Report on the Sustainability Factor of the Public Pension System

Link to the Report

June 8, 2013
Introduction

• The main challenge faced by the Spanish public pension system reflects two excellent news:

1. People are living ever longer thanks to an increase in life expectancy after reaching 65 years old: 16 months more every 10 years

2. The baby boom generation will begin to retire over the next decade and will do so with a longer life expectancy than their European counterparts (approximately two years longer)
Introduction

Distribution of the Spanish population by date of birth
Source: BBVA Research

- 65 years
- 40 years
- 18 years
The sustainability factor

The sustainability factor is based on two formulae:

1. **The Intergenerational Equity Factor** or IEF, which only affects the initial pension calculation and limits it due to the increase in life expectancy compared to a base year

2. **Annual Growth Factor** or AGF, which ensures balanced annual growth in pensions, based on cyclically adjusted revenues and expenditures of the public pension system
Intergenerational Equity Factor (IEF)

\[ IEF_{j,t+s} = \frac{e_{j,t}}{e_{j,t+s}} \]

- The IEF is the ratio of the life expectancy \((e)\) of individuals of age \(j\) in year \(t\) over that in \(t+s\)
- The IEF multiplies the initial pension, given by the current legislation, of the new retirees joining the pension system each year
- The main aim of this factor is to provide a fair treatment to individuals entitled to pension payments in different years
Intergenerational Equity Factor (IEF)

• It is an **additional parameter** to those already used to calculate the first pension of new pensioners

• A real growth of initial pensions will be observed any time the pre-IEF pension increases above the growth rate of life expectancy, which is expected to be of approximately 5% every 10 years
Intergenerational Equity Factor (IEF)

Intergenerational equity factor  
Benchmark age, 65 years (2014=1)  
Source: Institute of National Statistics (INE), 2012
Annual Growth Factor (AGF)

- **Objective**: drive the pension system to a budgetary balance between income ($I$) and expenses ($E$), adjusted for the economic cycle ($*$)

  $$E^*_{t+1} = I^*_{t+1}$$

- This balance is a fundamental restriction: a pension system can only distribute the funds that are structurally available

- The yearly balance of pension system’s income and expenses may be positive or negative. However, the most important requirement is that a **the system does not move into structural deficit** given the variables are adjusted for the economic cycle
Annual Growth Factor (I)

- **All variables are corrected for the business cycle**, avoiding pensions’ decrease during recessions

- **Example**: balanced budget scenario 2014-2050 with average growth of 2% in real revenues, 1.2% in the number of pensions, 0.8% in entry and exit effects, and a rate of inflation of 1.5%

\[
\text{Annual growth} = \text{Average inflation} + \text{Growth of revenues in real terms} - \text{Growth in the number of pensions and entry and exit effects} + \text{Convergence speed} \times \text{Surplus or deficit of the system}
\]

\[
1.5\% = 1.5\% + 2\% - (1.2\% + 0.8\%) + 0.25 \times 0\%
\]
Annual Growth Factor (II)

\[ g_{t+1} = \bar{\pi}_{t+1} + (\bar{g}_{I,t+1} - \bar{g}_{P,t+1} - \bar{g}_{s,t+1}) + \alpha \left( \frac{l^*_t - G^*_t}{G_t} \right) \]

- Average inflation
- Growth of revenues in real terms
- Growth in the number of pensions and entry and exit effects
- Surplus or deficit of the system

- All variables are corrected for the business cycle, avoiding the fall of pensions in recessions
Annual Growth Factor (III)

\[ g_{t+1} = \bar{\pi}_{t+1} + \left( \bar{g}_{r,t+1} - \bar{g}_{p,t+1} - \bar{g}_{s,t+1} \right) + \alpha \left( \frac{l^* - G^*}{G_t} \right) \]

The nominal growth of pensions is based on three factors:

1. The average inflation rate

2. The extent to which the average real growth rate of revenues rises over and above the number of pensions and the exit and entry effect

3. The system surplus or deficit adjusted for economic cycle
   - \( \alpha \) represents the speed at which budget imbalances are corrected
Annual Growth Factor (IV)

\[
\bar{g}_{pm,t+1}^r \equiv g_{t+1} + \bar{g}_{s,t+1} - \bar{n}_{t+1} = \bar{g}_{l,t+1}^r - \bar{g}_{p,t+1}
\]

Under a balanced budget \((I^* = E^*)\) the real growth rate of the average pension is just the difference between the average real growth rate of revenues and the average growth rate of the number of pensions.
Effects of the AGF on average real pensions

\[
\bar{g}_{pm,t+1} = g_{t+1} + \bar{g}_{s,t+1} - \bar{\pi}_{t+1} = \bar{g}_{l,t+1} - \bar{g}_{P,t+1}
\]

Projections of the number of pensions between 2013 and 2050 and the average growth rate of the number of pensions

Source: Social Security, 2013
Annual Growth Factor: likely scenarios

• In most likely scenarios, pensions in real terms, and therefore the purchasing power of pensions will rise in the long term

• In most likely scenarios, the average pension over the average wage will fall if corrective measures are not adopted

• In response to this decline in average pensions over average wages, Spanish society can opt for different combinations of the following alternatives:

  1. Implement reforms that increase the working population and their wages (more productive workers, human and technology capital)

  2. Increase public pension revenues through different taxes

  3. Offset the fall in the average pension over the average wage with additional revenues coming from private savings
Annual Growth Factor: ten benefits

1. It fulfils the mandate of Article 135 of the Spanish Constitution and the Organic Law on **Budgetary Stability** and Financial Sustainability

2. Differentiates automatic and yearly application of the sustainability factor from **structural decisions on the revenues** of the system

3. Enables the average pension to **adjust smoothly** to changes in other variables in the formula

4. The AGF is **more ample than the current growth rule** (only inflation) and other sustainability factors in other European countries. Along with the IEF, the AGF is a **third-generation sustainability factor**

5. **All variables are adjusted for the economic cycle**, avoiding the fall of pensions during recessions
Annual adjustment factor: ten benefits

6. Surpluses during economic growth periods will be accumulated in the Social Security Reserve Fund, while deficits during recessions will be offset using this fund.

7. Potential savings that can be generated by the Intergenerational Equity Factor of new pensions are returned to pensioners through the AGF.

8. Inhibits supporting pensions with structural deficits.

9. Redistributes additional funds and lower expenses achieved through other parametric reforms among current and future pensions.

10. Improves transparency and knowledge in the society, allowing it to react early to demographic and economic challenges.
Application of the sustainability factor

- This Committee recommends **applying the IEF** within the period **2014 to 2019**, although there are reasons that justify applying this factor as soon as possible.

- It should be **guaranteed that the nominal value of current pensioners' pensions does not fall**.

- **No pensions should be insufficient** after applying the AGF.

- The Committee is in favour of **applying the AGF as soon as it is possible and prudent to do so, within the period 2014-2019**.
Application of the sustainability factor

• The **update of the Stability Program** each year should include forecasts of income and expenditures of the public pension system, prepared by the Secretary of State for Social Security.

• **This includes forecasts** for the current year end and six- or seven-year projections.

• The **Independent Fiscal Authority (AIRF, for the Spanish acronym)** shall also be required to approve these forecasts before the AGF is applied.

• Every year the **Budget** shall lay down the nominal growth of pensions for the coming year calculated on application of the AGF.
Conclusions

• A transparent rule that:
  1. Ensures that the Spanish public pension system is structurally balanced
  2. Reinforces the system, protecting it against demographic tensions and changing economic conditions

• The sustainability factor ensures a medium to long-term balance between the income and expenses of the public pension system which should be permanently monitored to guarantee it fulfils its objectives:
  1. sufficient pensions;
  2. intergenerational equity; and
  3. long-term sustainability
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