

Economic Watch

Spain

Madrid, 20 November 2012
Economic Research

Spain

Rafael Doménech
r.domenech@bbva.com

Juan Ramón García
juanramon.gl@bbva.com

The need to extend working lives in the Spanish economy¹

- **Labour market participation by older workers in Spain is low compared with the OECD average due to the lower employment rate of these workers**

- **Several factors affecting labour supply and demand explain the lower rates of labour market participation and employment for older people in Spain compared to OECD countries**

Some of the most important supply-side factors are Spain's less-skilled workforce, the combined effect of inefficient regulations governing early retirement and a relatively generous benefits system, and a tax structure that raises the opportunity cost of older people remaining employed.

Factors shaping labour demand jobs include the inflexibility of contracts and remuneration conditions imposed by labour laws and the inefficiency of the active employment policies aimed at promoting active ageing.

- **Two reasons play in favour of extending working lives in Spain. First, the negative effects on the sustainability of the pension system of ageing and the delayed entry into the labour market due to more years of schooling. Second, the positive effects on youth employability and the cognitive performance of older people**

- **To encourage older people to remain in the job market, concerted actions are required to remove obstacles limiting labour supply and demand**

Changing the pension calculation rules to delay the retirement age, addressing the lack of incentives caused by ceiling limits on pensions, fostering continuous training and the professional retraining of older employees as an activation strategy, making labour relations more flexible through flexible retirement policies, focusing on performance-related payments instead of seniority payments and raising awareness among the general public of pension regulations (eligibility and amount) are some of the measures that could help to extend working lives.

¹: We would like to thank Miguel Cardoso, Mónica Correa, Félix Lores, Antonio Marín, Pep Ruiz, Juan Ruiz-Sánchez and Camilo Ulloa for their comments and suggestions. This work was presented at the UIMP course "Active ageing and extending working lives", held in Santander on 10 July 2012.

1. Introduction

Over the past five decades, the labour market participation of people older than 55 in Spain has been lower than the average for developed countries due to the country's lower employment rate². Therefore, the percentage of older people in work today in Spain (44.5%) is ten points below the OECD average despite the increase witnessed since the mid 1990s.

What reasons are behind the lower employment rate for older people in Spain? Available information indicates that there are factors affecting the supply and demand for work which condition the relationship between older people and the labour market. The most significant factors restricting work opportunities for older people include:

- their relatively lower qualifications, which means that they are more unlikely to keep their jobs, and the opportunity cost of leaving the labour market;
- the perverse incentives generated by the combination of inefficient regulations governing early retirement and a generous unemployment benefits system; and
- a tax regime that does nothing to encourage older people to remain in work as it reduces the benefits of extending their working lives.

Obstacles affecting demand for older workers include rigid labour regulations (in terms of both contracts and wages), which increase the relative cost of employing older people, and the shortcomings of the active employment policies implemented to encourage active ageing.

What consequences do lower labour market participation and lower employment among older people have? Firstly, all the demographic forecasts carried out by solvent institutions (INE,³ Eurostat,⁴ OECD,⁵ United Nations,⁶ etc.) suggest that the continuous ageing of the Spanish population seen over the last 50 years will continue for the next 50 years, which, coupled with the gradual delay in the age of labour market entry is jeopardising the sustainability of the public pension system. Even if Spain's employment rate rose into line with the EU15 average, the net sustainability index -i.e. the ratio of contributors to the pension system to pensioners- would barely be above 1 in 2050, half the current level.

Secondly, extending working lives would have positive externalities both for the rest of the population and for the older people who remain in work. International empirical evidence indicates that on aggregate, older and younger workers complement each other; i.e. one does not replace the other. This undermines the idea that workers close to retirement age remaining in work make it more difficult for young people to join the labour market. Furthermore, active ageing has a positive effect on the cognitive performance of older workers. It has been proved that extending working lives offers protection against dementia and delays the onset of Alzheimer's disease in sufferers.

What measures could encourage older people to remain in the labour market for longer? Changing the pension calculation rules to put back the retirement age, addressing the lack of incentives caused by ceiling limits on pensions, fostering continuous training, and making the relations between older workers and companies more flexible, etc. are just some of the measures put forward in Section 5 of this report.

The remainder of this Economic Watch has the following structure. Section 2 describes labour market trends for older people in Spain over the last few decades in comparison with the OECD as a whole. Section 3 analyses labour supply and demand factors that affect the participation of older people in the job market, focusing on those factors that make it difficult to extend their working lives. Section 4 lists the reasons why it is desirable to extend working lives in Spain.

2: Labour market participation (or the activity rate) of a population group is the sum of the percentage of employed people (employment rate) and unemployed people within this group.

3: <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft20%2Fp251&file=inebase&L=0>

4: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Population_projections

5: <http://www.oecd-ilibrary.org/content/data/data-00538-en>

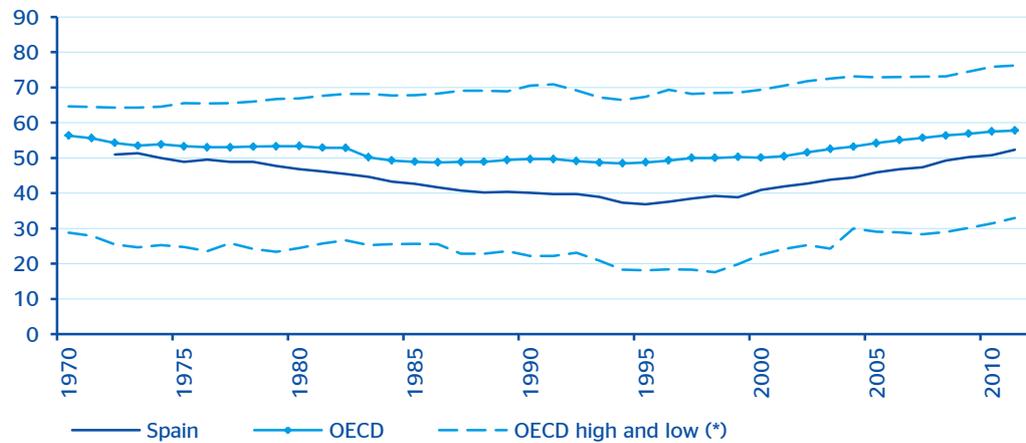
6: <http://esa.un.org/unpd/wpp/index.htm>

And lastly, Section 5 puts forward some economic policy recommendations based on the conclusions obtained from the analyses made in the previous sections.

2. The labour situation of older workers in Spain

The labour market participation of older workers in Spain, i.e., aged between 55 and 64, has traditionally been lower than the OECD average (see Chart 1). While the activity rate for workers nearing retirement age has increased by more than 10 percentage points (pp) since the mid 1990s, it is still a long way off the rate seen in those countries which rank highest in the OECD classification (New Zealand, Sweden and Switzerland).

Chart 1
Activity rate of population aged 55 - 64 (%)



(*) Excluding Iceland
Source: BBVA Research based on OECD data

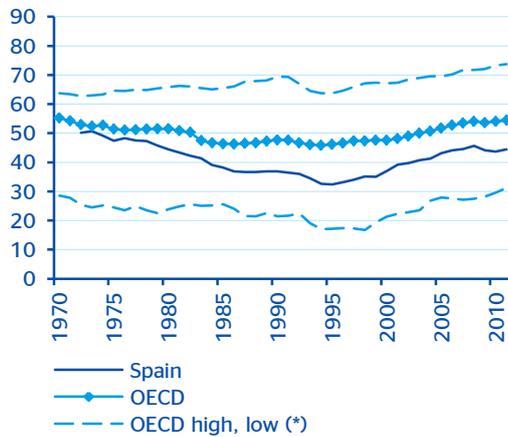
The low employment rate explains the lower labour market participation of older people in Spain (Chart 2). Since the 1970s, the percentage of older workers fell by 17.8pp to 32.4% in 1995, 13.8pp lower than the OECD average. The improved economic climate following the recession in the early 1990s led to a sustained increase in the number of older people in work, rising to 45.6% in 2008, 8.4pp lower than the OECD average. Given its correlation with the economic cycle, from 2009 this figure declined in line with the worsening in Spanish labour market.⁷

In contrast, unemployment among older people in Spain is relatively high. The proportion of unemployed people aged between 55 and 64 in Spain has been higher than the OECD average since the second oil shock in the late 1970s (see Chart 3). The difference is smaller during expansive periods and becomes wider during times of economic contraction (particularly the current crisis), reflecting the higher elasticity of Spanish labour market indices to economic growth.⁸

7: Overall, the impact of the economic cycle on the employment rate for workers nearing retirement age is lower than for the population as a whole. This is due to both institutional characteristics of the labour market which benefit older workers (fewer temporary contracts, increased bargaining power, high redundancy costs, etc.) and individual characteristics (greater experience).

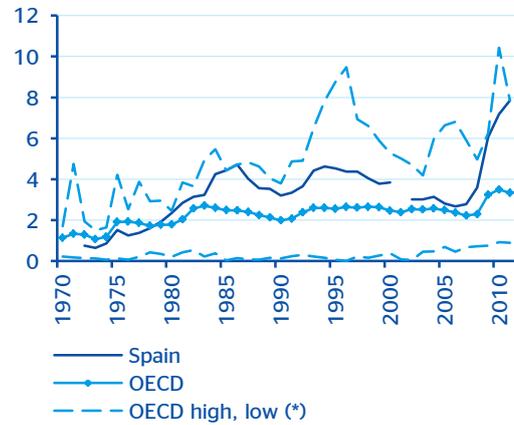
8: See IMF chapter 3 (2010).

Chart 2
Employment rate of population aged 55 - 64(%)



(*) Excluding Iceland
Source: BBVA Research based on OECD data

Chart 3
Unemployment rate of population aged 55 - 64 (%)



(*) Excluding Iceland
Source: BBVA Research based on OECD data

3. Factors determining activity and employment rates for older people

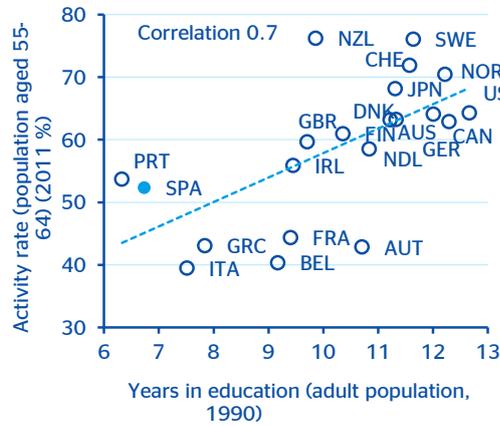
Why are activity and employment rates for older people in Spain traditionally lower than the OECD average? The reason lies in two types of factors: those that affect labour supply and demand.

Factors relating to labour supply

Firstly, the differences in activity, and especially employment rates for older people, between countries is a reflection of the differences in human capital. Given the positive correlation between a worker's qualifications, the stability of their job, their productivity and their remuneration, the probability of a worker losing their job decreases, and the cost of withdrawing from the labour market rises, when their human capital increases.

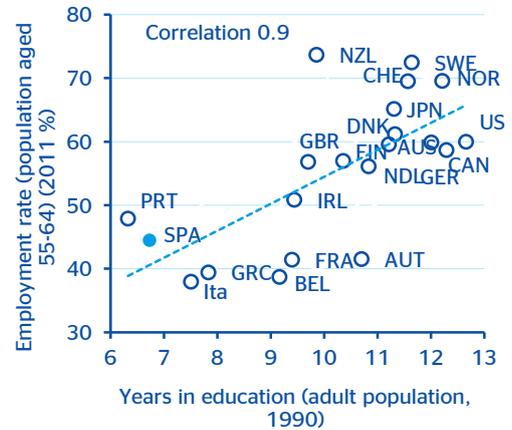
Charts 4 and 5 show the relation existing between the level of qualification held by the population of a country during the central period of its working life (measured as the average number of years of education received by the adult population) and the rates of activity and employment when approaching retirement. We can see how in Mediterranean countries like Spain, whose workforces are characterised by lower human capital, show relatively low labour market participation and employment rates among the older population.

Chart 4
Activity rate of population aged 55 - 64 and level of education (%)



(*) Excluding Iceland
Source: BBVA Research based on OECD and de la Fuente and Doménech data (2012b)

Chart 5
Employment rate of population aged 55 - 64 and level of education (%)



(*) Excluding Iceland
Source: BBVA Research based on OECD and de la Fuente and Doménech data (2012b)

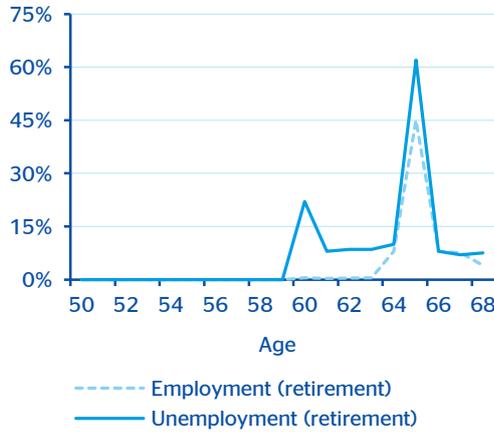
Secondly, the regulations governing early retirement deter older unemployed people from looking for work. Based on data from the 2009 Continuous Work History Sample (Muestra Continua de Vidas Laborales), García-Pérez, Jiménez-Martín and Sánchez-Martín (2010) demonstrate that early retirement is mainly arrived at from a position of unemployment. As illustrated in Chart 6, the probability of an employed worker taking early retirement before the official retirement age of 65 is practically nil; while the probability of an unemployed worker taking early retirement increases from age 60, when early retirement may be taken if certain conditions⁹ are met.

Empirical evidence suggests that the combination of inefficient regulations governing early retirement and the comparatively long period of receiving unemployment benefits give rise to a moral hazard dilemma as this discourages people from seeking employment until their benefits expire and encourage them to retire at the minimum legal age. Thus, García-Pérez and Sánchez-Martín (2010) show that older unemployed workers tend to receive unemployment benefits (or subsidies) for the period up until they are able to take early retirement.¹⁰

9: With some exceptions, workers may take early retirement from age 61 if they have lost their job involuntarily, can demonstrate that they have been paying social security for a minimum of 30 years and have been registered as unemployed for a minimum of six months prior to applying for retirement. Members of mutual entities who have paid contributions prior to 1 January 1967 are entitled to apply for early retirement from the age of 60. These requirements will become more stringent from 1 January 2013, when Law 27/2011, of 1 August, on updating, adaptation and modernisation of the Social Security System comes into force. See section 4 for more details.

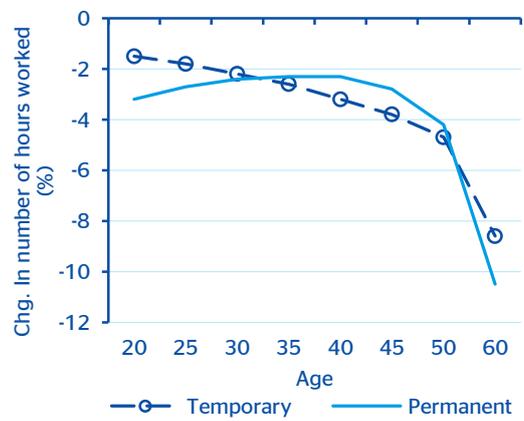
10: Note that this strategic behaviour is not specific to Spain. Countries with a similar institutional structure, such as Germany and France, also show similar trends, as demonstrated by Gruber and Wise (2010).

Chart 6
Spain:
quarterly rate of transition from employment and unemployment to retirement by age* (%)



(*) Probability of a worker retiring, by age, conditional on being in employment (or unemployed) until that time.
Source: BBVA Research based on García-Pérez, Jiménez-Martín and Sánchez-Martín data (2010)

Chart 7
Impact of an unexpected 5% tax increase on the number of hours worked by age (%)



Source: BBVA Research based on Imai and Keane (2004) and Keane and Rogerson data (2011)

Lastly, the tax structure could be negatively affecting the labour supply among older people. It is well-known that higher income tax pressure negatively affects decisions to participate in the labour market, and the number of dedicated working hours, especially in the case of women¹¹. Additionally, the effects of changes in taxation on the labour supply among older people are comparatively significant, as the present value discounted from the economic return deriving from increasing (or reducing) working hours, and therefore, the effect of changes in taxation, is lower than in the case of younger people; i.e. in the event of a tax increase, the probability of an older worker reducing their working hours is greater than that of a younger worker reducing their working hours, as the present value of the income loss caused by this reduction is less (see Chart 7). The simulations carried out by Imai and Keane (2004) and Keane and Rogerson (2011) demonstrate that the elasticity of labour supply to changes in the taxation rate increases when the worker approaches retirement age. In particular, an increase of 5% in the tax rate reduces the number of hours worked by employees aged 20 by around 2% compared to 9% for 60 year old workers.

Factors relating to labour demand

In addition to the supply factors that affect an older worker's commitment to the labour market, there are factors which impact the demand for these workers by companies. These include labour market regulations and incentives to keep older workers in employment and provide training.

While firms are in favour of active ageing in companies (see Chart 8), the inflexible contracts and wage structure imposed by the legal framework governing labour relations make it difficult for older people to participate in the labour market. Specifically, the high costs of terminating a permanent contract deter companies from keeping workers on under this type of agreement¹². As pointed out by Tobes et al. (2007), commercial contracts and contracts of a specified length are considered by companies to be the best way to encourage older workers to stay in employment.

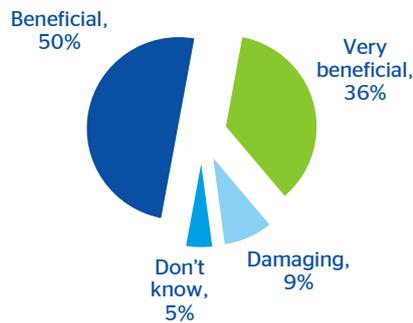
11: See Prescott (2004) for a comparison between Europe and the US and Labeaga and Sanz (2001) for an analysis of Spain.

12: The amount of severance pay also affects the supply of labour as it can discourage workers who have lost their jobs and are close to retirement age from seeking to return to the labour market.

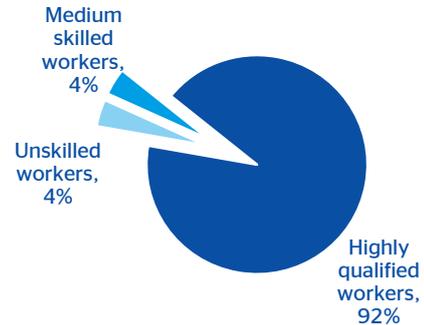
Further, a remuneration system like Spain's, where seniority plays a major role in the wages paid,¹³ does not benefit workers close to retirement age, as they become less productive as their cognitive performance deteriorates. However, this decline in cognitive performance is uneven. Skirbekk (2004) demonstrates that employed workers who carry out tasks based on experience and verbal skills maintain a relatively high productivity level. In fact, these are workers that a company is most interested in keeping, as shown in Chart 8 (rhs).

Chart 8
Spain: extending working lives at the company (% of replies)

Opinion on active retirement at companies



Professional category of older workers that companies are interested in retaining



Source: BBVA Research based on Tobes *et al.* (2007)

Active employment policies are also contributing to extending the labour relationship between companies and older workers. Although the incentives to subsidise employers' social security contributions¹⁴ have done little to encourage maintaining the jobs of older workers - 78% of the opinions of HR heads collected by Tobes *et al.* (2007) consider that the fiscal incentives implemented for this purpose are inefficient - while public and private continuous training policies do encourage older workers to remain in the labour market. This is because continuous training helps older workers to adapt to new forms of work, reducing the deterioration of their human capital and hence their productivity.

4. Why should working lives be extended?

A low employment rate for older workers in itself would not pose a social or economic problem if demographic and labour prospects were bright and if the overall economic implications were positive, or at least benign. That said, because of the ageing of the population and its impact on the sustainability of the social protection system, not to mention the positive externalities of active ageing, older workers must become more committed to the labour market. In the next section we look at the factors explaining why working lives should be extended in Spain.

13 According to the Salary Structure Survey carried out by INE, seniority bonuses account for around a quarter of the monthly gross wage of a salaried worker in Spain. Additionally, according to Simón (2009) Spain is at the head of Europe in terms of seniority-related wages, which goes a long way to explaining the considerable salary differences in the Spanish economy.

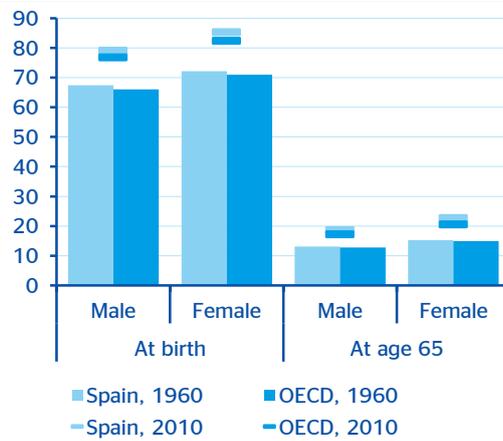
14 Note that the Sixth Transitional Provision of Royal Decree-Law 20/2012 eliminated the entitlement of companies to incentives for hiring and maintaining employment and fostering self-employment (with some exceptions) from 14 July this year.

Ageing, working lives and the (un)sustainability of the pension system

Over the past five decades, life expectancy in Spain has increased by roughly three months per year, slightly above the OECD average. The increase in life expectancy at 65 years old accounts for about half of the increase of 13.1 years in female life expectancy at birth (11.7 years for males) between 1960 and 2010 (see Chart 9).

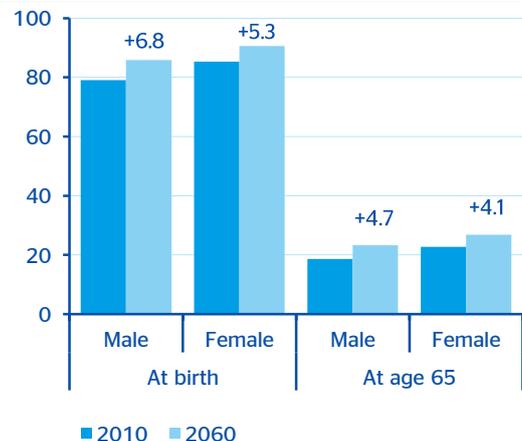
Longevity looks set to continue increasing consistently over the next five decades, especially among the elderly population. Life expectancy at birth in Spain is projected to increase by around a year per decade (see Chart 10); three-quarters of this increase will be in life expectancy at age 65, which should rise from barely 20 years in 2010 to over 25 years by 2060 (26.8 years for women and 22.3 for men).

Chart 9
Spain vs. OECD*: Life expectancy from 1960 to 2010 (years)



(*) Simple average
Source: BBVA Research based on OECD data

Chart 10
Spain: projected life expectancy (years)



Source: BBVA Research based on Eurostat and OECD data

The extension of inactive lives coincides with the sustained reduction in active lives. There are no long series or comparable country data on the delayed start of employment, although we can approximate this by the number of years of education of the adult population. As Chart 11 illustrates, the average educational attainment of the adult population in Spain doubled in the 1960-2010 period to 9.4 years, approaching the OECD average (11.8 years). Nonetheless, Spain is still low in the ranking of developed economies, alongside Portugal (8.9 years), Italy (10.0) and Greece (10.1).

Judging by trends in other developed countries, which achieved Spain's present level of education earlier¹⁵, we can conclude that the years of educational attainment will increase by between 0.6 and 1.2 years per decade, raising the age at which Spaniards join the labour market by between 2.8 and 6.2 years over the next five decades.

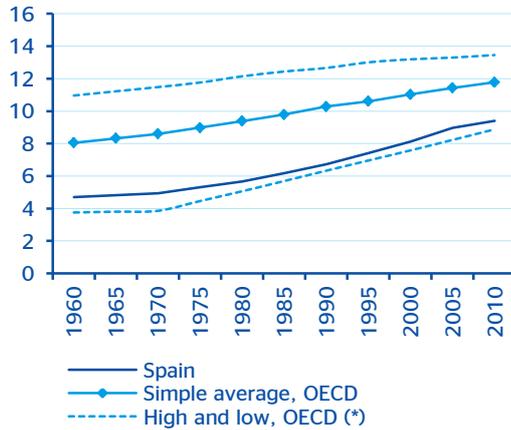
The two factors -increased longevity and delay in age of labour market entry- raise questions about the future sustainability of Spain's public pension system. The gross sustainability index - the number of people of working age per person over 65- has been cut in half over the past 50 years, ending 2011 at 3.6. Assuming reasonable demographic projections¹⁶, this ratio

15: Italy over the last decade; Belgium, France and Ireland in the first half of the 1990s; New Zealand and the UK in the second half of the 1980s; Finland at the beginning of the 1980s; the Netherlands at the end of the 1970s; Japan and Sweden in the first half of the 1970s; Austria in the mid 1960s; Germany (FDR) in the 1950s; etc.

16: See OECD (2011b).

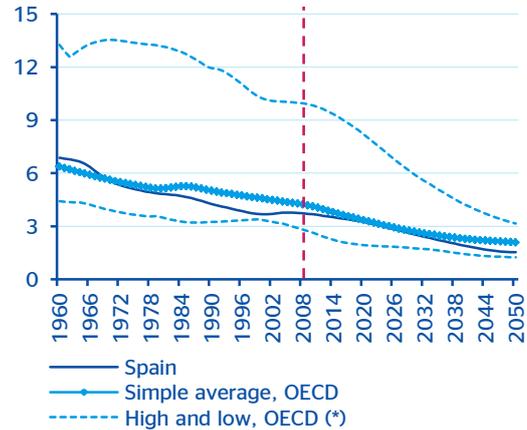
should continue to fall by 0.5 points per decade over the next 40 years, in line with the overall average for developed countries (see Chart 12).

Chart 11
Average years of education
in adult population (25 or more years)



(*) Excluding Iceland
Source: BBVA Research based on de la Fuente and Doménech data (2012b)

Chart 12
Sustainability index (population
between 20 and 64/65 years and older, %)



(*) Excluding Iceland
Source: BBVA Research based on OECD data

Considering that only a fraction of the working age population actually works, the outlook is even more worrisome. Even if Spain's employment rate rose to the EU15 average¹⁷, the country's net sustainability index -i.e. the number of contributors to the pension system for pensioner- would barely be above 1 in 2050, half the current level¹⁸.

In view of expected demographic changes and the outlook for the labour market and economic growth, the reform to the Spanish pension system in 2011 was inevitable¹⁹. Law 27/2011 brought four new measures, among others, that should be adopted gradually between January 2013 and December 2027:

1. Progressive increase in the normal pensionable age to 67 years, except for people who can accredit having contributed for 38.5 years.
2. Increase in the years of contribution for pension eligibility, barring certain exceptions, from 15 to 25 years.
3. Increase in the years of contribution required to obtain 100% of the regulatory base to 37 years; for this, the percentages applied to the regulatory base for calculating the pension have been modified.
4. Stricter early retirement requirements. When workers loses their jobs through no fault of their own for economic reasons, they may retire at 61 if they accredit at least 33 years' contribution (three more than before the reform came into effect) and at least six months as a registered jobseeker. When workers give up their jobs voluntarily, they must be at least 63 years old and have contributed for 33 years, and the resulting benefit cannot be lower than the minimum²⁰.

17: The employment rate of Spaniards between the age of 20 and 64 was 51.6% in 2011, compared to the EU15 average of 69.7%.

18: At the end of 2011, there were 2.1 working contributors in Spain for every pensioner.

19: Law 27/2011, of 1 August, on updating, adaptation and modernisation of the Social Security System, available at:

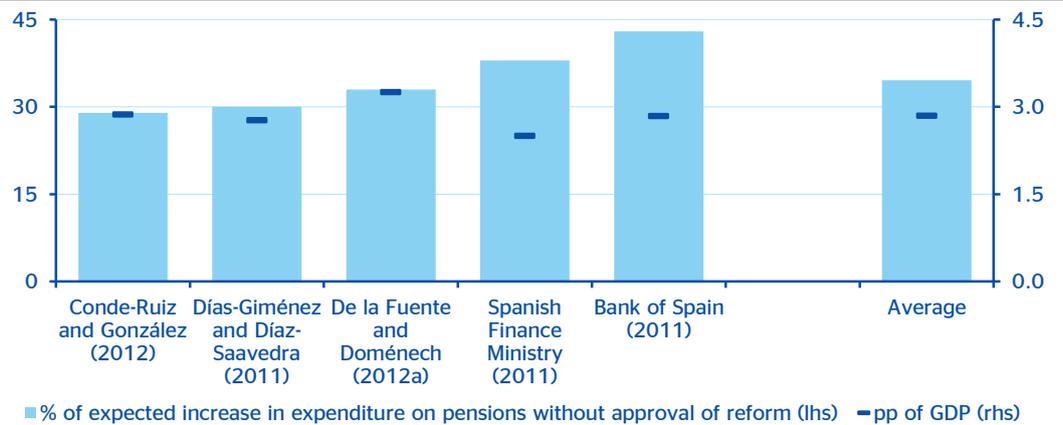
<http://www.boe.es/boe/dias/2011/08/02/pdfs/BOE-A-2011-13242.pdf>

20: Given the current and expected imbalance in the Social Security system, the changes included in the reform could well be adopted earlier.

The saving in the long run brought about by the reform could be approximately 35% of the expected increase in public spending on pensions without the reform, equivalent to between 2.5pp and 3.2pp of GDP in 2050 (see Chart 13). In addition to the decrease in average pensions²¹, the increase in the retirement age, which would raise the labour market participation rate and employment rate of older people, should also keep expenditure on pensions from rising faster. In this respect, the European Commission (2011) projects that the participation rate of older workers will increase by 24.1pp over the next five decades to 76.4% in 2060, 10.9pp more than rate projected without the reform. The employment rate should grow faster, by 28.9pp to 72.5% in 2060, implying a slight decrease in the share of older unemployed workers.

Chart 13

Spain: estimated impact of the reform of the public pension system approved in 2011



Source: BBVA Research based on de la Fuente and Doménech data (2012a)

Positive externalities of active ageing

Extending working lives not only has positive implications for the public pension system, but also on the rest of the population groups and on the cognitive performance of older workers.

International empirical evidence²² indicates that employment of older people is positively associated with employment of the young and negatively associated with youth unemployment (see Charts 14 and 15). This means that, on aggregate, the work situations of the old and young are complements, not substitutes, even when considering the impact of economic cycle.²³

The misconception that the higher the labour market participation of older workers, the lower the opportunities for employment of young workers, is based on assumptions that there is a fixed quantity of jobs in demand and that older and younger workers are perfect substitutes. These assumptions are incorrect, judging by the positive association between male employment rates and the inclusion of women in the labour market, or native employment and the arrival of immigrants in Spain over the past decade²⁴.

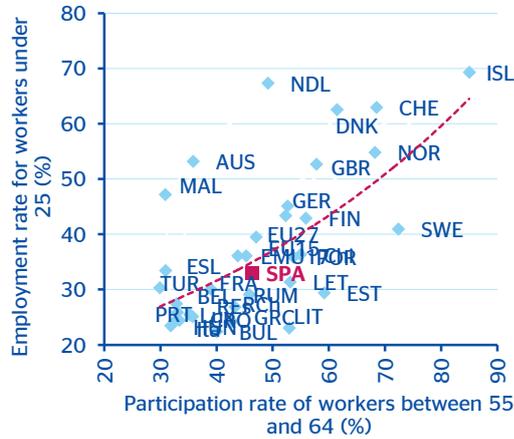
21: The average pension would fall by between 9% and 15% -depending in the projection- compared to the outlook without the reform.

22: Condensed in Gruber and Wise (2010).

23: See Boldrín, García-Gómez and Jiménez-Martín (2011) for a detailed analysis of Spain.

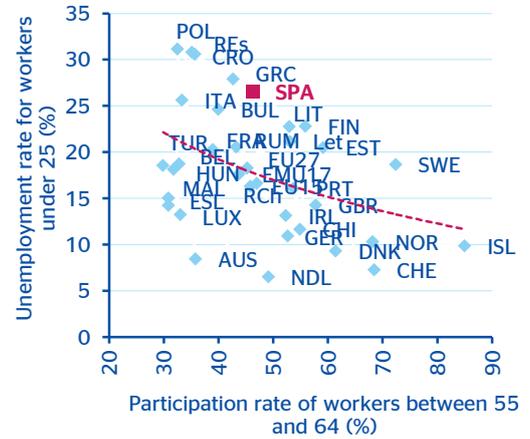
24: Amuedo-Dorantes and de la Rica (2011) provide an analysis on the complementarity between native and immigrant workers in Spain.

Chart 14
Labour market participation rates of workers close to retirement and youth employment (2000-2011, %)



Source: BBVA Research based on Eurostat data

Chart 15
Labour market participation rates of workers close to retirement and youth unemployment (2000-2011, %)



Source: BBVA Research based on Eurostat data

What explains the complementarity between youth employment and the propensity of older people to work? One factor, among others, is lower non-market output or home production. When older workers decide to leave the job market rather than continue working, their non-market output rises. If this is a substitute for market output, employment is destroyed. Conversely, if an older person remains active, their higher income and smaller leisure time will help replace non-market services with market services provided by other population groups (especially younger people)²⁵.

Moreover, extending working lives can help keep younger people stay in school, impacting labour market indices. By extending working lives, young people could expand their education rather than enter the labour market. This would lead to a lower youth unemployment rate in the short term (if those with less chance of finding a job continue to study) and a higher employment rate in the medium term (if the greater education obtained increases their chances of success when entering the labour market).

Active ageing not only has implications for youth employment, but also on the cognitive development of people near the retirement age. In particular, research by Lupton *et al.* (2010) and Roberts *et al.* (2011), among others, show that extending working lives protects against dementia and delays the onset of Alzheimer's for people suffering from the disease (by six months for each additional year worked). Retirement can cause further deterioration of factors protecting the cognitive system and increase the risk of dementia²⁶. These results, coupled with evidence provided in Section 3 on the relationship between active ageing and productivity, indicate that continuous training could play a key role in slowing down the deterioration in cognitive performance of older workers, increasing their productivity and delaying their departure from the labour force.

25: Lührmann and Weiss (2010) present a theoretical model supporting this argument and test it with the German market.

26: This result has led to the 'disuse hypothesis' (Roberts *et al.*, 2011).

5. Conclusions

Labour market participation by older workers in Spain is low compared with the average of developed economies due to the country's lower employment rate. This is due to factors affecting both labour supply and demand. Supply-side factors include:

- a. The lower qualification of the labour force, which increases the likelihood of losing a job and reduces the opportunity cost of leaving the labour market.
- b. The combination of inefficient regulation governing early retirement and a comparatively long period of receiving unemployment benefits, which produces incentives to receive the benefits until they run out and to retire at the legal minimum age.
- c. The tax regime, which discourages older people from continuing to work.

Demand-side factors include:

- d. Inflexible contracts and wage conditions imposed by the legal framework, which make it more costly to keep older people employed.
- e. Misguided and, therefore, inefficient employment policies aimed at promoting active ageing.

In summary, Spain's lower rate of older work employment would not pose a problem if demographic and labour market prospects were bright and the overall macroeconomic implications were positive, or at least, benign. Nevertheless, the ageing of the population and the delay in the start of employment seen in the past five decades is expected to continue in the next five, jeopardising the sustainability of the public pension system. Moreover, the positive impact of active ageing on youth employment and the cognitive performance of older people play in favour of extending working lives in Spain.

Measures to encourage older people to remain in the job market should be designed to remove the obstacles limiting labour supply and demand. Firstly, it would be desirable to discourage workers from seeking early retirement based on current regulations²⁷. For this, the amount of the pension should ensure that the present value until average life expectancy is the same as if retirement comes at age 65 or older. Thus, the pension would be lower for early retirement and higher for later retirement. As explained in Section 3, early retirement regulations pose a moral hazard dilemma and cause the rest of society to bear the cost related to the reduction in working life.

Secondly, the implications of taxes on the labour supply for older workers must be studied. At the same time, the potentially discouraging effects of capping retirement pensions and, in this case lowering the pension limit, should be discussed, as they would help extend the working life and increase the opportunity cost of retiring from the labour market.

Thirdly, it would be desirable to foster continuous training and the professional retraining of older workers. This would partly make up for the decline in cognitive performance, limit the decrease in productivity and delay the retirement age, which would have a positive impact on the cognitive system, reinforcing the virtuous circle. Given the current fiscal consolidation and the limited effectiveness of incentives for hiring and maintaining employment, resources used to subsidise employers' Social Security contributions should be earmarked to fund continuous training programmes.

Fourthly, the employment relations between companies and older workers in respect of contractual terms and wages must become more flexible. With respect to contractual relations, promoting flexible retirement and commercial contracts are preferable to permanent employment contracts. For wages, it would be better to attach greater importance to performance-based payment than the seniority bonuses included in collective labour agreements.

27: Premature withdrawal from the labour market through early retirement should only be allowed for certain occupations and areas of activity in which a worker's physical abilities play an important role.

Lastly, greater awareness of pension regulations -eligibility and amount- among the public opinion would help encourage people to continue working. Authorities should make efforts to notify each person periodically of the pensions rights they have accumulated and, above all, the pensions benefits they are entitled to receive.

References

Amuedo-Dorantes, C. and S. de la Rica (2011): "Complements or substitutes? Task specialization by gender and nativity in Spain", *Labour Economics*, Vol. 18(5), 697-707.

Bank of Spain (2011): *2010 Annual report*. Madrid. Available at:

<http://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesAnuales/InformesAnuales/10/Fich/inf2010.pdf>

Boldrin, M., P. García-Gómez and S. Jiménez-Martín (2010): "Social Security Incentives, Exit from the Workforce and Entry of the Young", in Gruber, J. and A. Wise (editors) (2010): *Social Security Programs and Retirement around the World: The Relationship to Youth Employment*. NBER Book Series - International Social Security. University of Chicago Press. 261-294.

Conde-Ruiz, J. I. and C. I. González (2012): "Spain 2011 Pension Reform", Working Paper 2012-03. Fedea.

De la Fuente, A. and R. Doménech (2012a): "The financial impact of Spanish pension reform: A quick estimate", *Journal of Pension Economics and Finance* (in print).

- (2012b): "Educational Attainment in the OECD, 1960-2010", Working Paper 12/20, BBVA Research.

Díaz-Jiménez and Díaz-Saavedra (2011): "Parametric Reforms of the Spanish Pension System: a Quantitative Analysis", Mimeo. Available at: <http://javierdiazjimenez.com/res/pen3-a12.pdf>

European Commission (2011): *The 2012 Ageing Report: Underlying Assumptions and Projection Methodologies*. European Economy 4|2011. Directorate-General for Economic and Financial Affairs. European Union.

IMF (2010): "Unemployment dynamics during recessions and recoveries: Okun's law and beyond". In *World Economic Outlook. Rebalancing Growth. April 2010*. Chapter 3. Available at:

<http://www.imf.org/external/pubs/ft/weo/2010/01/pdf/c3.pdf>

García-Pérez, J. I. and A. R. Sánchez-Martín (2010): "Social Security and the search behaviour of workers approaching retirement", Working Papers 2010-26, Fedea.

García-Pérez, J. I., S. Jiménez-Martín and A. R. Sánchez-Martín (2010): "Retirement incentives, individual heterogeneity and labour transitions of employed and unemployed workers", Working Papers 2010-27, Fedea.

Gruber, J. and A. Wise (editores) (2010): *Social Security Programs and Retirement around the World: The Relationship to Youth Employment*. NBER Book Series - International Social Security. University of Chicago Press.

Imai, S. and M. P. Keane (2004): "Intertemporal Labor Supply and Human Capital Accumulation", *International Economic Review*, Vol. 45, Nº 2, 601-642.

Keane, M. P. and R. Rogerson (2011): "Reconciling Micro and Macro Labor Supply Elasticities: A Structural Perspective", NBER Working Paper Series, 17430.

Labeaga, J. M. and J. F. Sanz (2001): "Oferta de trabajo y fiscalidad en España. Hechos recientes y tendencias tras el nuevo IRPF", *Spanish Working Papers*, Nº 87, 230-243.

Lührmanna, M. and M. Weiss (2010): "The effect of working time and labor force participation on unemployment: A new argument in an old debate", *Economic Modelling*, Vol. 27 (1), 67-82.

Lupton, M. K., D. Stahl, N. Archer, C. Foy, M. Poppe, S. Lovestone, P. Hollingworth, J. Williams, M. J. Owen, K. Dowzell, R. Abraham, R. Sims, C. Brayne, D. Rubinsztein, M. Gill, B. Lawlor, A. Lynch and J. F. Powell (2010): "Education, occupation and retirement age effects on the age of onset of Alzheimer's disease", *International Journal of Geriatric Psychiatry*, Vol. 25 (1), 30-36.

Ministerio de Economía y Hacienda (2011): *Programa de Estabilidad de España 2011-2014*. Available at:

http://www.minhap.gob.es/Documentacion/Publico/GabineteMinistro/Varios/29-04-11_Programa_Estabilidad_Espana_2011-2014.pdf

OCDE (2011a): *Pensions at a Glance 2011: Retirement-Income Systems in OECD and G20 Countries*. OECD. Paris.

– (2011b): "Labour Force Statistics: Population projections", *OECD Employment and Labour Market Statistics* (database). Available at: <http://www.oecd-ilibrary.org/content/data/data-00538-en>

Prescott, E. C. (2004): "Why do Americans work so much more than Europeans?", *Federal Reserve Bank of Minneapolis Quarterly Review*, Vol. 28, No. 1, 2-13.

Roberts, B. A., R. Fuhrer, M. Marmot y M. Richards (2011): "Does retirement influence cognitive performance? The Whitehall II Study", *Journal of Epidemiology and Community Health*, 65 (11), 958-963.

Simón, H. (2009), "La desigualdad salarial en España: Una perspectiva internacional y temporal", *Investigaciones Económicas*, vol. XXXIII (3), 439-471.

Skirbekk, V. (2004): "Age and individual productivity: a literature survey". En Feichtinger, G. (ed.): *Vienna yearbook of population research 2004*, 133-153. Austrian Academy of Sciences Press. Viena.

Tobes, P., M. Angoitia, I. Mateos, C. Pérez, A. Salas and S. García (2007): *La prolongación de la actividad laboral: un reto para la empresa española*. Círculo de Empresarios. Madrid.

DISCLAIMER

This document and the information, opinions, estimates and recommendations expressed herein, have been prepared by Banco Bilbao Vizcaya Argentaria, S.A. (hereinafter called "BBVA") to provide its customers with general information regarding the date of issue of the report and are subject to changes without prior notice. BBVA is not liable for giving notice of such changes or for updating the contents hereof.

This document and its contents do not constitute an offer, invitation or solicitation to purchase or subscribe to any securities or other instruments, or to undertake or divest investments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

Investors who have access to this document should be aware that the securities, instruments or investments to which it refers may not be appropriate for them due to their specific investment goals, financial positions or risk profiles, as these have not been taken into account to prepare this report. Therefore, investors should make their own investment decisions considering the said circumstances and obtaining such specialized advice as may be necessary. The contents of this document are based upon information available to the public that has been obtained from sources considered to be reliable. However, such information has not been independently verified by BBVA and therefore no warranty, either express or implicit, is given regarding its accuracy, integrity or correctness. BBVA accepts no liability of any type for any direct or indirect losses arising from the use of the document or its contents. Investors should note that the past performance of securities or instruments or the historical results of investments do not guarantee future performance.

The market prices of securities or instruments or the results of investments could fluctuate against the interests of investors. Investors should be aware that they could even face a loss of their investment. Transactions in futures, options and securities or high-yield securities can involve high risks and are not appropriate for every investor. Indeed, in the case of some investments, the potential losses may exceed the amount of initial investment and, in such circumstances; investors may be required to pay more money to support those losses. Thus, before undertaking any transaction with these instruments, investors should be aware of their operation, as well as the rights, liabilities and risks implied by the same and the underlying stocks. Investors should also be aware that secondary markets for the said instruments may be limited or even not exist.

BBVA or any of its affiliates, as well as their respective executives and employees, may have a position in any of the securities or instruments referred to, directly or indirectly, in this document, or in any other related thereto; they may trade for their own account or for third-party account in those securities, provide consulting or other services to the issuer of the aforementioned securities or instruments or to companies related thereto or to their shareholders, executives or employees, or may have interests or perform transactions in those securities or instruments or related investments before or after the publication of this report, to the extent permitted by the applicable law.

BBVA or any of its affiliates' salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to its clients that reflect opinions that are contrary to the opinions expressed herein. Furthermore, BBVA or any of its affiliates' proprietary trading and investing businesses may make investment decisions that are inconsistent with the recommendations expressed herein. No part of this document may be (i) copied, photocopied or duplicated by any other form or means (ii) redistributed or (iii) quoted, without the prior written consent of BBVA. No part of this report may be copied, conveyed, distributed or furnished to any person or entity in any country (or persons or entities in the same) in which its distribution is prohibited by law. Failure to comply with these restrictions may breach the laws of the relevant jurisdiction.

In the United Kingdom, this document is directed only at persons who (i) have professional experience in matters relating to investments falling within article 19(5) of the financial services and markets act 2000 (financial promotion) order 2005 (as amended, the "financial promotion order"), (ii) are persons falling within article 49(2) (a) to (d) ("high net worth companies, unincorporated associations, etc.") Of the financial promotion order, or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the financial services and markets act 2000) may otherwise lawfully be communicated (all such persons together being referred to as "relevant persons"). This document is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons. The remuneration system concerning the analyst/s author/s of this report is based on multiple criteria, including the revenues obtained by BBVA and, indirectly, the results of BBVA Group in the fiscal year, which, in turn, include the results generated by the investment banking business; nevertheless, they do not receive any remuneration based on revenues from any specific transaction in investment banking.

BBVA is not a member of the FINRA and is not subject to the rules of disclosure affecting such members.

"BBVA is subject to the BBVA Group Code of Conduct for Security Market Operations which, among other regulations, includes rules to prevent and avoid conflicts of interests with the ratings given, including information barriers. The BBVA Group Code of Conduct for Security Market Operations is available for reference at the following web site: www.bbva.com / Corporate Governance".

BBVA is a bank supervised by the Bank of Spain and by Spain's Stock Exchange Commission (CNMV), registered with the Bank of Spain with number 0182.