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POPULATION AGEING CHALLENGES

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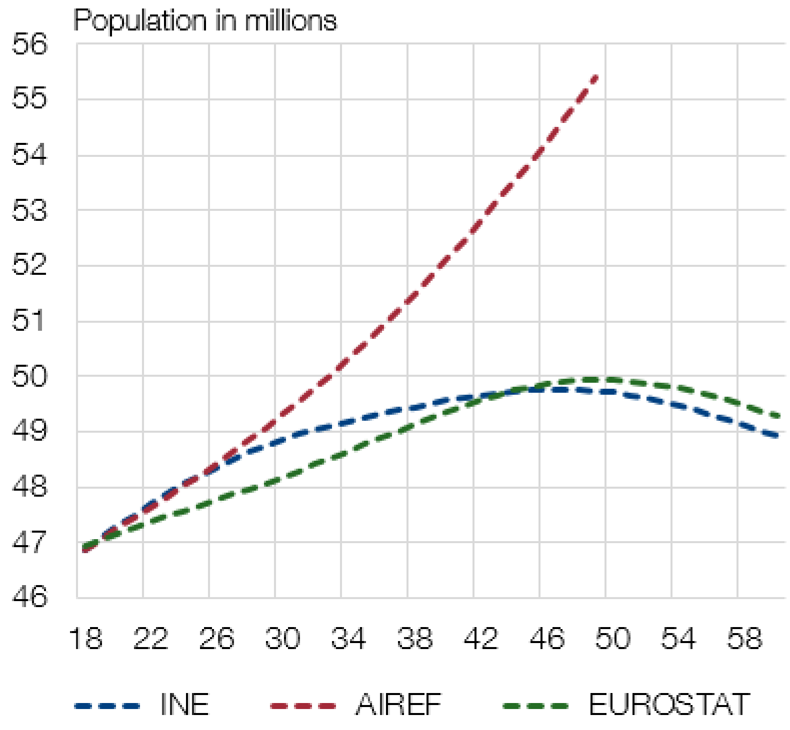
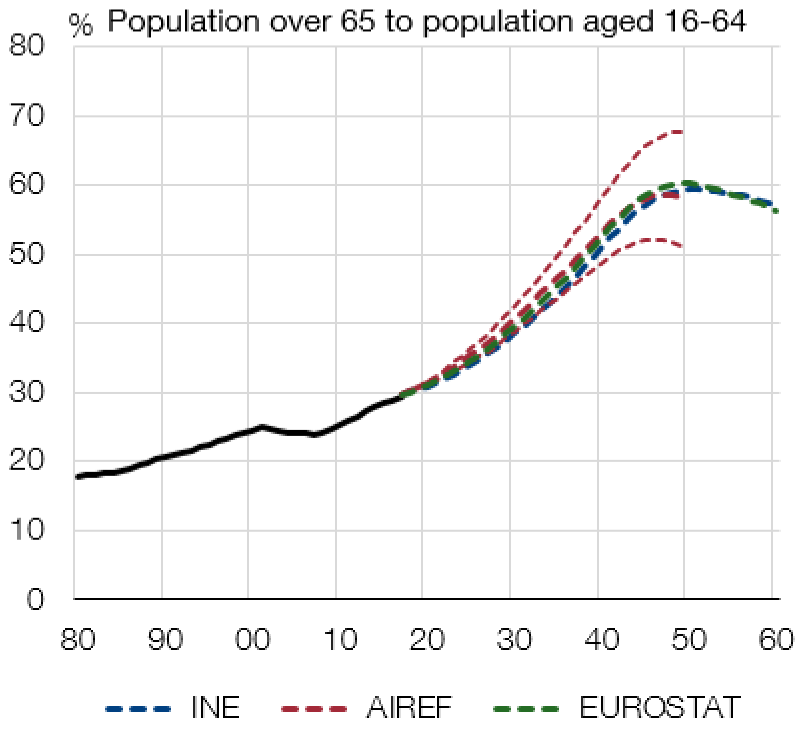
As in other developed economies, demographic projections for Spain point to a significant increase in the ratio of the population over 65 to the working-age population (16-64), from 30% today to 50%-70% by 2050*

PROJECTIONS TOTAL POPULATION



Sources: INE, AIReF and Eurostat.

PROJECTIONS DEPENDENCY RATIO

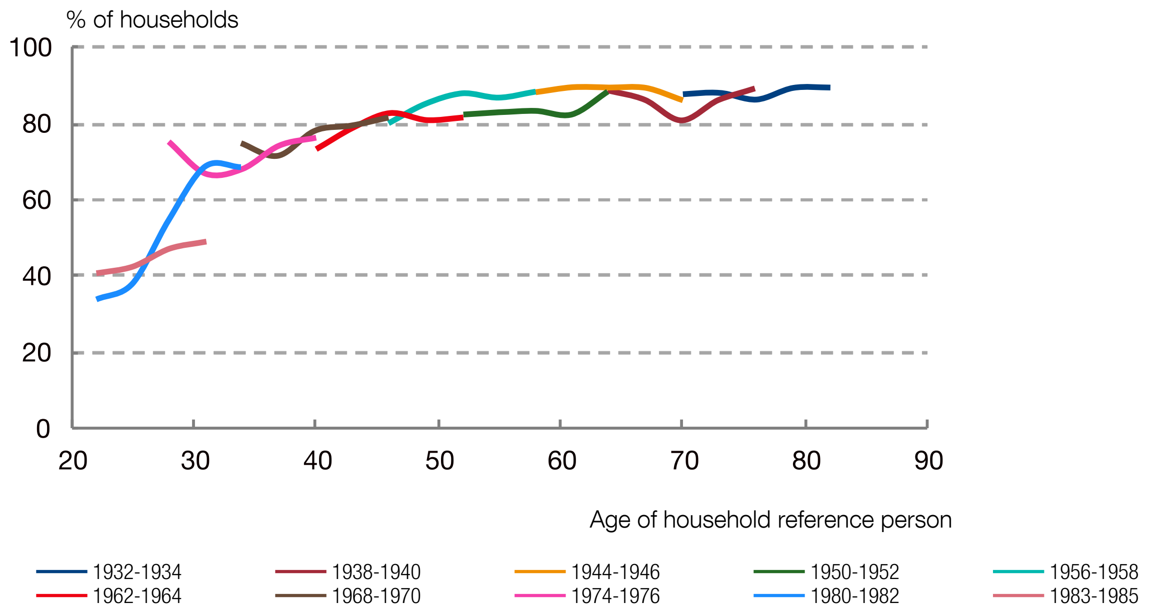


* AIReF scenarios in the 20th and 80th percentiles, respectively.

The transition towards an older population will affect aggregate saving and investment patterns, and also asset portfolio composition

- Increase in the saving rate on account of greater longevity and greater uncertainty during the transition towards an older population, and decrease in saving owing to the older population's greater propensity to consume

DISTRIBUTION OF HOUSEHOLDS THAT OWN THEIR MAIN RESIDENCE, BY AGE OF HOUSEHOLD REFERENCE PERSON

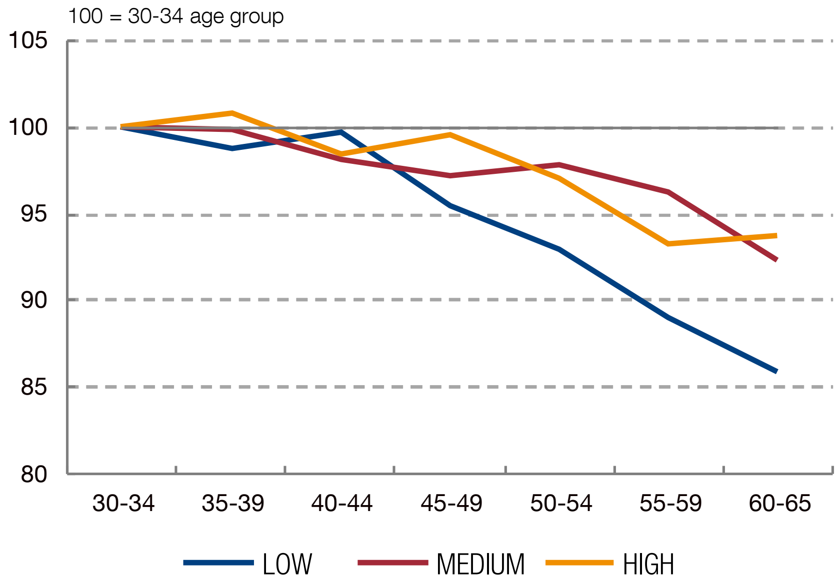


Source: Barceló, Bover, Guner, Korchakov and Villanueva (2019).

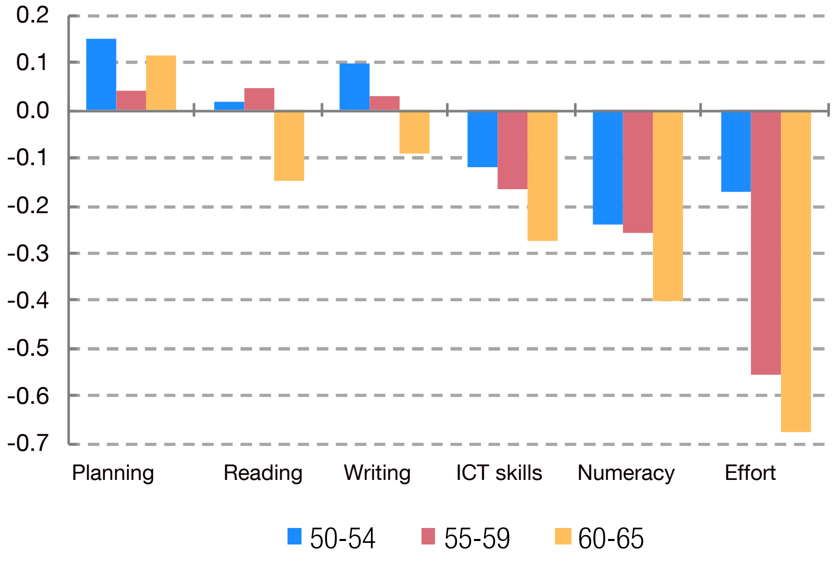
Ageing may have a considerable impact on potential growth:

- It is associated with lower employment and innovation rates, having an adverse effect on economic growth (Aksoy et al. (2019))
- Given the cognitive skills life cycle, education policies are key to drive the adoption of new technological developments

PIAAC MATHEMATICS SCORES BY LEVEL OF EDUCATION



CHANGES IN SKILLS USE COMPARED WITH 30-34 AGE GROUP



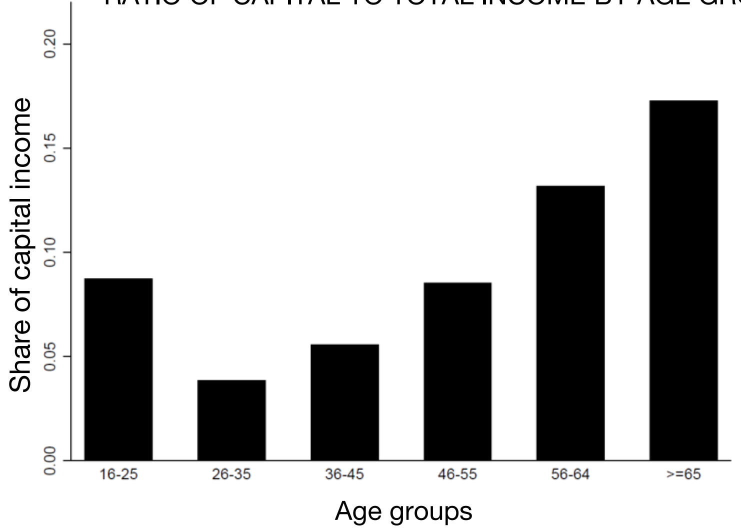
Source: OECD (PIAAC 2013).

Ageing affects the composition of the tax base …

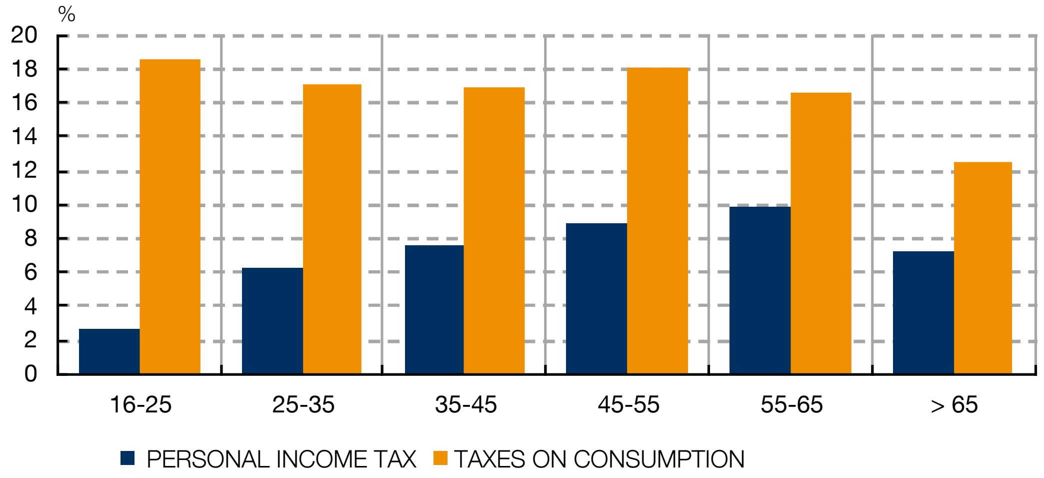
- Lower labour tax base owing to the fall in the wage share of GDP (Wang et al. (2017), Glover and Short (2018)), the increase in the percentage of lower-rate taxpayers and the higher share of capital income
- Consumption patterns change over the life cycle, giving rise to changes in the effective rate of tax on consumption (e.g. higher consumption of health products, lower fuel consumption)

… and fiscal policy effectiveness (multipliers) (Basso and Rachedi (2018), Alloza and Sanz (2019))

RATIO OF CAPITAL TO TOTAL INCOME BY AGE GROUP



AVERAGE EFFECTIVE RATES BY AGE GROUP



Source: Banco de España, drawing on the Muestra IRPF 2015 IEF-AEAT (Declarantes).

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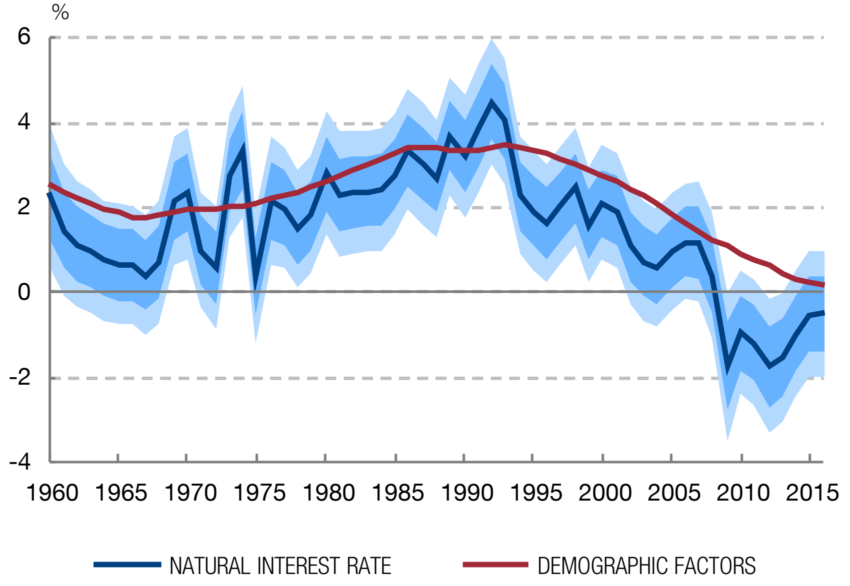
Demographic changes affect two basic pillars of monetary policy, …

- Ageing explains much of the fall in the natural rate of interest (r*) owing to the higher relative supply of saving
- It is also associated with lower inflationary pressure, on account of a greater aversion to inflation, lower wage growth and changes in the consumption basket

… presenting new challenges for stabilisation policies

EURO AREA NATURAL INTEREST RATE. ERROR CORRECTION MODEL

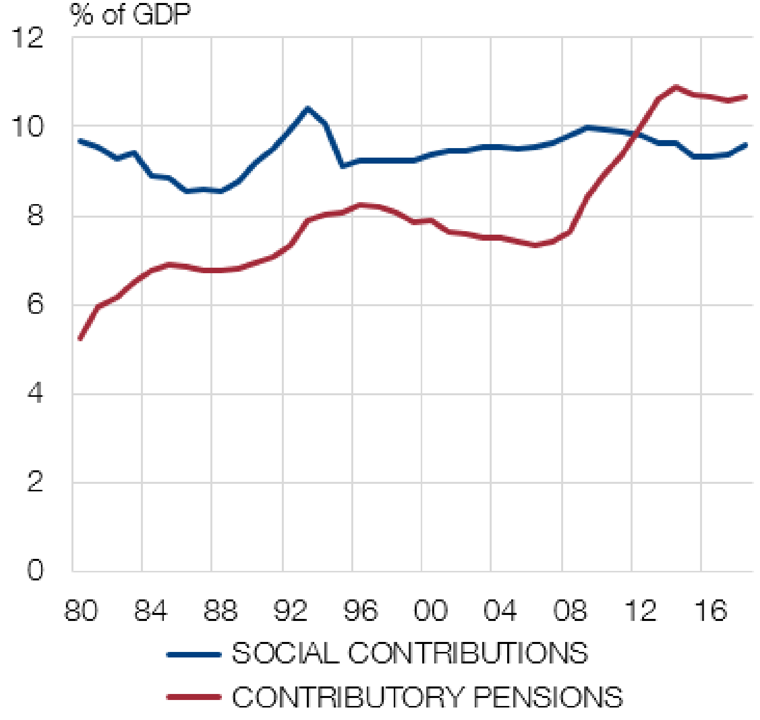


Source: Fiorentini, Galesi, Pérez-Quirón and Sentana (2018).

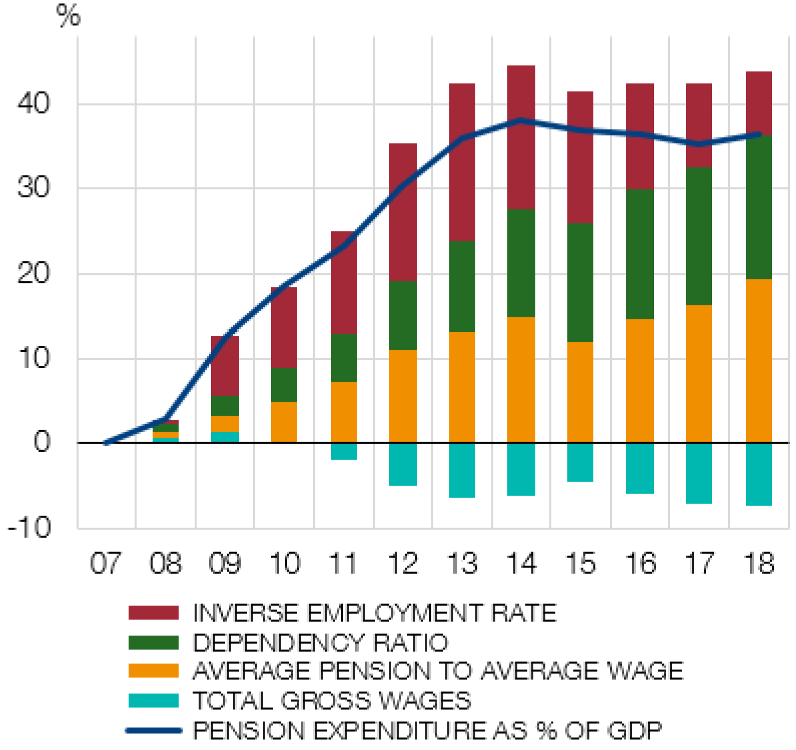
The decline in Spain’s Social Security balance over the last decade has been largely due to a very significant increase in contributory pension expenditure, …

… reflecting the higher dependency and higher average pension (compared with the average wage in the economy) ratios and, to a lesser extent, the lower unemployment rate

CONTRIBUTIONS REVENUE AND PENSION EXPENDITURE



DETERMINANTS OF PENSION EXPENDITURE



Sources: Seguridad Social and INE.

The 2011 reform affected essential parameters of the pension system (transition period up to 2027):

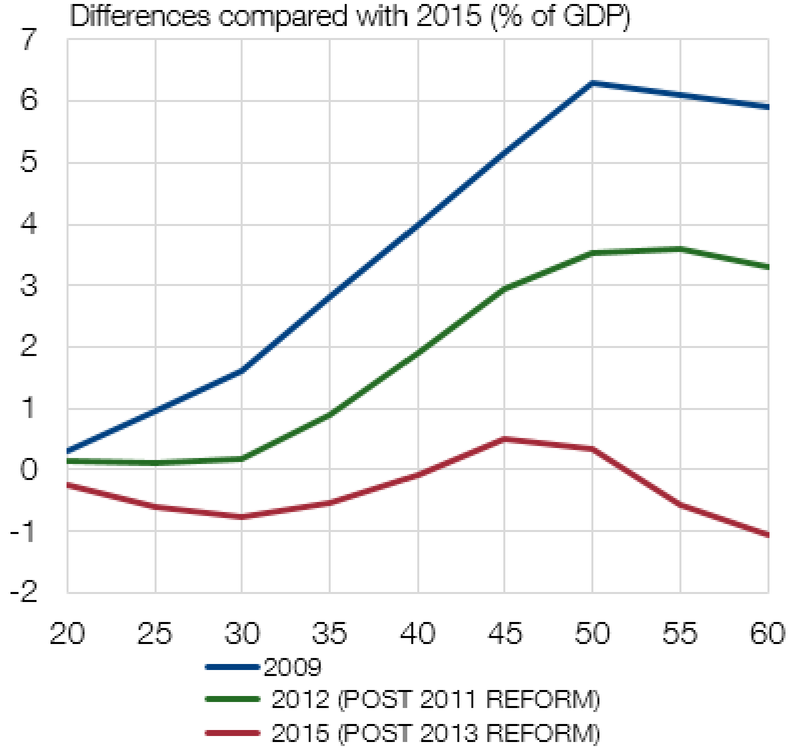
- The **statutory retirement age** was raised from 65 to 67
- The **period considered to calculate the regulatory base was increased** from 15 to 25 years and a minimum of 37 years' contributions was set to qualify for 100% pension
- The **eligibility requirements for partial and early retirement** were reviewed

The 2013 reform introduced two new structural elements:

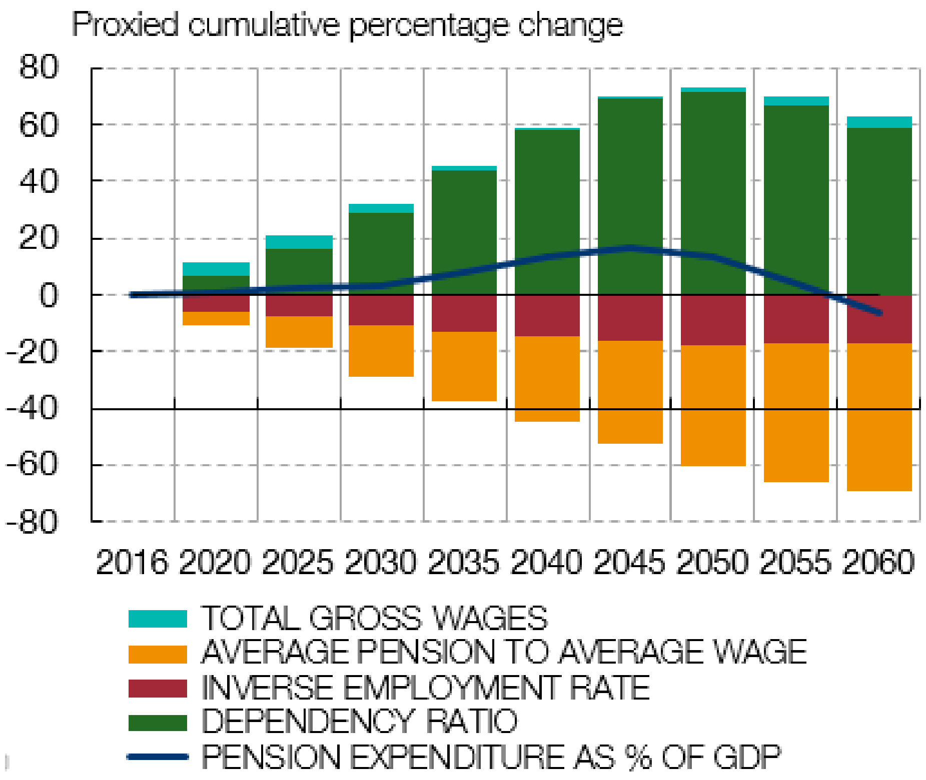
- The **sustainability factor**, which linked starting pensions to life expectancy
- The **Pension Revaluation Index**:
  - *Depending on revenue and expenditure levels, the annual pension increase cannot be lower than 0.25% or higher than the result of adding 0.50% to the change in the CPI*

The 2011 and 2013 reforms represented very significant progress in the financial sustainability of the pension system, …

PENSION EXPENDITURE ACCORDING TO THE AGEING REPORT



2018 AGEING REPORT PROJECTIONS



Source: Ageing Report (European Commission)

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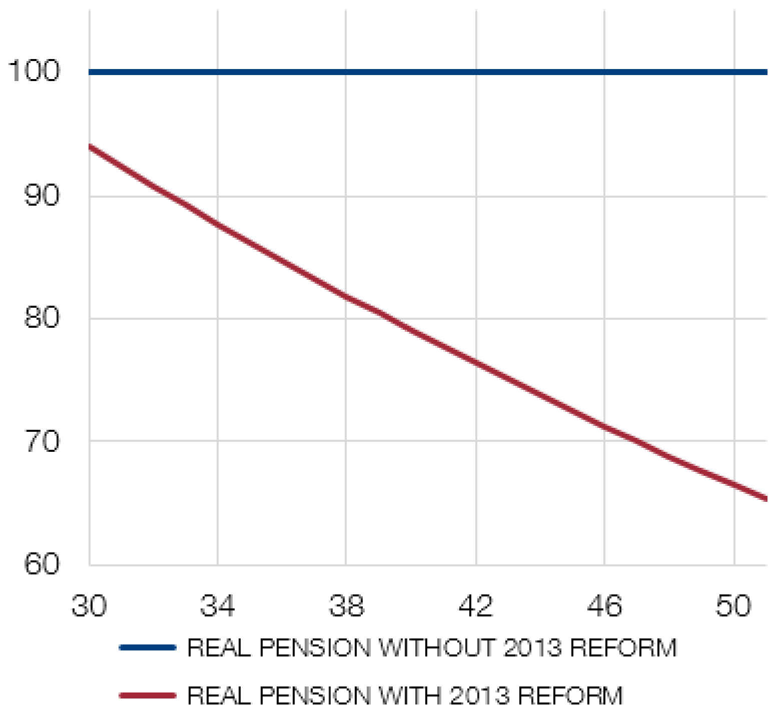
… but in the absence of any additional changes in the system's revenue and expenditure parameters, the improved financial sustainability created by the 2013 reform would be essentially due to the fall in the replacement rate (20 pp between 2016 and 2050, when it would be slightly above the projected EU27 average) (2018 Ageing Report)

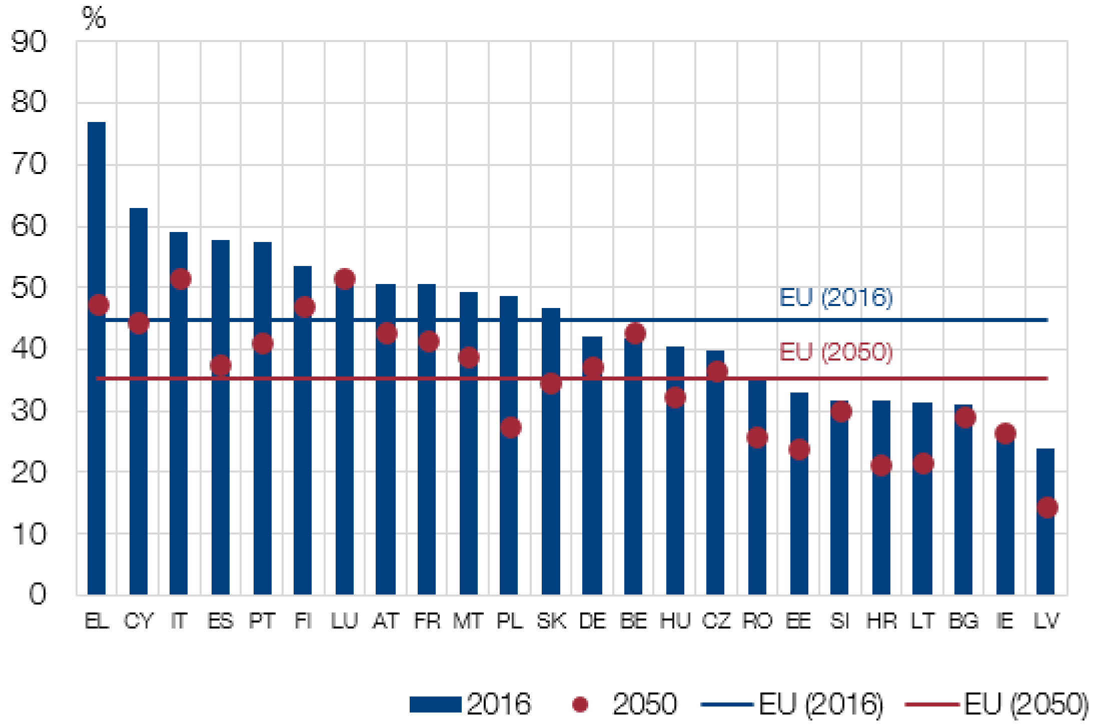
REAL PENSIONS BEFORE AND AFTER THE 2013 REFORM

2030 retiree (life expectancy=21 years, CPI=2%)



Source: Banco de España and Ageing Report (European Commission).

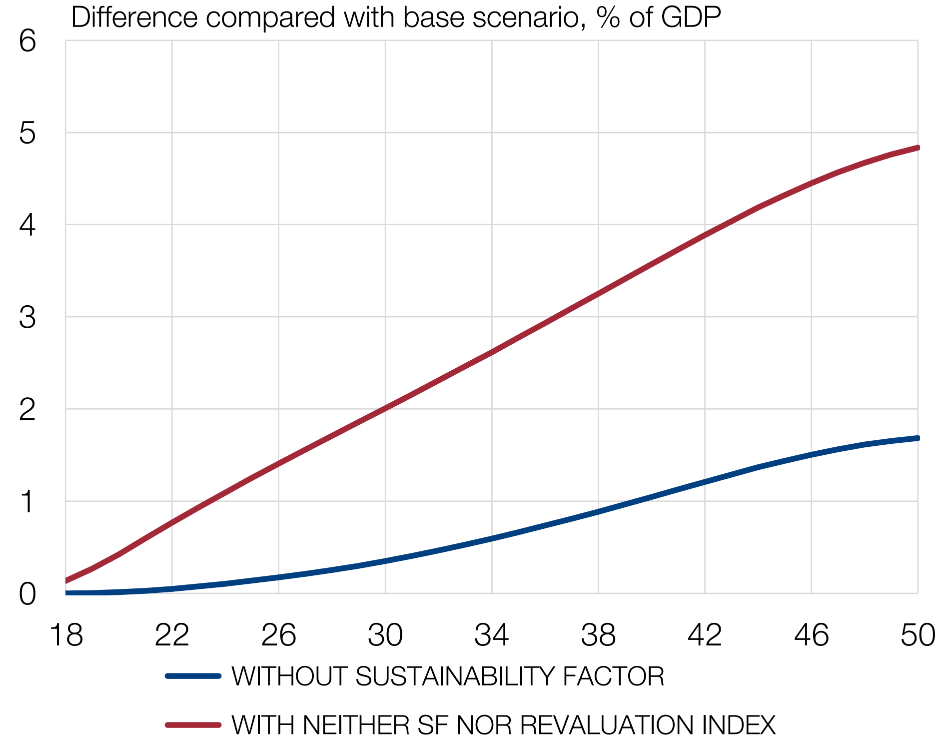
PENSION BENEFIT RATES IN 2016 AND 2050



Note: the chart does not include countries with second-pillar contributions over 2% of GDP, according to the OECD (DK, NL, SE and UK).

A simple simulation exercise* suggests that the lower pension expenditure resulting from the 2013 reform was mainly due to the revaluation index

PENSION EXPENDITURE PROJECTION



Source: Banco de España.

* Accounting projection of pension expenditure based on assumptions as to the number and average amount of pensions, bearing in mind that these amounts differ for new pensions, pensions leaving the system and existing pensions. The assumptions on the behaviour of the different variables are those used in the 2018 Ageing Report.

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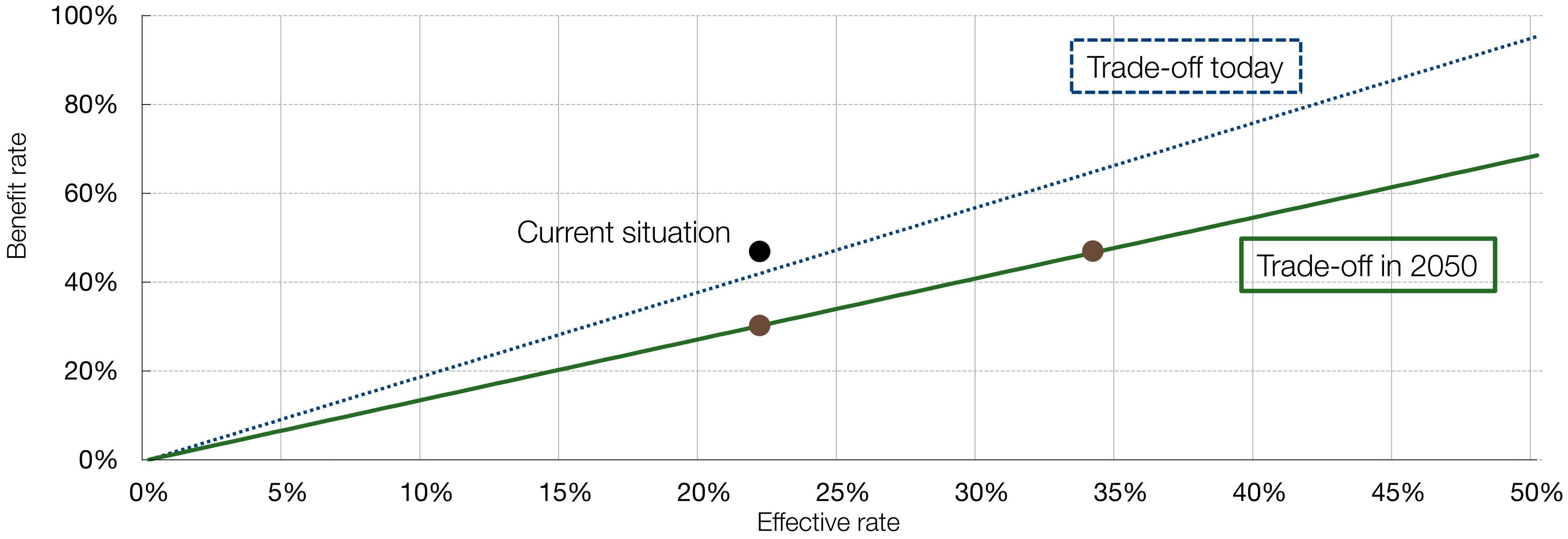
$$\text{benefit rate}^* = \frac{\text{employment rate}}{\text{demographic factor} * \text{coverage rate}} * \text{effective rate}$$

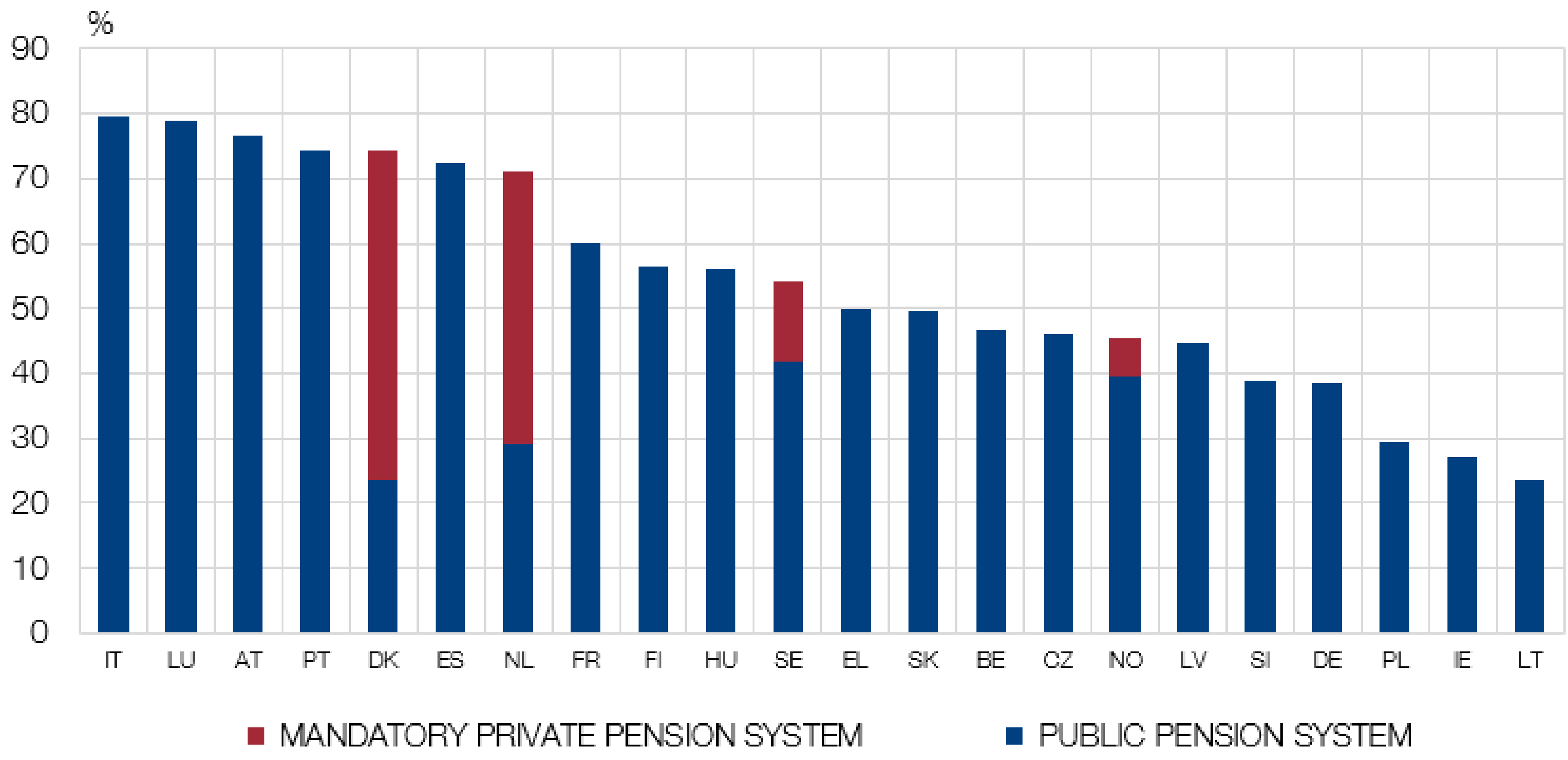
In a situation of equilibrium between pension system revenue and expenditure, there is a trade-off between the level of average pension to average salary and pension system funds

EFFECTIVE AND BENEFIT RATES UNDER SUSTAINABILITY (2050)



Assumptions: employment rate 80%; demographic factor 59%; coverage rate 1.

REPLACEMENT RATES IN EU PENSIONS: SHARE OF PUBLIC AND MANDATORY PRIVATE SYSTEM



Source: OECD.

WEALTH COMPOSITION IN SPAIN COMPARED WITH OTHER EUROPEAN COUNTRIES

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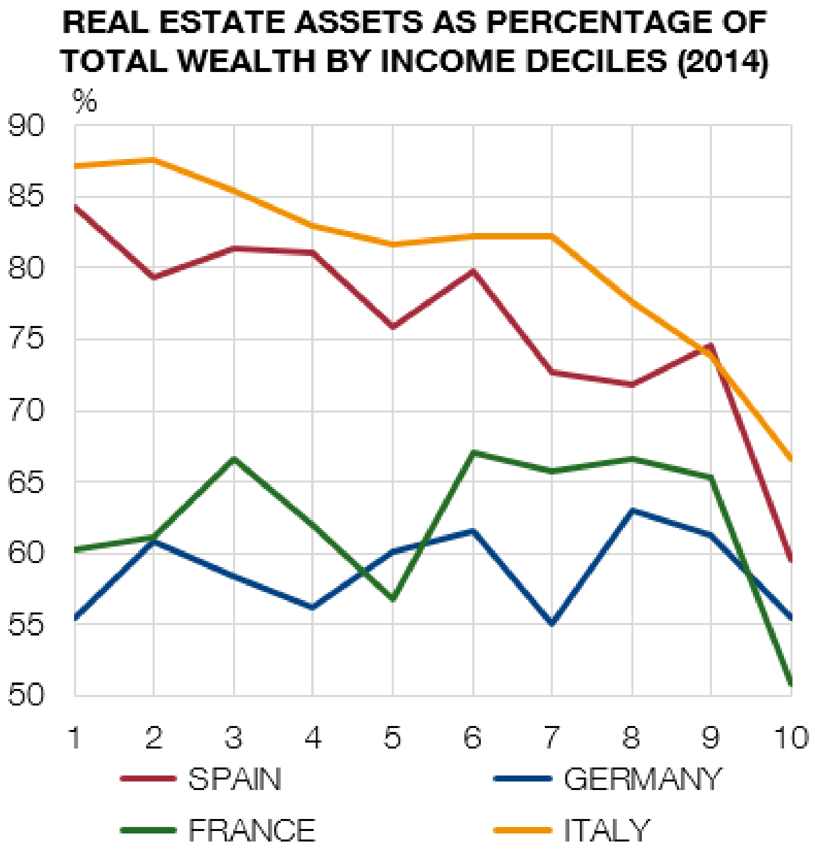
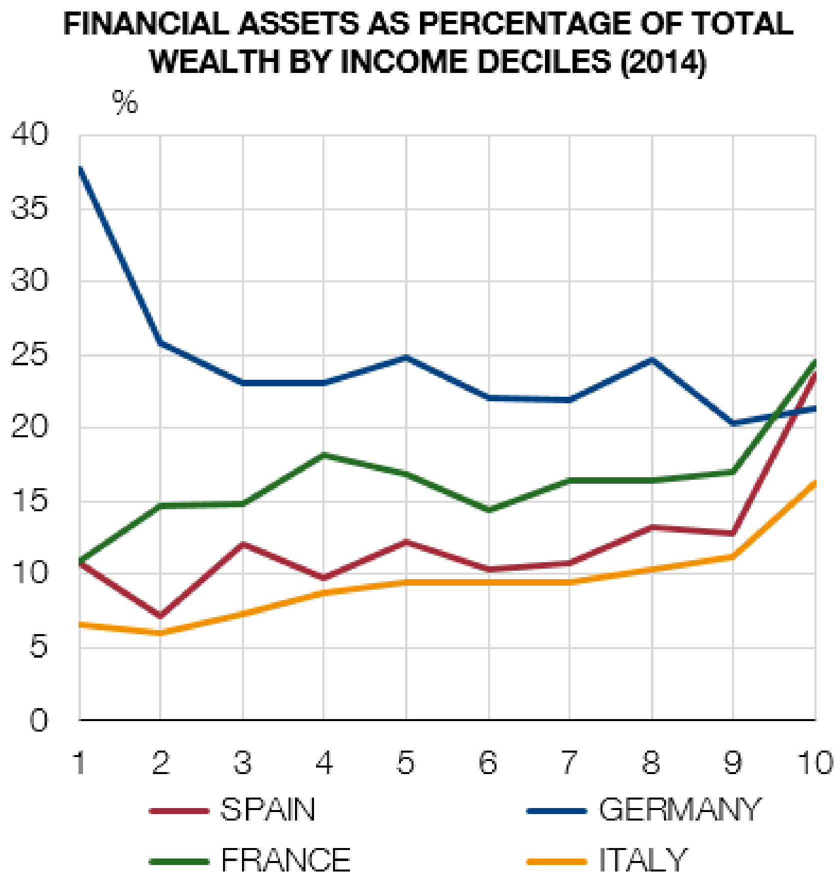
Compared with France and Germany, the wealth of Spanish households is property biased, save at the top end of the income distribution

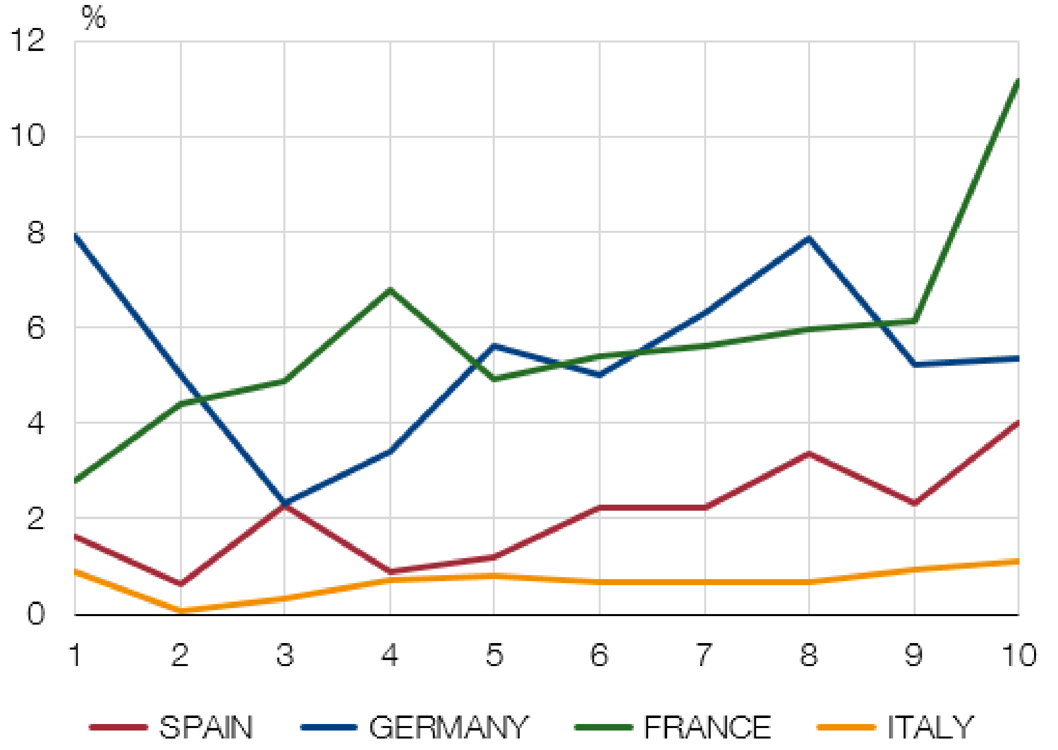




Source: Household Finance and Consumption Survey (HFCS).

In Spain, the wealth held in voluntary pension funds and life insurance policies averages 1.6% of total assets of households below the income distribution median and 4% for households in the top decile

PENSION FUND ASSETS AS PERCENTAGE OF TOTAL WEALTH BY INCOME DECILES (2014)



Source: Household Finance and Consumption Survey (HFCS).

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THANK YOU FOR YOUR ATTENTION