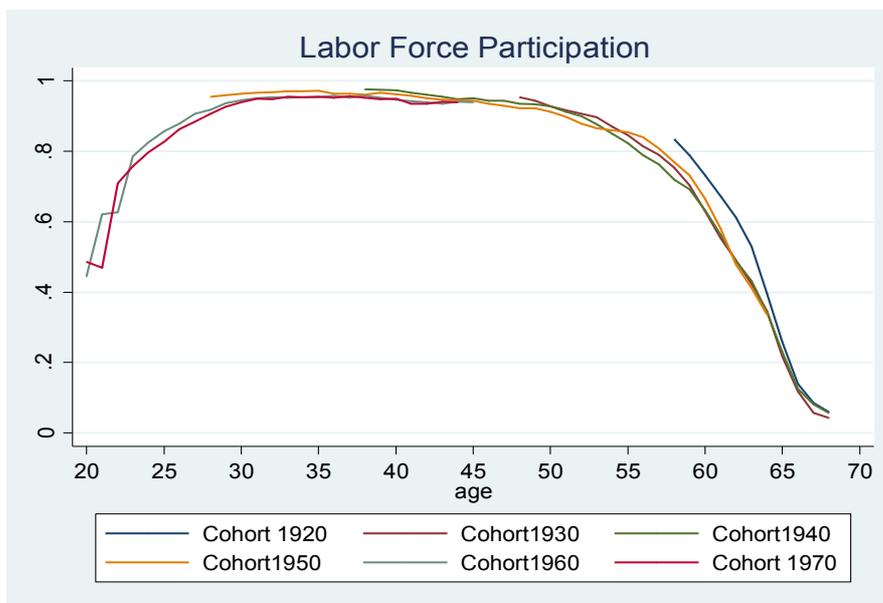
Source: Author's calculations based on data from the Spanish Labor Force Survey

Figure 7. Employment trends for different cohorts of men in Spain.
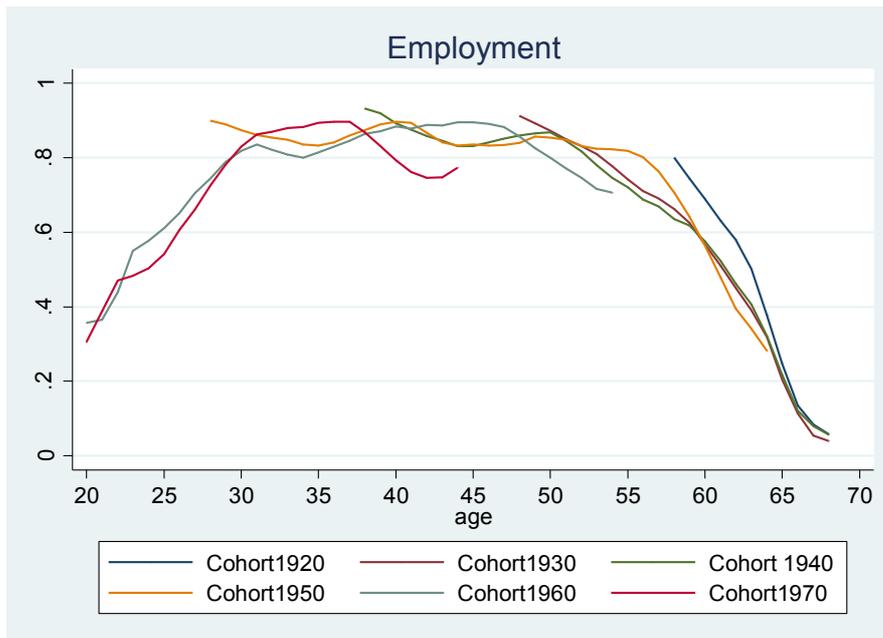
Source: Author's calculations based on data from the Spanish Labor Force Survey

3. Why labor force participation rates for men in Spain are 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]

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

The key elements of the Spanish pension system valid until 2011 were set in 1985. Eligibility to the old-age pension benefits in Spain required having contributed to the system by at least 15

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[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.

years and you can enter the system at the normal retirement age of 65 if the individual does not have any job that requires affiliation to the Social Security system. 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. If the individual enters the old-age system after the normal retirement age of 65, there is an additional percentage that will also be multiplied to the regulatory base. Under the 1985 regime, the regulatory base is obtained by dividing by 112 the wages of the last 96 months before retiring and the percentage applied to this regulatory base is the following.

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

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).

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 60 and 65 was reduced to 7% for individuals with 40+ years of contributions at the time of early retirement

In 2002 further changes in the old-age 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, earlier 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 combining income from work with old-age benefits and the introduction of incentives for individuals to retire after the legal retirement age of 65 (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). At the same time, the possibility to access retirement was extended to individuals who are unemployed for reasons beyond their

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[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, the last 180 months from 2002 onwards.

willingness at sixty-one and who have contributed for at least 30 years and have been registered in the employment office for the previous 6 months.

In 2007 the incentives to retire later than age sixty-five were further increased providing an additional three percent, instead of the two percent agreed in 2002. Moreover, in order to have access to an old-age pension the individual must have contributed for at least two out of the last 15 years and the proportional part related to the extra monthly salaries will not be taken into account when computing the number of contributed years. On the other hand, the 8% penalty applied to early retirees between the ages of 60 and 65 was reduced to 6-7.5%, depending on the number of years contributed, for those individuals with 30 years of contributions. 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 reform have tried to increase labor supply of older male workers, the existing evidence (to be cited) does not show any clear link between these reform and the increased labor supply of older male workers.

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

1985	-Increased the minimum mandatory annual contributions 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 for the replacement rate 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. -Increase contributions made by the social security administration for individuals receiving the special scheme of UA for 52+ (they will receive a higher old-age pension when retiring).
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 arise 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 in 2011 a reform of the pension system. In this reform two crucial elements were changed: the extension of the number of years of contributions taken into account to calculate the pension, and the increase in the retirement age (from 65 to 67, gradually).[4] 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 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.[5] 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 the 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 the Spanish pension system. However, some recent studies continue to think it is clearly insufficient (see for example Díaz-Giménez and Díaz (2016) and Sánchez-Martín (2014)) from a financial point of view.

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

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 (Conde-Ruiz and Gonzalez, 2014). Therefore, it was an attempt of the government to ensure that its short- and long-term social security finances are under control. The Sustainability Factor can be seen as a mechanism that transforms a defined benefit scheme, such as that operated by Spain, to a defined contribution scheme.[6]

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.

The SF 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% (that is, frozen, though seeking to generate a certain degree of monetary confidence) and by no more than the annual changed in the CPI + 0.25%.[7]

In summary, the 2011/2013 pension reform 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 Sánchez-Martín (2014 and 2016)), however it is still too early to fully detect their implications in data.

[6] See, in this regard, http://www.fedeablogs.net/economia/?p=32680.
[7] See Sánchez-Martín (2014 and 2016) 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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3.1.5. Other routes into early-retirement

Another factor that may affect the labor market behavior of older workers are disability and unemployment insurance policies. Both the main characteristics of the disability system as well as its main reforms are extensively documented in Garcia-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, the 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 (Jimenez-Martin et al. 2016). 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.

Figure 8. New contributory disability benefits granted each year and unemployment rate. Years 1977-2014.
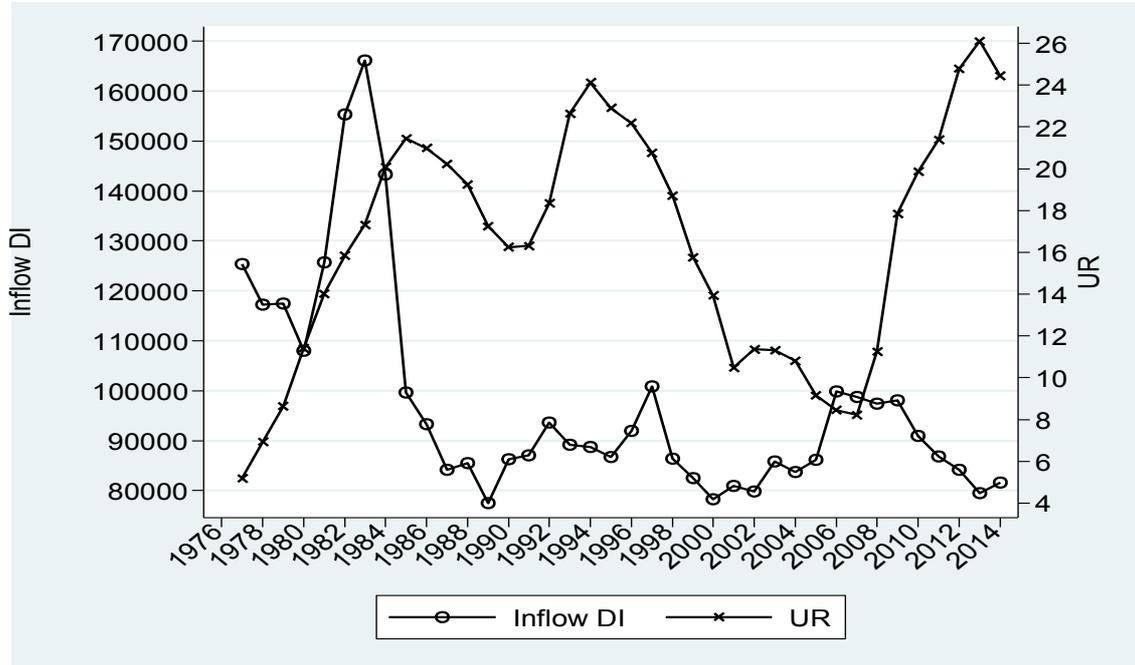
Source: Inflow to DI: Spanish Social Security Administration; Unemployment Rate: Spanish National Institute of Statistics.

Finally, between 1995 and 2011 there was a special unemployment scheme for those workers 52+ (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 older than 55 (UB55+).

The benefit amounts in 2016 was 426 or 80 percent of the IPREM. It 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 the 2011 the system assigns a fictitious contribution that amounts 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 Sanchez (2015)) illustrates that UB52 or UB55 limit 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). 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 that rate their general health as fair or poor.

Figure 9 plots mortality rates at age 60 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 got narrower 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 declares themselves to be in fair or poor health at ages 55-64 in Spain. We see that, even if mortality rates at age 60 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) showed that the percentage that reports having 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 the older workers in Spain.

Figure 9. Mortality rates at age 60 for men and women in Spain.
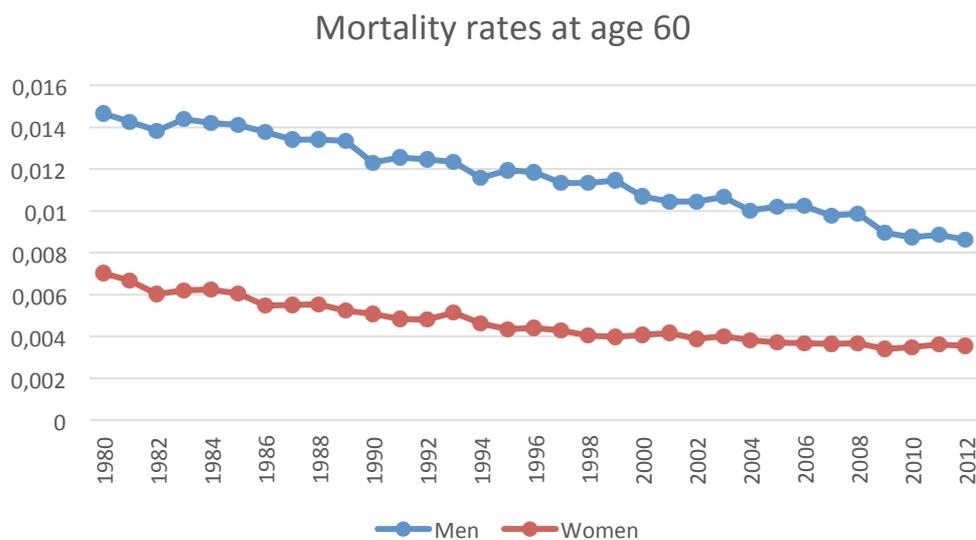
Source: Own elaboration using data from the Human Mortality Database.

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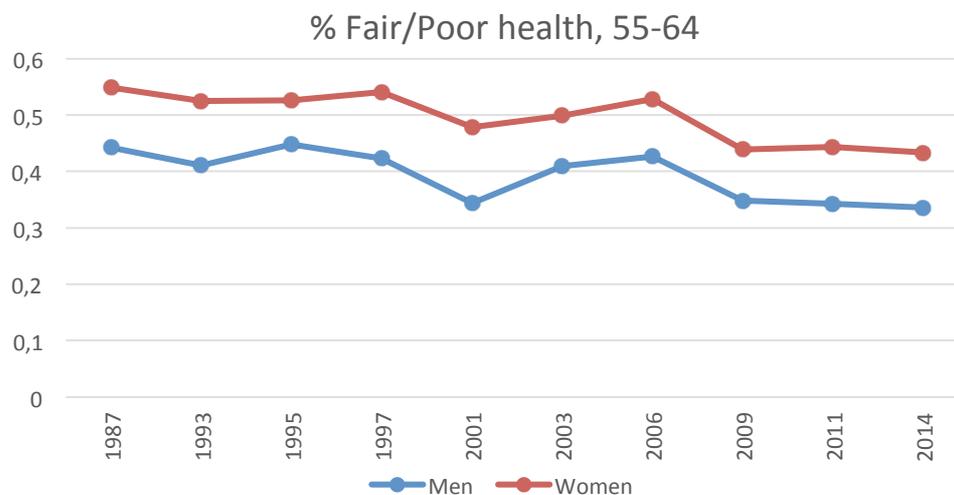

Source: Own elaboration using data from the Spanish Health Survey.

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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 of 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 55-64 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 55-64 had completed a high school degree (and only 3% had college education), in 2014 41% of men aged 55-64 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 coincided with the arrival of more educated cohorts.

A similar evolution can be observed for the percentage of Spanish men who had 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 decreasing from 70% until a level below 60%. Again, this confirms that changes in the skill level of the 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.
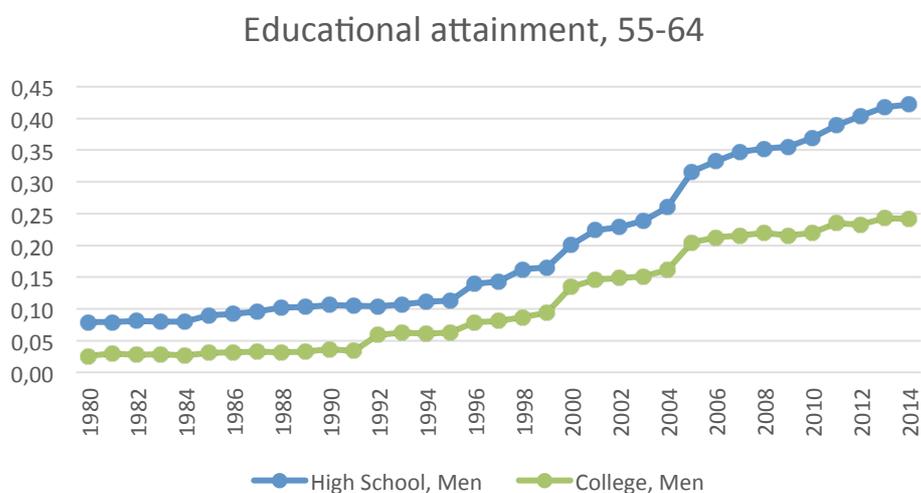
Source: Own calculation from the Spanish Labour Force Survey.

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

% Blue Collar Jobs
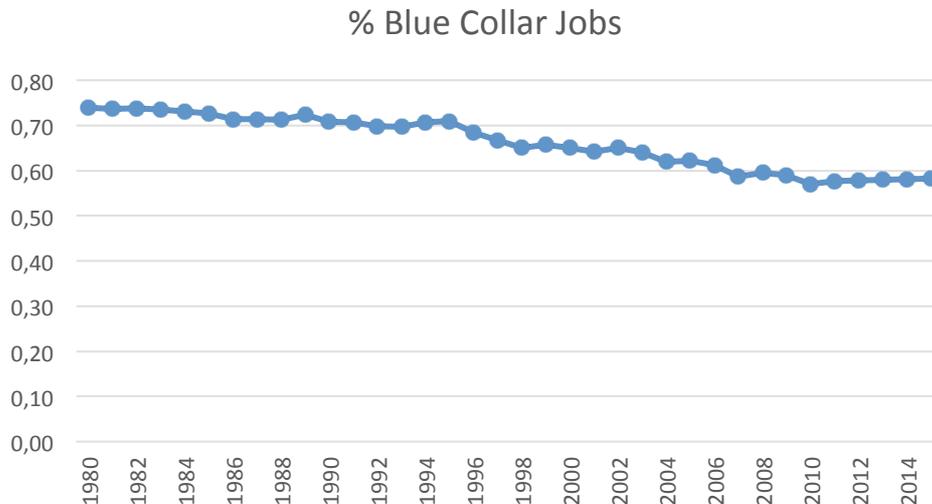
Source: Own calculation from the Spanish Labour Force Survey.

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 55-64 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 of the older workers are always lower. [8] A similar picture, although at even higher levels until the onset of the economic crises is found for the unemployment rate of women aged 16-64. However, trends of unemployment rates of women aged 55-64 present a different pattern at 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 1995 as we can see 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.

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

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

Unemployment rate
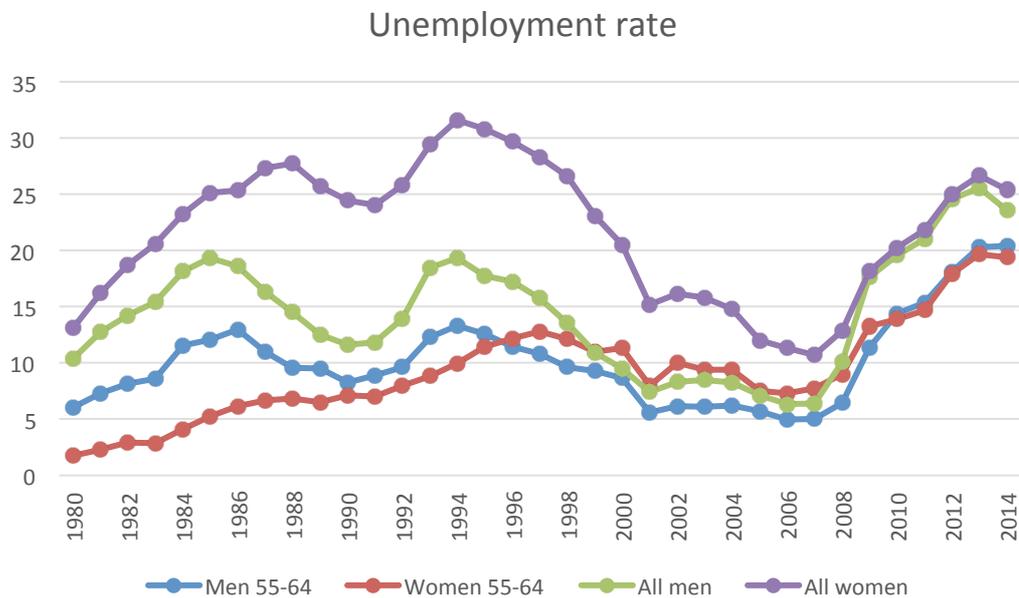
Source: Own elaboration using OECD data.

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.

Real average wages
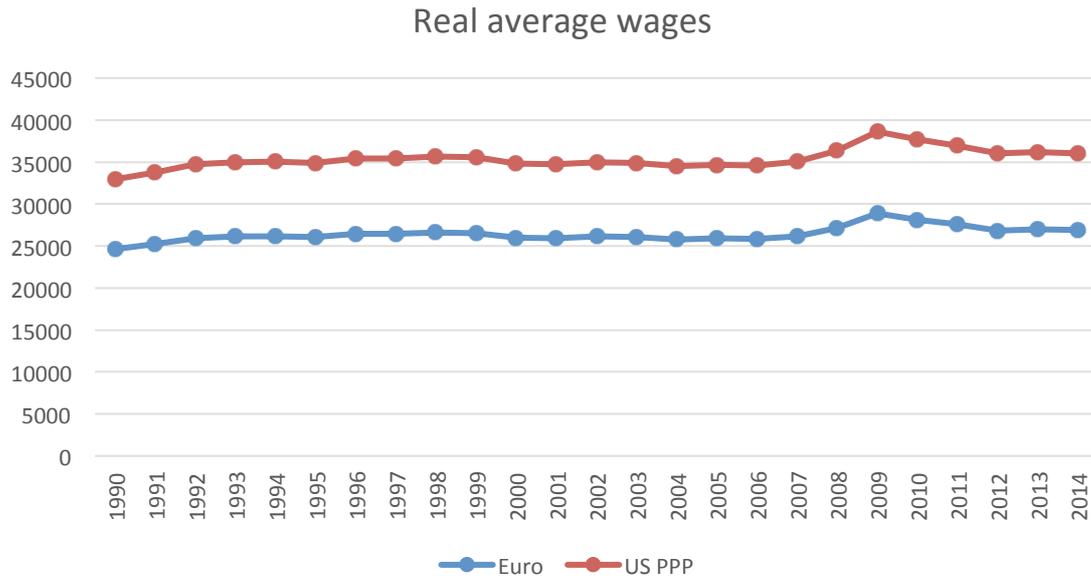
Source: Own elaboration using OECD data.

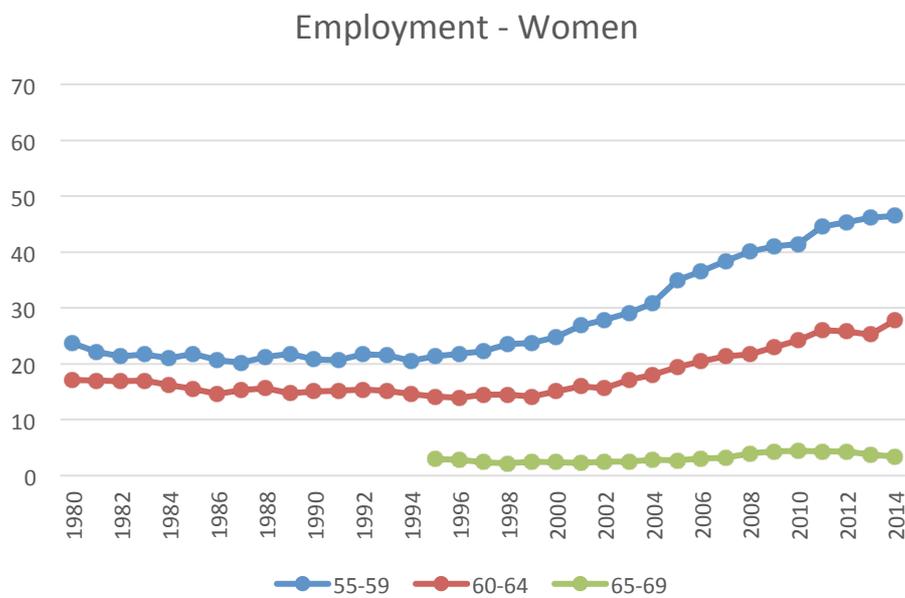### 3.5. Employment and labor force participation of spouses

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 55-59 and 16% for women aged 60-64 until the mid-1990s. Similar to the trends observed for men, we find that participation rates of women aged 55-59 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 55-59 are in the labor market, although only about 45% of them are employed. Last, we find that both labor force participation and employment rates of women aged 65-69 have remained low between 2.5% and 4% between 1995 and 2014. This is similar to the trends observed for men in this age group.

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

Labour Force Participation - Women
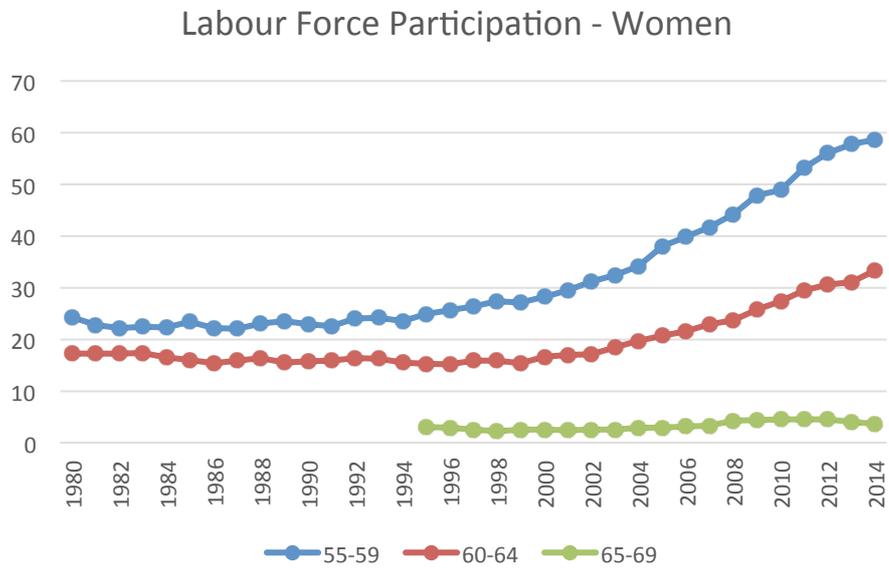
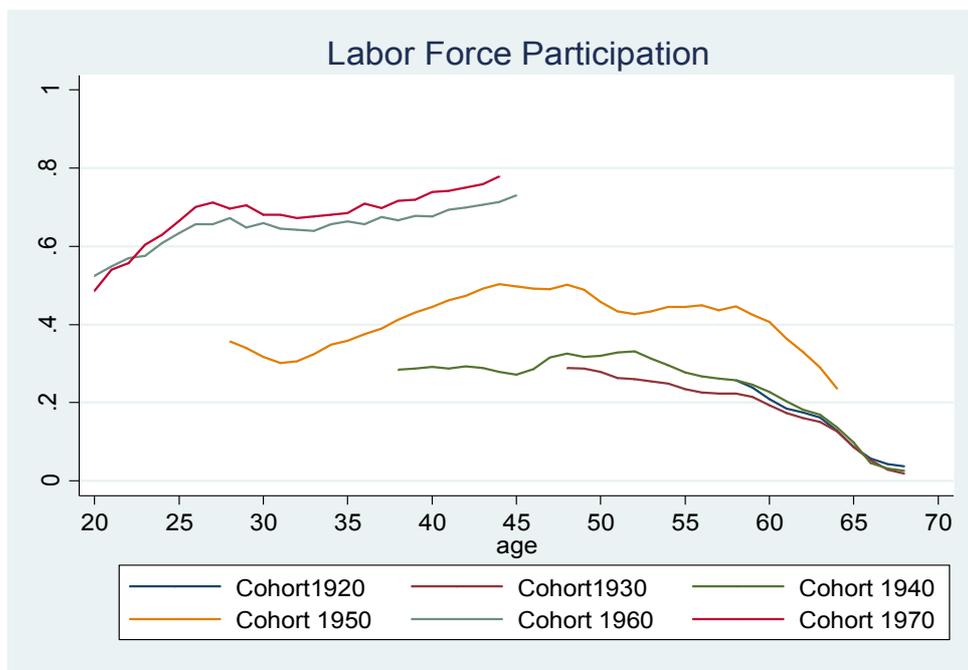Source: Own elaboration using OECD data.

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

Employment - Women

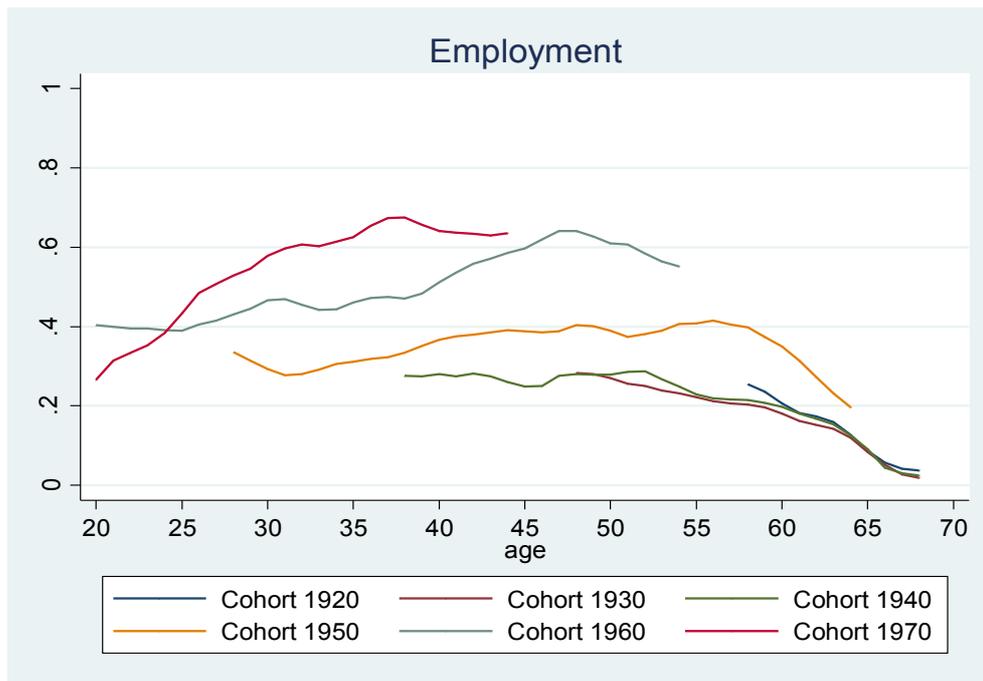Source: Own elaboration using OECD data.

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.

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.

Employment

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

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 35-44, 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 55-64 was steadily increasing since the early 1990s, and this increase has become steeper over the last decade.

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

20 years lagged LFP of women at 35-44
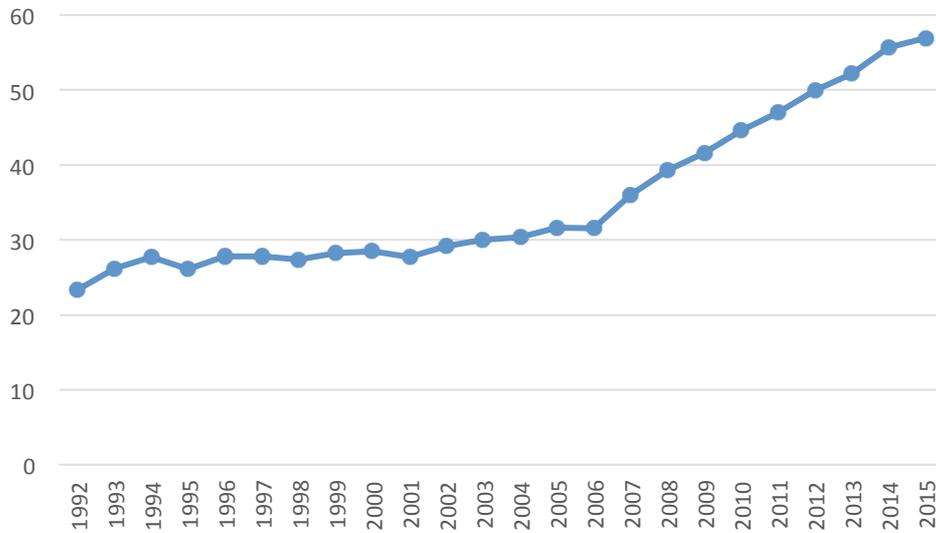
Source: Own elaboration using data from the Spanish Labor Force Survey.

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, trends in Figures 10 and 20 show that these trends move almost in parallel, although both the percentage with high school and college have been so far always lower for women aged 55-64 compared to men aged 55-64.

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

Educational attainment, 55-64
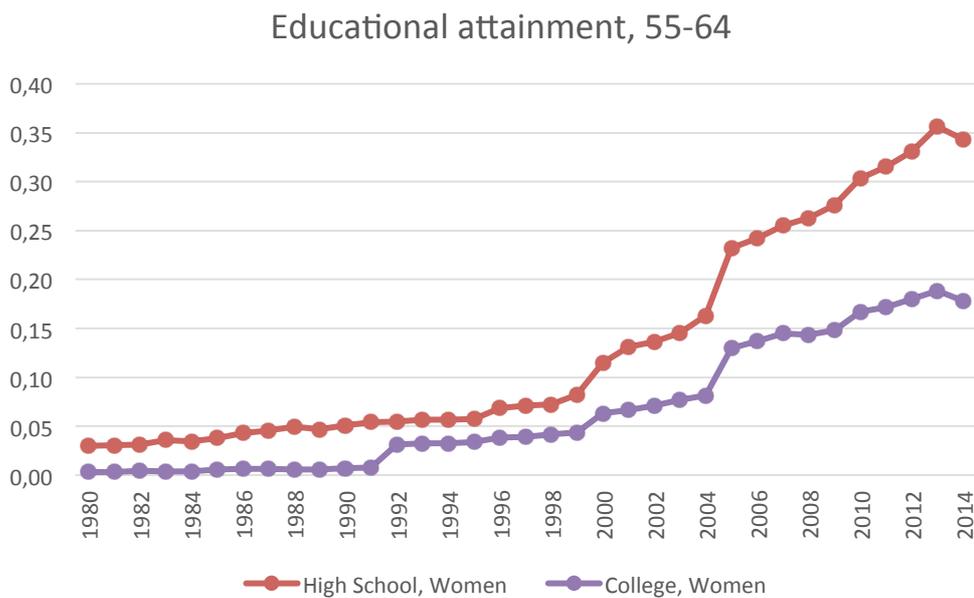
Source: Own elaboration using data from the Spanish Labor Force Survey.

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 (that are expected to have a substantial impact in labor supply of older workers). However, one cannot rule out that higher uncertainty over time about future benefits may have 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 observed 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		