AIReF Independent Authority for Fiscal Responsibility

Report on the Pension Expenditure Rule

Opinion on the Long-Term Sustainability of the GG

AIReF

March 31st, 2025

1 Introduction

Today we publish the First Report on the Pension Expenditure Rule together with the Opinion on the Long-Term Sustainability of the GG

This joint publication was established in the first Sustainability Opinion in March 2023.

1 LIMITATIONS AND WEAKNESSES OF THE PENSION EXPENDITURE RULE

The rule itself is not a guarantee of sustainability. There is no sustainability analysis after the thresholds have been set. These thresholds are the result of an agreement between the Government and the Commission in the framework of the RTRP

Introduced outside of European reform under way: no guarantee of consistency

Undermines AIReF's supervisory capacity and the exercise of its independence: limitation of the analysis to revenue measures, which, moreover, must be subject to assumptions and methodologies alien to AIReF and common to all countries

2 AIReF MANDATE: SUSTAINABILITY OF PUBLIC FINANCES

Sustainability requires an integral rather than fragmented view of public finances: a prerequisite for making the various economic policy targets compatible with sustainability

Pension spending is not the only source of expenditure pressure. Ageing impacts on other relevant items. Other discretionary commitments must be added

Requires an overview of the dynamics of revenue and expenditure

By means of this joint publication, AIReF provides an independent and detailed analysis of the outlook for pensions and public finances as objective elements, both of which are necessary for decision-making

In addition, in the 2023 Opinion, we made a number of proposals on which limited progress has been made

1

GEARED TO GUARANTEE SUSTAINABILITY

- To structure a medium- and long-term fiscal strategy and comprehensive reform of the national framework
- Pensions: monitoring and evaluation of the impact of reforms and spending (adequacy, contributory nature, equity)
- Spending on healthcare: evaluate spending on staff and human resources
- Risks: report on specific fiscal risks
- RTRP: governance for evaluation

2

SPECIFIC TO PENSION EXPENDITURE RULE: to mitigate some of its limitations

- Ensure coherence and consistency between all fiscal rules
- AIReF's assistance to the Working Group on Ageing (observers)
- Agreement on exchanges of information and relations between AIReF and the Government
- Publication of forecasts, assumptions and methodology used for the determination of spending levels and impact of measures.

AIReF has incorporated some of these proposals in its own analyses: analysis of fiscal risks, widening the scope of analysis of spending on pensions, evaluation of healthcare human resources of the ARs

2 Report on the Pension Expenditure Rule

Regulatory framework for Report on Evaluation of Pension Expenditure Rule: new mandatory report for AIReF to be published every three years as from 2025

Royal Decree-Law 2/2023 of March 16th
Second Additional Provision. Evaluation report in which AIReF is required to verify whether the so-called "safeguard clause" is complied with

This clause sets thresholds for average expenditure and revenue 2022-2050

- **Caps pension spending at 15% of GDP,** if **revenue measures taken** after 2020 to strengthen public pension revenue have an impact of at least **1.7% of GDP.**
- If revenue impact > 1.7: allows for higher spending due to the excess
- If revenue impact < 1.7: spending is reduced by the shortfall

Average net expenditure rule of 13.3% of GDP

Mandate to AIReF and methodology to be followed

- **Calculate the impact** of **measures to strengthen the revenue side of the public pension system** using assumptions from the latest Ageing Report
- Calculate the rule or calculation that **net expenditure (taking the series of the last Report)** does not exceed 13.3% of GDP.

Correction mechanism in case of deviations from thresholds

- **Government considers measures** (pension expenditure and/or revenue). AIReF estimates the impact of the measures
- **Automatic increase in contributions** if no agreement is reached

Royal Decree 100/2025 of February 18th.
Article 12. Establishes regulatory precisions for reasons of legal certainty and economic importance

Specifies revenue from the public pension system:

- General Soc. Sec. Law: contributions, State transfers and allocation of budgets to civil servants' pensions

Specifies type of measures:

- With direct impact on pension system revenue (contribution bases and rates, IEM, solidarity contribution)
- Affecting the number of persons liable to contributions and labour market reforms and other labour or employment regulations that structurally impact (directly/indirectly) on revenue

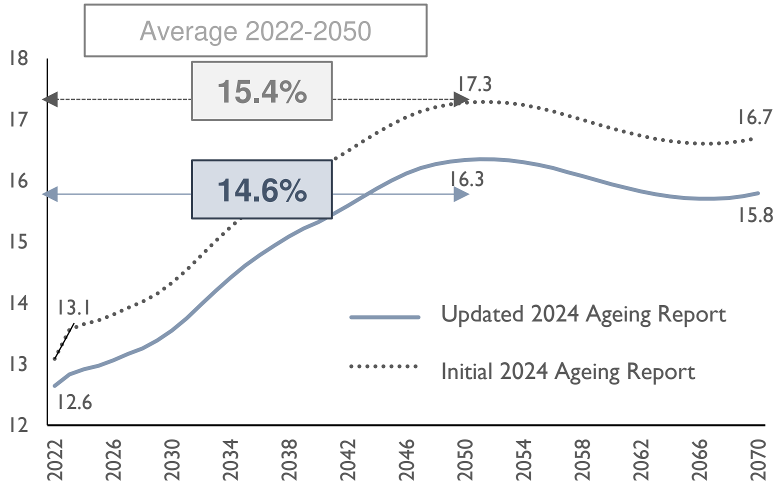
Clarify reference expenditure: latest Report, updated with official observed GDP and pension expenditure data. Ministry of Inclusion, Social Security and Migration (MISSM) should provide both series up to 2050 using the **rates** from the latest Ageing Report.

Scope of spending:
Soc. Sec. & civil serv. pensions

Publication:
by April 1st, 2025

Results of pension expenditure rule: limit established by Royal Decree-Law 2/2023 is not exceeded

PENSION EXPENDITURE (% GDP)



MISSM has provided spending series updating the GDP and pension spending data observed for 2022 and 2023

- Although 2023 spending is revised upwards, the higher GDP revision implies a reduction in spending/GDP by 0.7 points
- The subsequent application of the report's growth rates widens the difference in average spending/GDP 2022-2050 to 0.8 pp

Average pension expenditure 2022-2050 (% GDP):
14.6% < 15% threshold

ESTIMATED IMPACT OF REVENUE MEASURES (% GDP)

With assumptions from the Ageing Report Methodological technical documents	Impact to date	Average impact 2022-2050
Change in revenue	**0.8**	**1.4**
Inter-generational Equity Mechanism	0.2	0.4
Evolution of Maximum Contribution Bases	0.2	0.3
Additional Solidarity Contribution	-	0.1
Reform of Contributions for the Self-Employed	-	0.2
Transfers	0.2	0.3
Increases in the Minimum Wage	0.1	0.1
Labour Measures	-	-

Most of the increase observed since 2020 in transfers to SSFs (1.3% of GDP) do not represent strengthening. AIReF considers only 0.3% as those that finance:

- Contribution reductions: 0.2 permanent as of 2021
- Non-contributory spending increases: 0.1 measures at start of 2023

Complex estimation

- Combination of tools
- Previous seminars

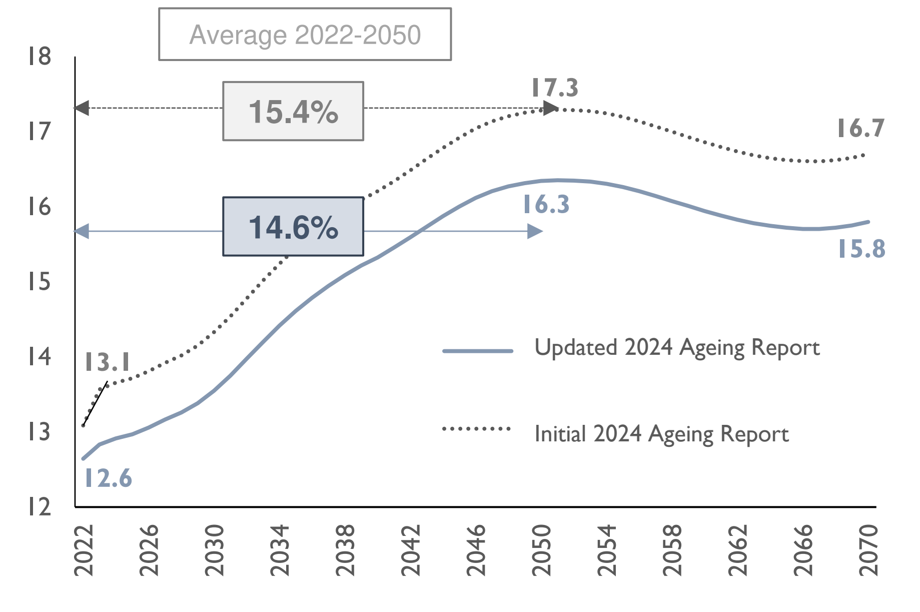
Impact of average revenue measures 2022-2050 (% GDP):
1.4% < the 1.7% threshold

Average net pension expenditure 2022-2050 (% GDP)
13.2% < the 13.3% threshold

Even if the expenditure rule is met, the underlying trend must be addressed, as it is key to sustainability

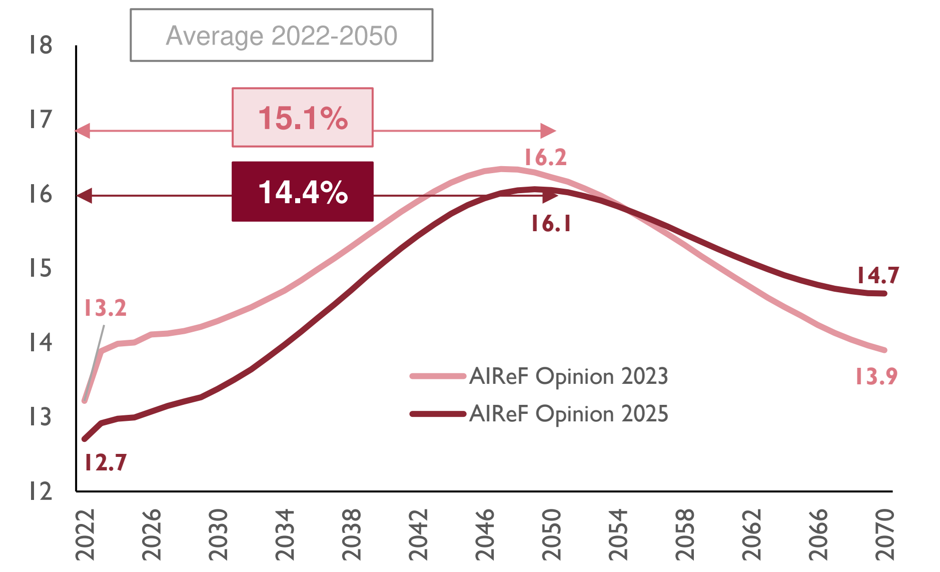
AIReF's view of pension system is no improvement on 2023 Opinion

PENSION EXPENDITURE. AGEING REP. (% GDP)



Same slope

AIReF PENSION EXPENDITURE (% GDP)



Steeper slope:

Higher growth in pension expenditure/GDP 2022-2050: 3 pp increase in 2023 Opinion vs. 3.4 pp increase in 2025 Opinion

Some indicators of the dynamics of the pension system

	2022	2050
Persons of working age for every person 66 year old and over	3.8	2.1
Ratio average pension/average salary	65.6	56.7

Ageing dominates the dynamics of the distribution system

This increase in expenditure is compatible with a reduction in the system's generosity rate.

IMPACT OF REFORM IN 2050

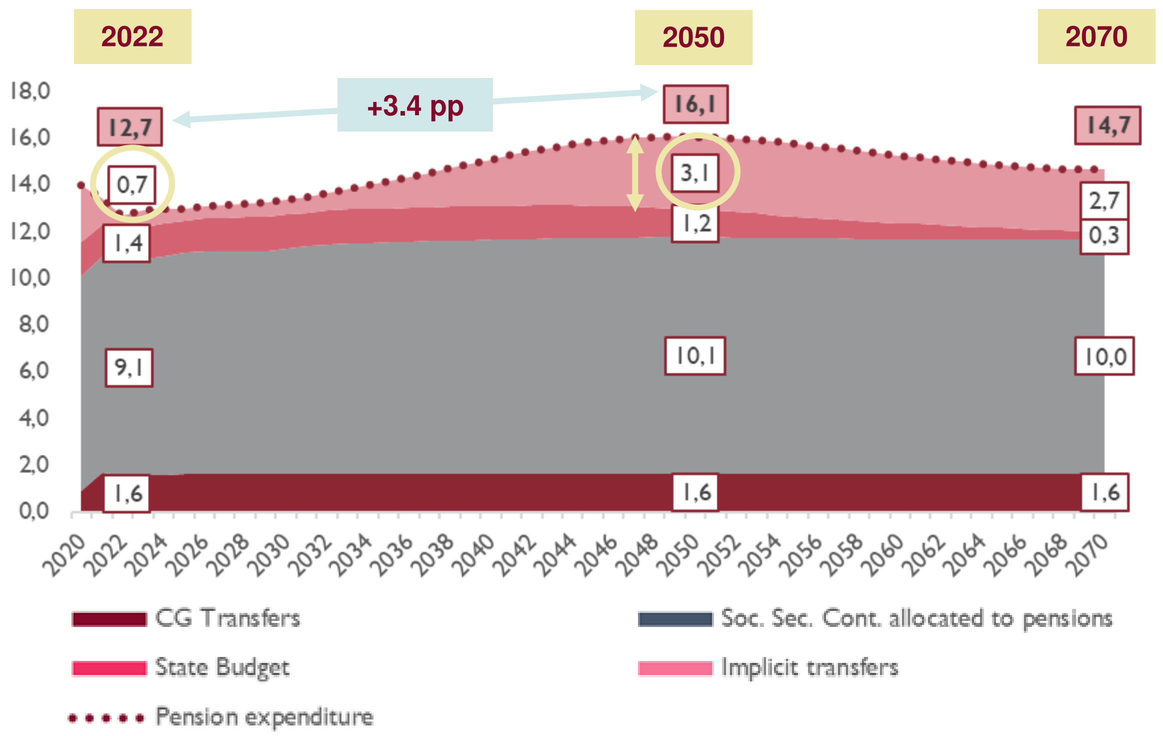
- Increase in spending by 2.7 points of GDP
- Revenue growth of 1.4 points of GDP
- Increase in IRR: 0.5 points
- Increase in generosity rate by 13 points

compared with the situation before the reform

Net expenditure threshold is not an adequate indicator of sustainability of pension system

Theoretical exercise on the sources of financing of the spending considered in the expenditure rule

SOURCES OF FINANCING OF THE PUBLIC PENSION SYSTEM



The increase in pension expenditure/GDP projected by AIReF between 2022-2050 (3.4 pp) would require an increase in implicit transfers from the rest of the SSFs or CG of 2.4 points of GDP.

- **Under the current rules:**
  - ✓ Contributions only cover 1 point of the spending increase
  - ✓ Transfers would remain stable
  - ✓ Allocation to civil servants' pensions cut by 0.2 points

In the absence of measures, these transfers imply a reduction of of revenue available for other policies or recourse to borrowing. Compatible with MTP commitments?

Partial view → **Opinion on Sustainability**

Methodological weaknesses are evident and time inconsistency problems

1 Influence of the timing of evaluation

- **Whether or not the safeguard** clause **is complied with** crucially depends on the point in time at which it is evaluated: far from the stable and structural concept of sustainability
- **The incorporation of GDP revisions has meant a change in the diagnosis of compliance with the rule, but not in the evolution of the pension system**
  (0.8-point revision means moving to non-compliance with respect to 2023)

2 Sensitivity of results to changes in scenarios

- Particular sensitivity to changes in **potential growth and migration flows.** Assumptions subject to high long-term uncertainty
- **Example**: average pension expenditure would rise from 14.6% of GDP to 14.8% of GDP and an escape clause would have to be triggered if average GDP growth 2022/50 were 0.2 points lower

3 Methodological issues

- The pension expenditure rule **restricts assumptions and results of pension spending forecasts** to those of the Ageing Report
- Assumptions **agreed by Member States and the Commission** using common methodologies and assumptions without taking into account national specificities (as the AIReF Opinion does)

4 Relevance of pension dynamics

- Despite compliance with the rule, all the projections for pension expenditure (Ageing Report and AIReF Opinions 2023 and 2025) show **upward pressures: more than 3 points of GDP 2022-2050**
  - ➢ AIReF's current estimate (+3.4 pp) shows even greater pressure by 0.4 points compared with the 2023 Opinion

The Second Opinion on the Long-term Sustainability of the GG provides a comprehensive and independent view of sustainability

Addresses sustainability from an integral and independent perspective

- The GG Sector
- Revenue and expenditure dynamics
- Forms part of the reform of European governance: extension of the November 2024 Report on the MTP and basis for the MTP Monitoring Report
- Updates demographic, economic and budgetary projections to 2050 and 2070

Adequacy and contributory nature: two new dimensions in pension analysis

- Analysis through microsimulations
- Two indicators: replacement rate and Internal Rate of Return (IRR)
- Individual estimation and intra- and inter-generational equity analysis
- Special focus on the impact of reforms 2021-2023

Complements the recent Opinion on Fiscal Risks

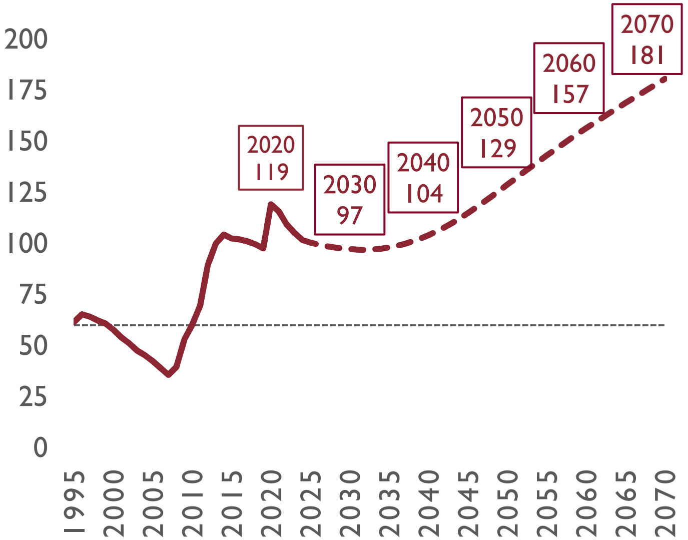
- Looks further into the potential impact of climate change on public finances
- Based on *Oxford Economics Global Economic Model*
- Consideration of various climate scenarios for evaluation of climate change impacts and mitigation policies

The key messages on sustainability remain unchanged from the 2023 Opinion

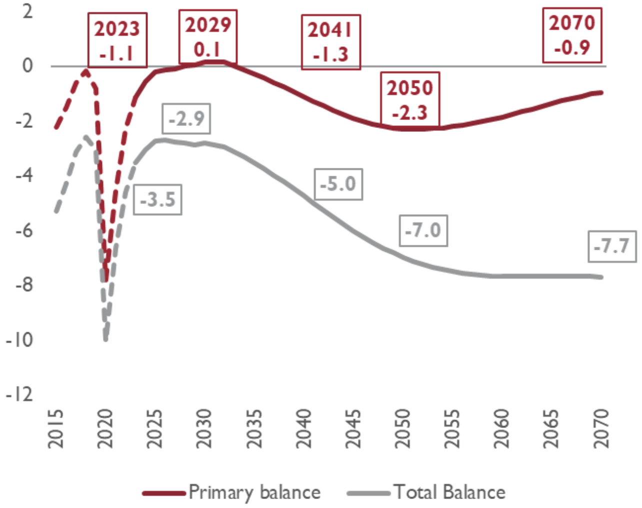
AIReF once again notes upward pressures on public debt and resulting risks to sustainability

In the no-policy change scenario, not including the MTP commitment on primary expenditure net of revenue measures, debt reaches 129% of GDP in 2050 and the headline deficit rises in the 2030s to 7% of GDP by 2050

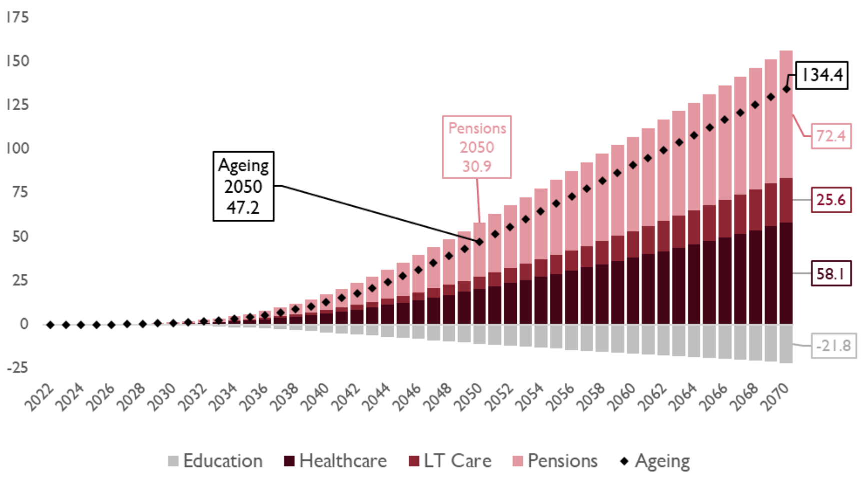
PUBLIC DEBT (% GDP)



PUBLIC DEFICIT (% GDP)



CONTRIBUTIONS TO EVOLUTION OF DEBT OF THE COMPONENTS OF SPENDING ON AGEING (PP GDP)



- **Upward revision of migration and downward revision of fertility with respect to the 2023 Opinion**
- **Long-term real growth of 1.3%: strong performance of productivity**
- **Ageing-related spending pressures:**
  - Average pension spending of 14.4% of GDP between 2022-2050
  - Health spending rises by 1.2 points of GDP between 2022-2050
  - Spending on long-term care increases by 0.6 points of GDP between 2022-2050
- **Rising interest burden, reaching 4.7% of GDP by 2050**

Sensitivity scenarios are presented for the uncertainty of some of the assumptions of the baseline scenario

An alternative compliance scenario is presented that would require a total adjustment of 3.16 points to ensure a downward debt path: adjustment spread over four fiscal plans (2025-2040)

The impact of increasing defence spending is analysed: for every 0.5 GDP point increase in defence expenditure between 2025-2028, an additional fiscal cutback of 0.13 points of GDP per annum over the period 2029-2032 would be needed to put debt on a downward path

Considering weaknesses of pension expenditure rule identified in its report, AIReF formulates a recommendation addressed to the MISSM

At the moment, there are three expenditure rules in the Spanish fiscal framework that are not consistent with each other

EUROPEAN EXPENDITURE RULE

- Applicable to the GG Sector
- In terms of growth in primary expenditure net of revenue measures
- Four-year MTP
- General limitation on net primary expenditure growth (average 3% 2025-2031, declining profile)

NATIONAL EXPENDITURE RULE AS DEFINED IN ORGANIC LAW ON BUDGETARY STABILITY AND FINANCIAL SUSTAINABILITY

- Individually applicable to each sub-sector except SSFs

NATIONAL EXPENDITURE RULE FOR PENSIONS REGULATED IN RDL 2/2023

- Specifically applicable to spending on pensions
- In terms of the level of expenditure net of revenue measures
- Review every three years
- Even if the rule is met, pension expenditure could increase by 4% between 2025-2031

Harmonisation needed to simplify and coordinate the current system of expenditure rules, improving the coherence of the system of fiscal rules and ensuring their simultaneous compliance

AIReF recommends to the Ministry of Inclusion, Social Security and Migration that, in the process of adapting the national fiscal framework to the new European framework, it should integrate the pension expenditure rule, bringing it into line with the targets and deadlines of both the European and national fiscal frameworks

And two proposals contained in new Opinion on Sustainability addressed to Ministry of Finance

The Opinion again highlights long-term pressures on public finances and the consequent need to pay attention to sustainability

The European framework focuses on sustainability and requires national fiscal frameworks consistent with this approach

PROPOSAL 1

Harness the transposition of the European fiscal framework into national law to:

- Strengthen ownership of its core principles: sustainability at the heart and ensure effective, realistic and credible medium-term budgetary planning
- Push for ambitious reform: beyond the minimum requirements of the Directive for medium-term planning (fiscal risks, measures and data disaggregated by sub-sector)

Coexistence of three expenditure rules:

- Differences between national and European rules are unjustified
- The desirability of a single integrated and coherent framework of rules

PROPOSAL 2

In the process of adapting to the new European framework:

- Unify requirements for the calculation of the national expenditure rule with those of the European rule
- Integrate the pension expenditure rule, aligning it with the targets and deadlines of the fiscal framework

3 Opinion on the Long-Term Sustainability of the GG

3.1 Update of population projections

AIReF revises demographic projection tools to incorporate new sources of information and project immigration in short term

Same conceptual framework for the projection of demographic phenomena as in the 2023 Opinion, but incorporating:

New sources of demographic information for Spain	Gravity model for migration	Short-term migration model
Annual Population Census Continuous Population Statistics (CPS) Migration and Change of Residence Statistics (MCRS)	New data source for GDP growth in origin and destination countries GDP growth of source and destination countries → IIASA	
A more accurate and up-to-date view of the demographic reality, but it has also meant changes in the age structure of the population and in mortality and fertility estimates	**Avoids perpetuating GDP per capita growth differentials, regardless of population projections**	**In order to include the recent dynamism of migratory flows and short-term projection**

AIReF revises fertility projections downwards, but downside risks persist given structural nature of reasons justifying them

REASONS FOR LOW FERTILITY

SUBJECTIVE PERCEPTION
(Main reasons why people have few children - Question 4)

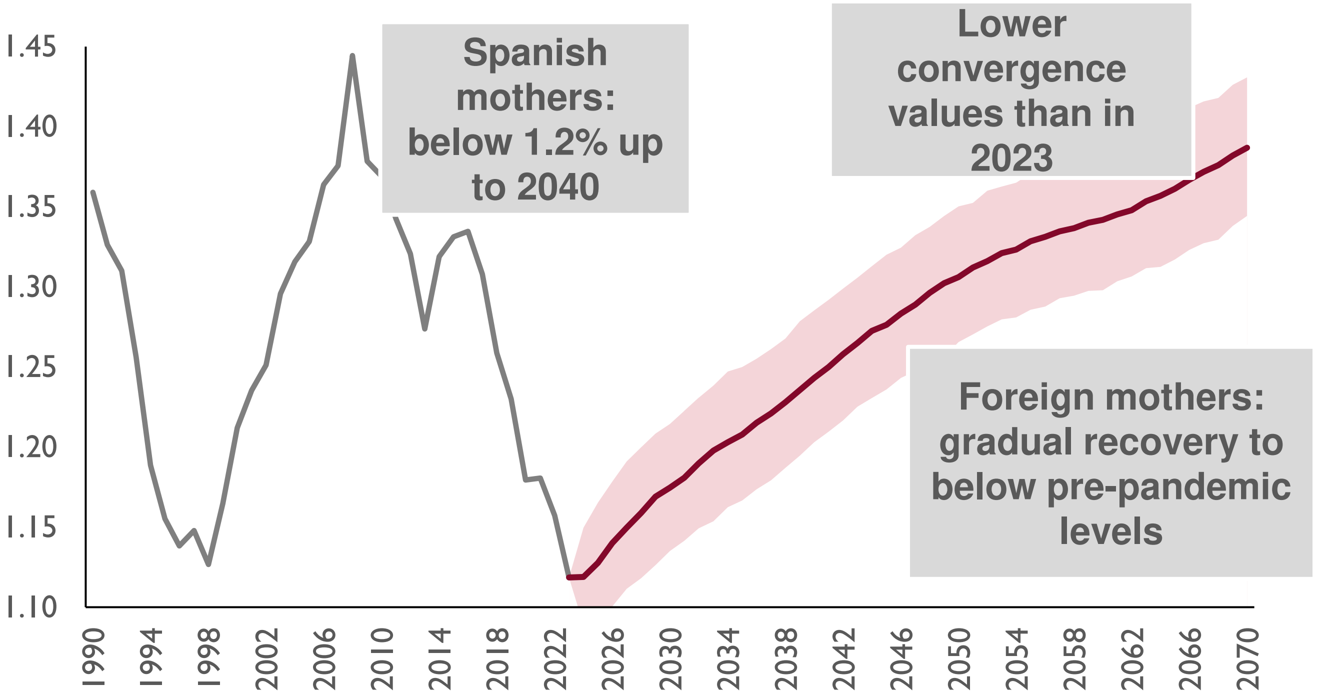
Lack of sufficient financial resources
Problems of work-life balance
Employment reasons

PERSONAL EXPERIENCE
(Main reasons that would make you consider, or made you consider, not having children or having fewer children - Question 21a)

House prices
Unemployment levels
Prospects for future generations

Source: CIS

PROJECTIONS OF THE NUMBER OF CHILDREN PER WOMAN

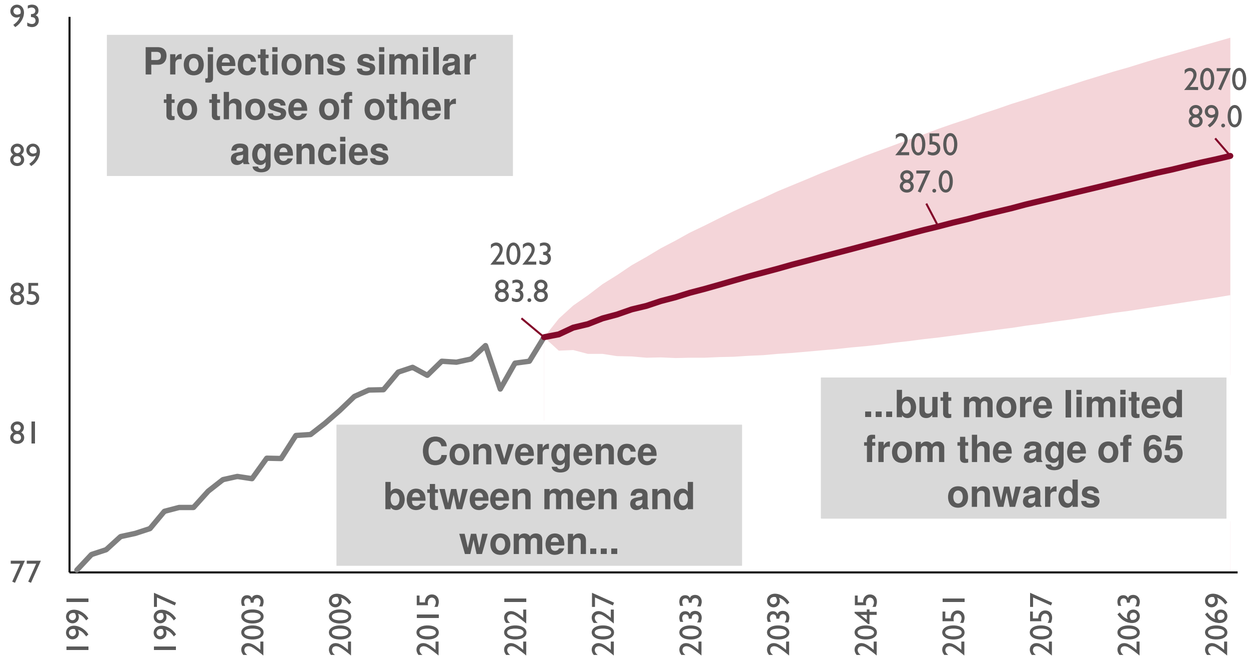


Sources: INE, EUROSTAT and AIReF

- The latest **fertility** data reflect a global downward trend
- **Spain**'s birth rate continues to fall and is one of the countries with the lowest fertility rates
- **Foreign mothers** quickly assimilate the childbearing patterns of Spanish mothers (in 2002, fertility rates were 1.8 vs. 1.2 and today they are 1.3 vs. 1.1)

AIReF's life expectancy projections are maintained at high levels, similar to those of 2023 Opinion

LIFE EXPECTANCY AT BIRTH (YEARS)

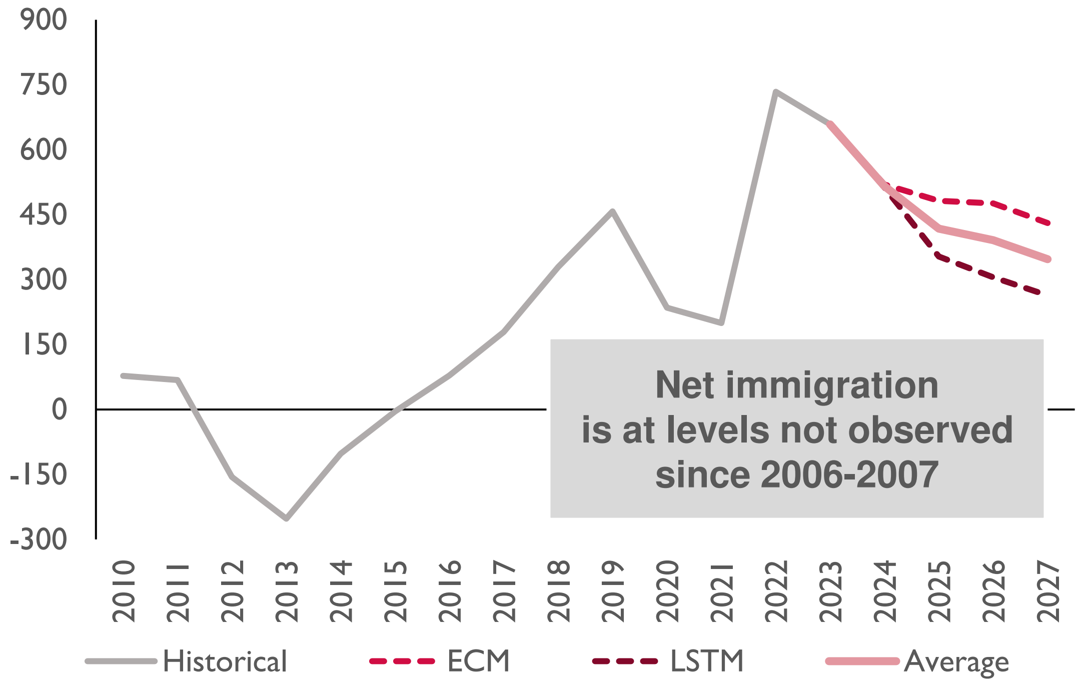


Sources: INE, EUROSTAT and AIReF

- At an international level, Spain stands out for its **comparatively high longevity**, especially in the case of women
- **Life expectancy** for women is estimated to reach 89.3 years in 2050 compared with 84.7 years for men, almost identical to the figures estimated in the 2023 Opinion

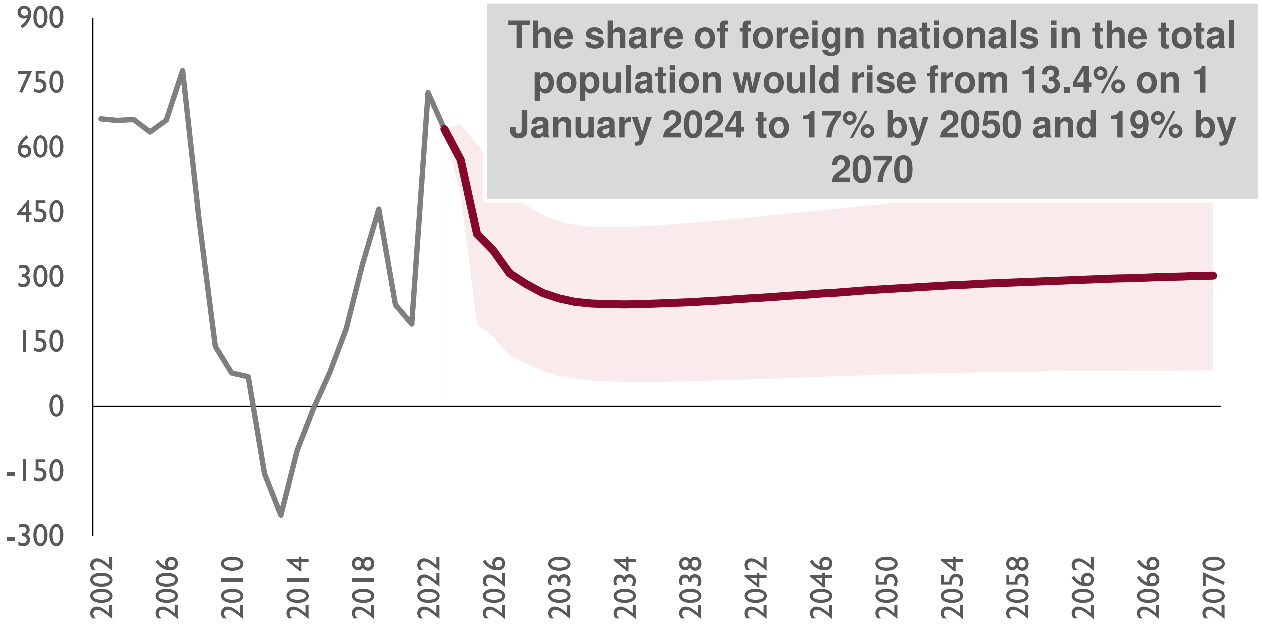
Short- and medium-term migration revised upwards in a context of high uncertainty over global migration policy

SHORT-TERM MODELS. NET FOREIGN MIGRATION (THOUSAND PEOPLE)



Sources: INE, EUROSTAT and AIReF

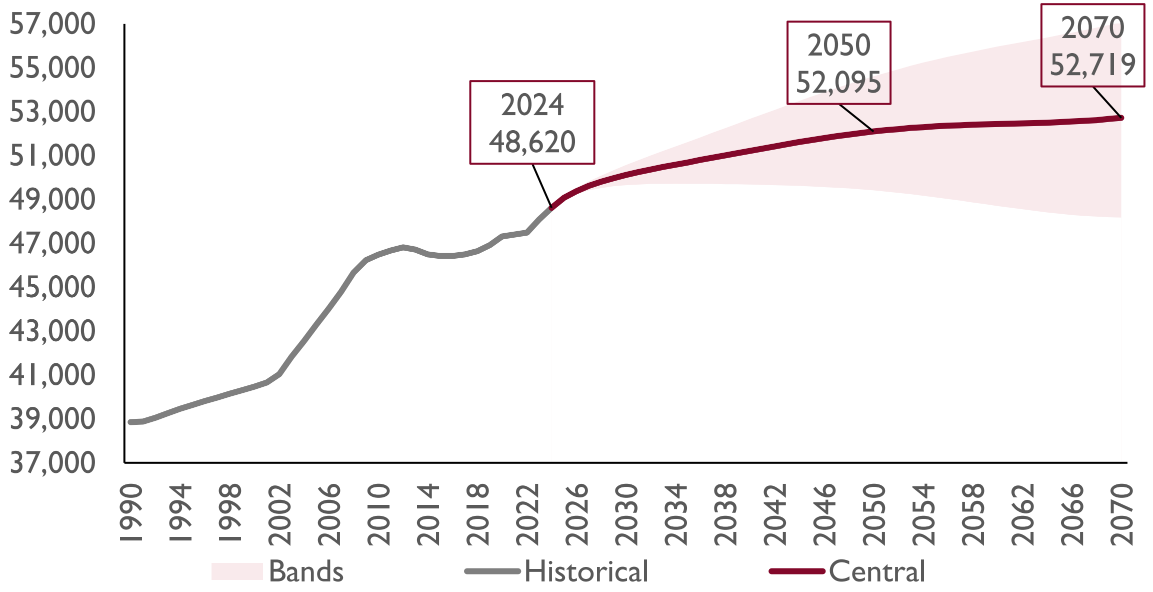
NET FOREIGN MIGRATION (THOUSAND PEOPLE)



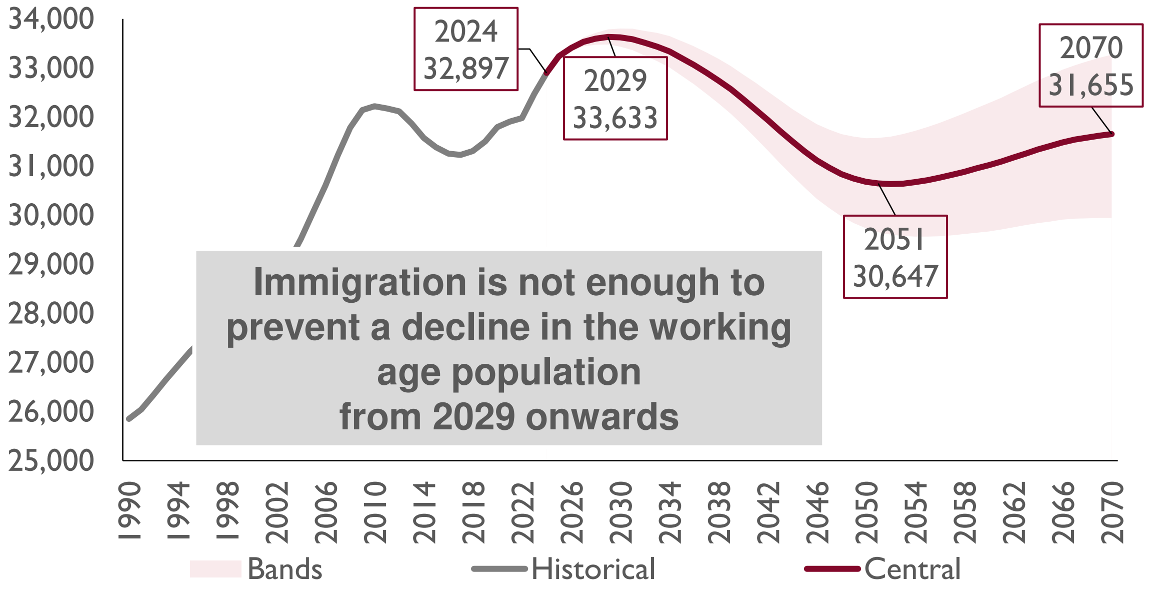
- **Foreign net immigration flows** would remain high in the next two years, but below those observed in 2022-2024 **(400m and 360m in** 2025 and 2026 vs. 570m observed in 2024)
- In Spain, the Law on Immigration, together with the policies of the US Administration, could push immigration higher than expected

Population projections: the working-age population is projected to start declining from 2029 onwards

POPULATION PROJECTIONS
(THOUSAND PEOPLE)



PROJECTIONS OF POPULATION BETWEEN 16 AND 66 YEARS OLD
(THOUSAND PEOPLE)



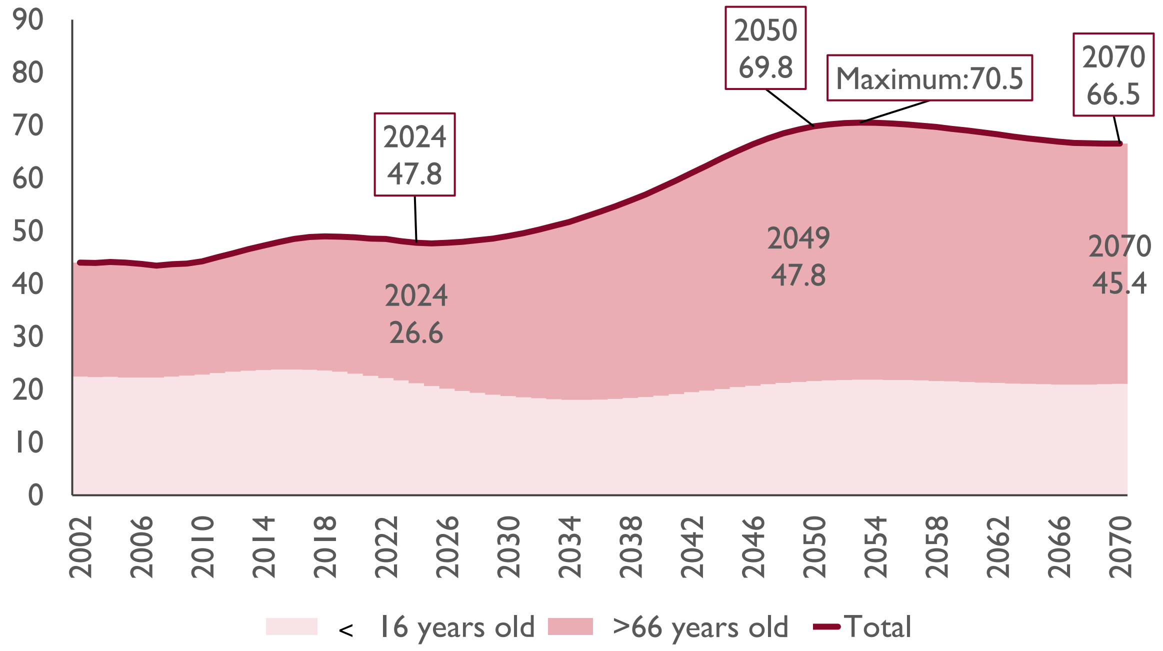
Sources: INE, EUROSTAT and AIReF

In the baseline scenario. AIReF estimates that Spain's **total population** will increase from 48.6 million on 1 January 2024 to some 52.1 million in 2050 and 52.7 million in 2070, due to the gradual increase in longevity and, fundamentally, net foreign migration.

Dependency ratio shows an upward trend until end of 2050s, due to progressive ageing of the population

BREAKDOWN OF THE DEPENDENCY RATIO

(% OF THE POPULATION AGED 16 TO 66)



Sources: INE and AIReF

Could immigration offset the increase in the dependency ratio? Unlikely, as it would require a net migration flow of more than 1,000,000 additional people per year than expected

The weight of the population aged 60 and over in the total population is 21.2% in 2000 and 27.1% in 2024. By 2050, it will rise to 36.8%, according to AIReF projections

The median age (which leaves half the population below and half above) was 37 in 2000 and 45 in 2024. AIReF estimates that in 2050 it will be 49 years old

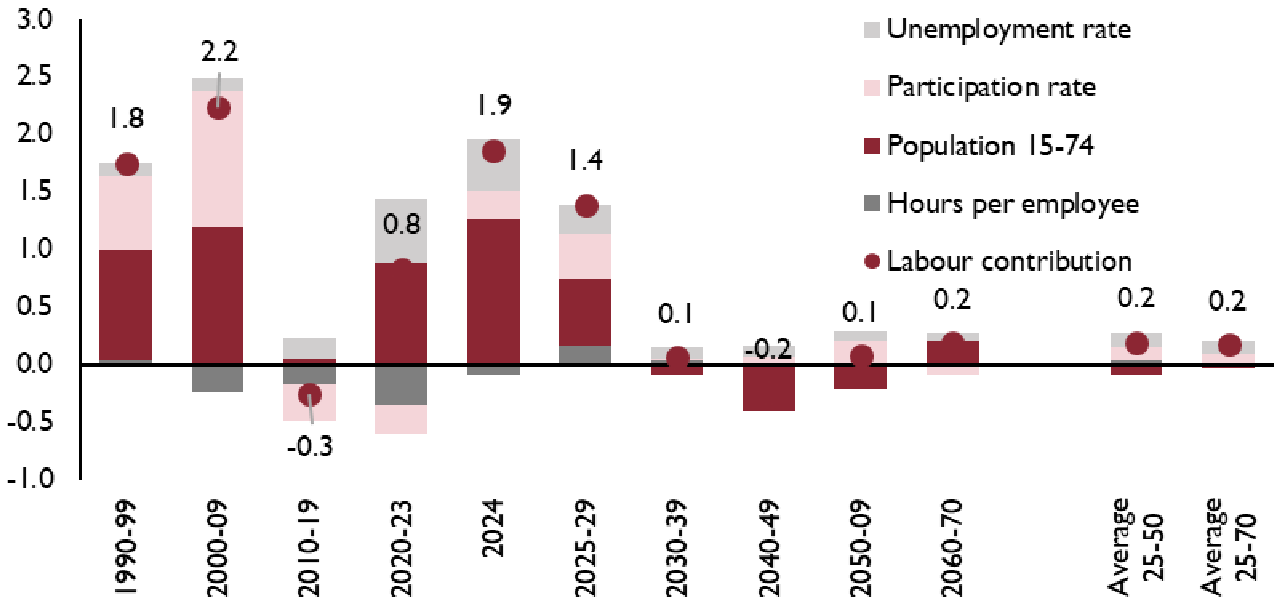
The old-age **dependency ratio** grows until the 2050s, almost doubling the current value. By 2050, there will be fewer than 1.4 workers for every inactive person (today the ratio is about 2:1)

3.2 Macroeconomic projections

Demographic projections lead to a fall in contribution of labour to growth from 2030 onwards, coinciding with a decline in working-age population

CONTRIBUTION OF THE LABOUR FACTOR TO POTENTIAL GROWTH

(PP)



Sources: INE and AIReF

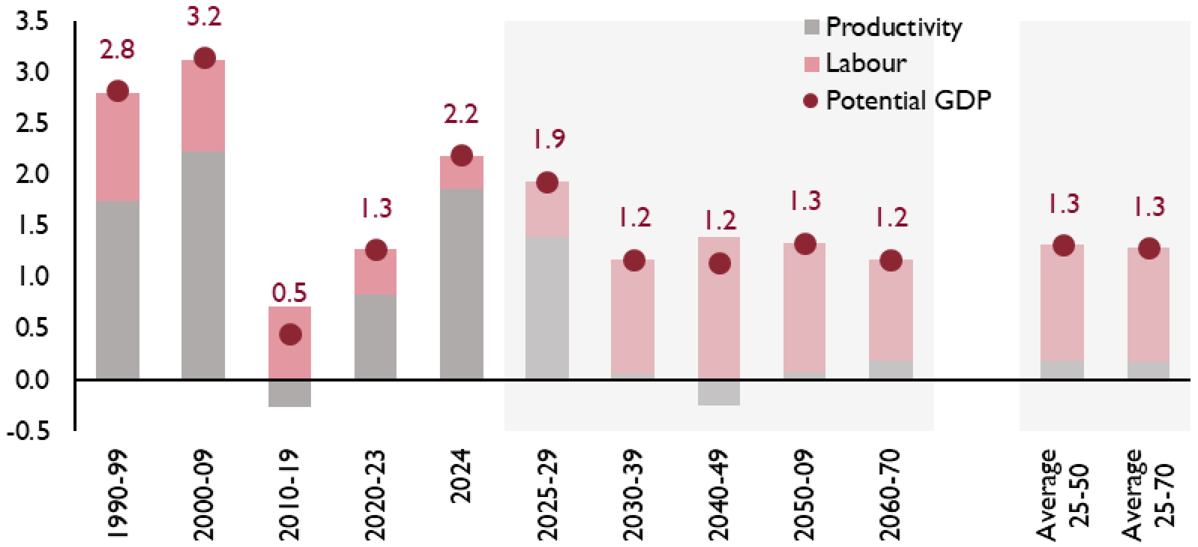
The expected increase in the participation rate of the elderly and the decline in unemployment to 7% over the projection horizon are not sufficient to offset the negative contribution of the decline in the working age population until the 2050s

Hours per worker remain constant over the projection horizon, with downside risks

The **contribution of labour** has been the key driver of economic growth in Spain and will be depleted as the working-age population falls

Even so, AIReF projects that real growth in the Spanish economy will tend towards 1.3% in the long term, the same rate as in the prior 2023 Opinion

POTENTIAL GDP GROWTH (%)



Source: AIReF

Note: Labour is expressed as total hours worked in the economy, while productivity is expressed as GDP per hour worked. All variables are expressed in real terms.

Potential growth might seem low, but:

(1) In AIReF's scenario, **potential GDP per working-age population** would grow at an average rate of 1.1% over the period 2025-2070, higher than the 0.5% observed over the last 25 years

(2) Achieving this growth in a context of a shrinking working age population requires **demanding productivity growth** relative to the performance of recent decades

In an adverse demographic context, the great challenge is to achieve productivity growth that will enable growth rates projected by AIReF to be attained

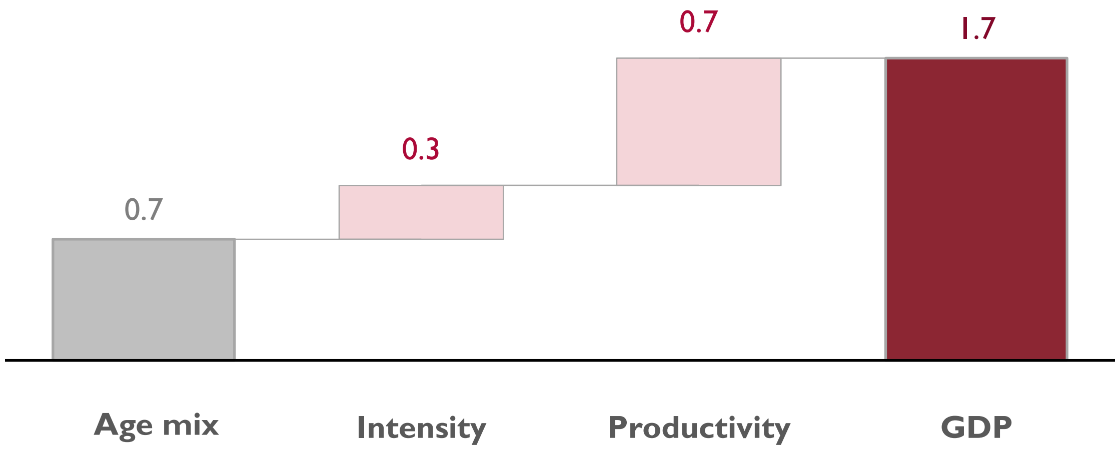
WHAT EXPLAINS THE GROWTH?

Working-age population

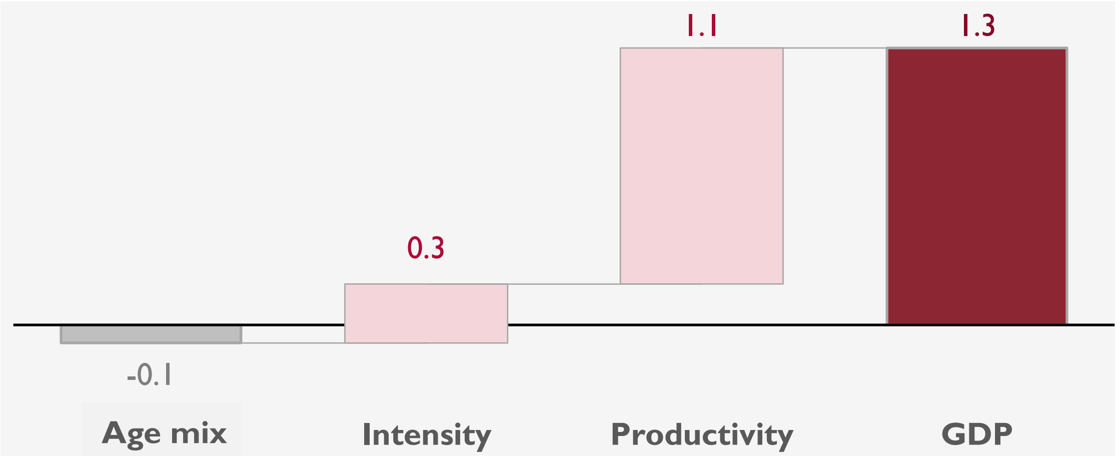
Intensity
How much each person works

Productivity
How productive is each hour worked

POTENTIAL GDP GROWTH 2000-2024 (%)



PROJECTION POTENTIAL GDP GROWTH 2025-2050 (%)



Achieving average growth of 1.3% in the coming years as expected by AIReF requires high growth in PRODUCTIVITY

In recent years, a number of structural reforms have been implemented in the Spanish economy, many of them in context of the RTRP

These reforms have allowed Spain, in the context of the new European framework of rules, to obtain an extension of the adjustment period in the Medium-Term Fiscal-Structural Plan, as the EC considers that these measures may have an impact on potential growth and sustainability

In the context of the evaluation of the expenditure rule, AIReF has a legal obligation to evaluate the impact of labour market reforms and other labour or employment regulations aimed at strengthening the public pension system

The quantification of the impact of all these measures is complex given the multitude of measures implemented and the need to assess their effects from a general equilibrium perspective

**GIVEN THE COMPLEXITY OF THE EXERCISE,
A THREE-PRONGED APPROACH HAS BEEN FOLLOWED BY AIREF**

A SERIES OF SEMINARS OF AN ACADEMIC NATURE

- Productivity
- Minimum wage
- Labour reform
- Immigration and the labour market

ANALYSIS OF EMPLOYMENT STABILITY INDICATORS

- CPLS
- LFS

MACROECONOMIC MODELS

- AQM
- OEGEM
- MEGAIREF

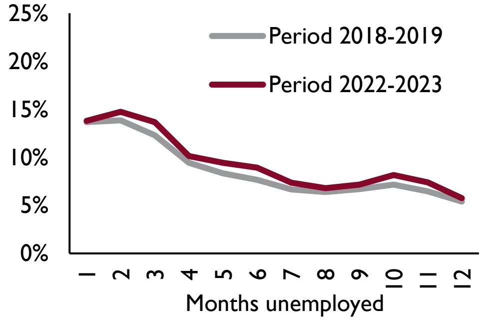
Recent years have seen improvements in market performance, but evidence on factors that justify this is inconclusive

Analysis using microeconomic data from the Continuous Professional Life Sample points to an increase in the rate of entry into employment

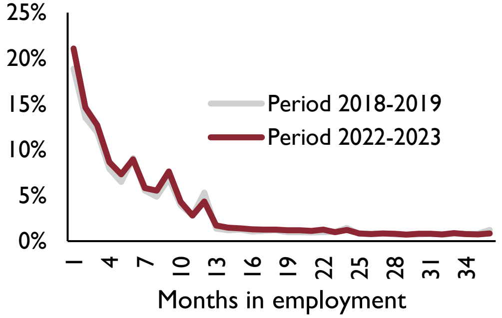
LFS microdata also point to a decline in the outflow rate from employment to unemployment

But some of these trends are common to other European countries and the model estimation, once other factors such as the economic cycle, falling real labour costs in 2022 and immigration are controlled for, is not conclusive about the impact of the reforms

RATE OF ENTRY INTO EMPLOYMENT ACCORDING TO UNEMPLOYMENT DURATION

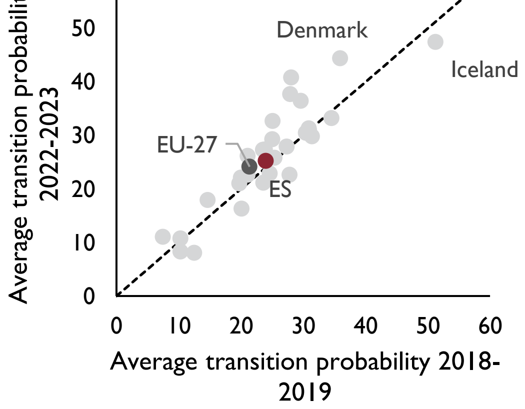


EXIT RATE FROM EMPLOYMENT TO NON-EMPLOYMENT. BY LENGTH OF EMPLOYMENT

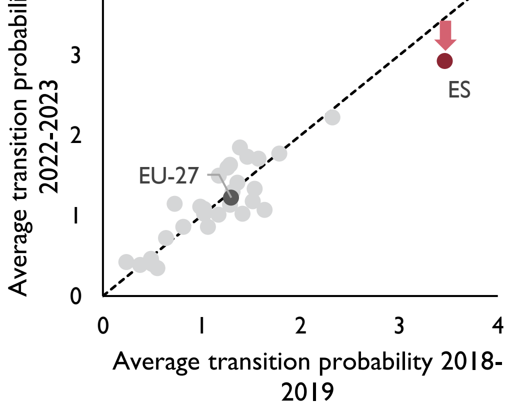


***Source*: CPLS**

TRANSITION FROM UNEMPLOYMENT TO EMPLOYMENT



TRANSITION FROM EMPLOYMENT TO UNEMPLOYMENT



***Source*: Eurostat**

In the case of the minimum wage, individuals are increasingly affected and the minimum wage is approximating most common wage in the economy

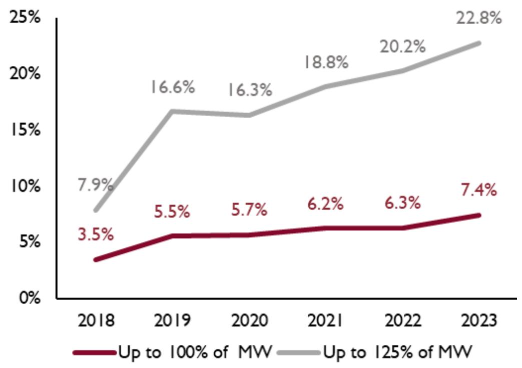
From 2018 to 2025, the minimum wage has risen from €735 to €1,184, a cumulative rise of 61%
According to the CPLS, the percentage of individuals earning the minimum wage has risen from 3.5% in 2018 to 7.4% in 2023

The minimum wage is increasingly close to the most common wage in the economy. The percentage of CPLS individuals with contribution bases up to 125% of the minimum wage has risen from 7.9% in 2018 to 22.8% in 2023

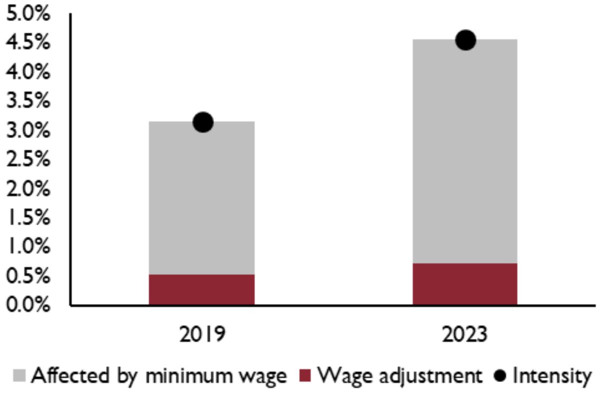
Impact of the increase in minimum wage is increasingly determined by percentage of individuals affected

AIReF's most recent estimates: the impact of the 2019 increase in the minimum wage would have reduced job creation by between 0.28 and 0.45 pp. In the case of 2023, the estimated effect would be somewhat greater, between 0.34 and 0.53 pp. Both values are within the range estimated by the literature

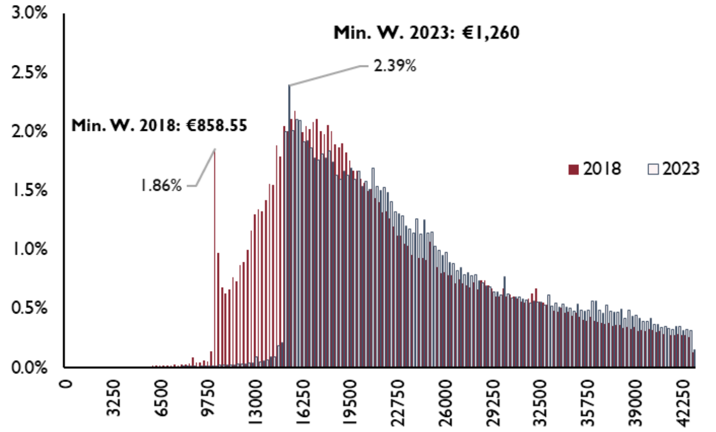
INCIDENCE MINIMUM WAGE (% OF WORKERS AFFECTED)



MINIMUM WAGE INTENSITY INDICATOR



SALARY DISTRIBUTION COMPARISON 2018-2023 (12 PAYMENTS)



Macroeconomic modelling suggests that the measures as a whole may have a positive but moderate impact on economic growth and employment

EMPLOYMENT MEASURES

Overall, the labour market measures according to these simulations have a positive, albeit moderate, impact on both GDP and employment, but no impact on the ratio of social contribution revenue to GDP.
A possible productivity channel has not been taken into account

IMPACT OF LABOUR MARKET MEASURES
(DEVIATIONS FROM THE SCENARIO WITHOUT MEASURES,% AND PERCENTAGE POINTS)

	t+5			t+10			Average 2022-2050		
	AQM	OEGEM	MEGAIReF	AQM	OEGEM	MEGAIReF	AQM	OEGEM	MEGAIReF
GDP	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Employment	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Public balance (% GDP)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Contributions	0.1	0.0	0.3	0.1	0.0	0.3	0.1	0.0	0.3
Contributions (% GDP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MINIMUM WAGE

In the AQM simulations, increases in the minimum wage have a slight expansionary effect, mainly through the demand channels. Supply channels (cost increases) tend to reduce the impact of the minimum wage on activity and employment

IMPACT OF THE INCREASE IN THE MINIMUM WAGE
(DEVIATIONS FROM THE SCENARIO WITHOUT MEASURES,% AND PERCENTAGE POINTS)

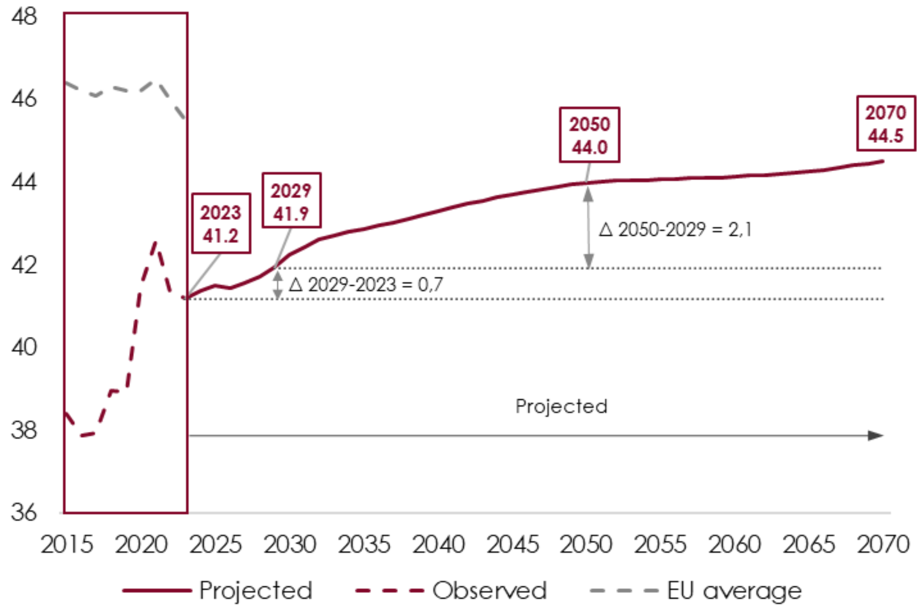
	t+5		t+10		Average 2022-2050	
	AQM	MEGAIReF	AQM	MEGAIReF	AQM	MEGAIReF
GDP	0.0	0.2	0.2	0.2	0.1	0.2
Employment	0.0	0.2	0.0	0.2	0.0	0.2
Public balance (% GDP)	0.1	0.0	0.4	0.0	0.3	0.0
Contributions	0.6	0.2	1.6	0.2	1.4	0.2
Contributions (% GDP)	0.1	0.0	0.2	0.0	0.1	0.0

Source: AIReF

3.3 Long-term fiscal scenario

Weight of revenue over GDP increases by 2.8 points up to 2050, with its growth rate then slowing

EVOLUTION OF REVENUE (% GDP)



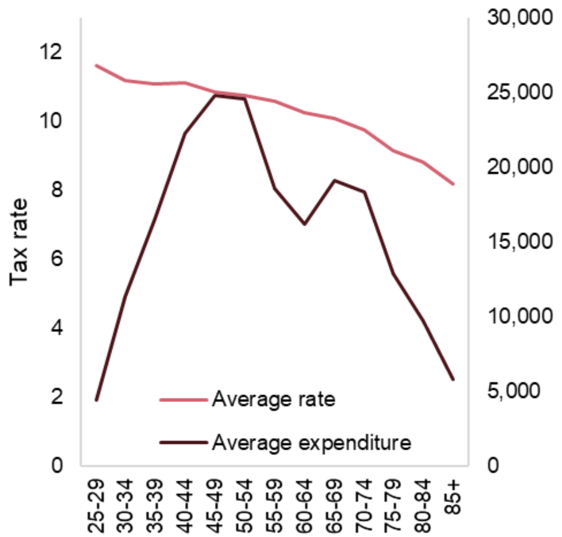
	2023	2029	2041	2050	2070	Δ2029-2023	Δ2050-2029	Δ2070-2050
Non-financial revenue	41.2	41.9	43.4	44.0	44.5	0.7	2.1	0.5
Modelled	34.1	35.7	37.1	37.7	38.3	1.5	2.1	0.5
VAT and tax on products	9.2	9.4	9.5	9.5	9.2	0.2	0.1	-0.3
Personal Income Tax	9.0	10.0	10.8	11.2	11.9	1.0	1.3	0.7
Corporate Income Tax	2.8	3.0	3.2	3.3	3.5	0.2	0.2	0.3
Social contributions	13.2	13.3	13.7	13.7	13.6	0.1	0.5	-0.2
Not modelled	7.1	6.3	6.3	6.3	6.3	-0.8	0.0	0.0

Source: AIReF

- **Revenue measures** explain 1 point of GDP of the 2.8 points of expected increase in revenue between 2023 and 2050
- These increases are explained by **taxes on income** due to fiscal drag and, to a lesser extent, by social contributions due to the measures approved
- The weight of **taxes on products** increases slightly until 2050, then decreases and returns to its 2023 weight due to the effect of ageing
- The weight of GG **revenue** increases by an additional 0.5 percentage points between 2050 and 2070

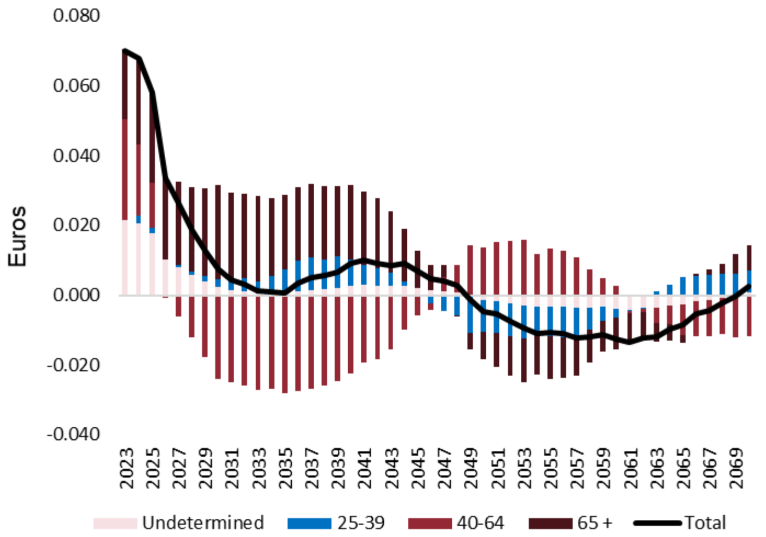
AIReF incorporates the effect of ageing into its revenue forecasts on the tax collection of the main taxes

AVERAGE VAT RATE AND AVERAGE SPENDING PER AGE GROUP



Source: AIReF

VAT COLLECTION (YEAR-ON-YEAR DIFFERENCES IN POINTS OF GDP)



- **VAT**: Estimating spending and the average VAT rate by age group: different consumption patterns by age
- Applying demographic changes to tax collection
- **Special Taxes**: have been modelled following the same methodology

- **PIT**: Differentiated estimation of tax collection by employees, the unemployed and pensioners to include expected demographic, labour and fiscal evolution
- Fiscal drag smoothed to reflect historical performance
- Elasticity with respect to GDP above unity over the whole period in line with historical observation

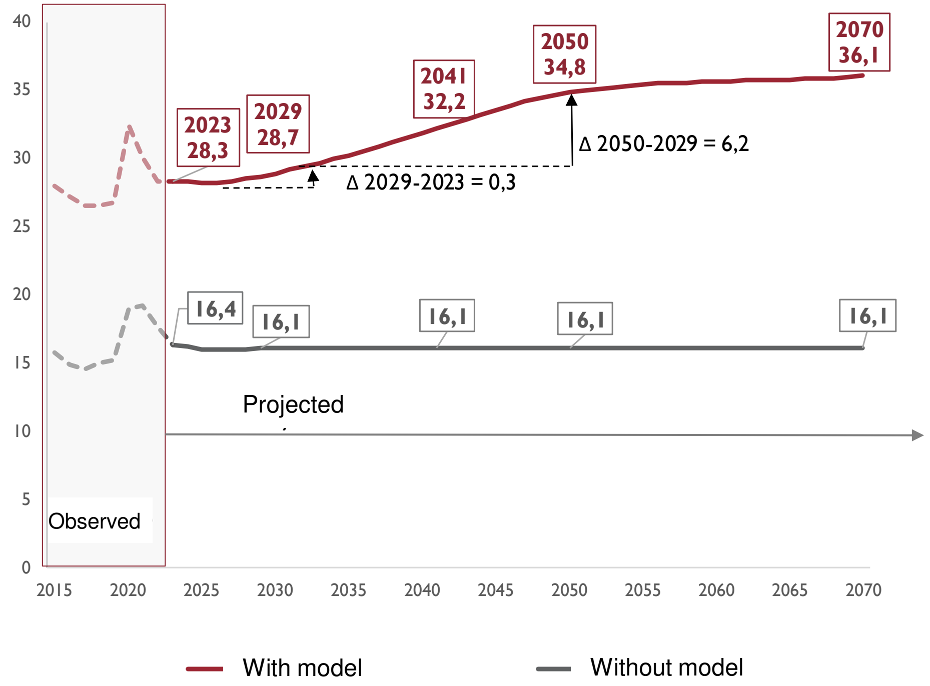
- **Corporate Income Tax**: Tax collection linked to GDP growth. Not directly influenced by ageing

- **Social contributions**: Estimation on the basis of the wage bill, distinguishing between employed and unemployed persons
- Consistent with changes in the working age population and the evolution of the labour market

The resulting aggregate elasticity of revenue over GDP is greater than unity

AIReF estimates spending growth of 6.5 points up to 2050, due to increased spending on pensions, healthcare and interest

EVOLUTION OF EXPENDITURE (% GDP)



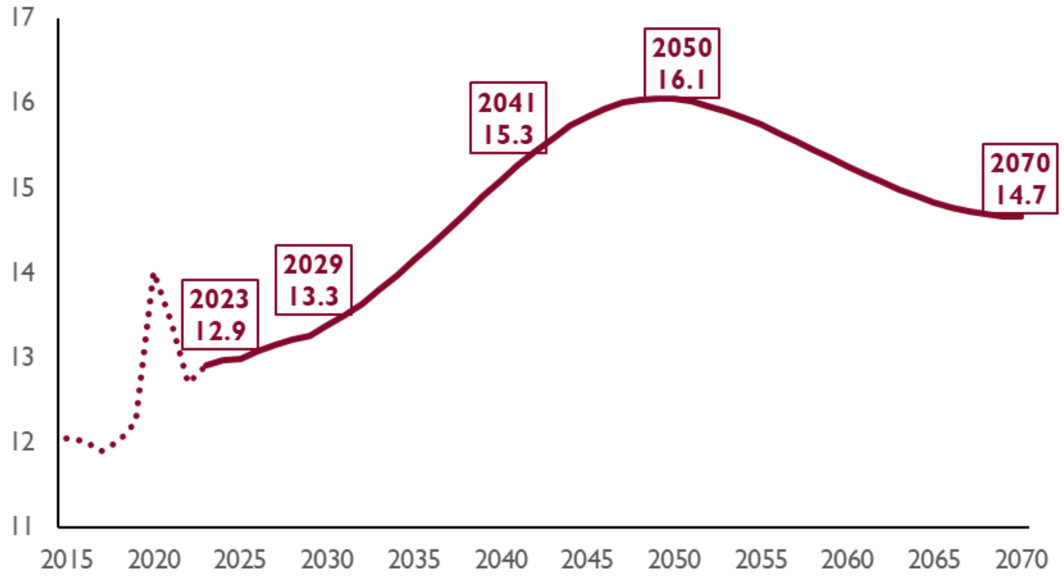
Sources: IGAE and AIReF

	2023	2029	2041	2050	2070	Δ 2029-2023	Δ 2050-2029	Δ 2070-2050
Non-financial expenditure	44.7	44.8	48.4	51.0	52.2	0.1	6.2	1.2
Modelled	28.3	28.7	32.2	34.8	36.1	0.3	6.2	1.2
Pensions	12.9	13.3	15.3	16.1	14.7	0.3	2.8	-1.4
Interest	2.4	2.9	3.7	4.7	6.8	0.5	1.8	2.1
Healthcare	6.6	6.5	7.5	8.0	8.1	0.0	1.5	0.1
Long-term care	0.8	0.8	1.2	1.4	1.8	0.1	0.6	0.3
Education	4.2	3.9	3.4	3.5	3.6	-0.3	-0.5	0.2
Unemployment	1.5	1.2	1.2	1.1	1.1	-0.3	0.0	0.0
Not modelled	16.4	16.1	16.1	16.1	16.1	-0.2	0.0	0.0

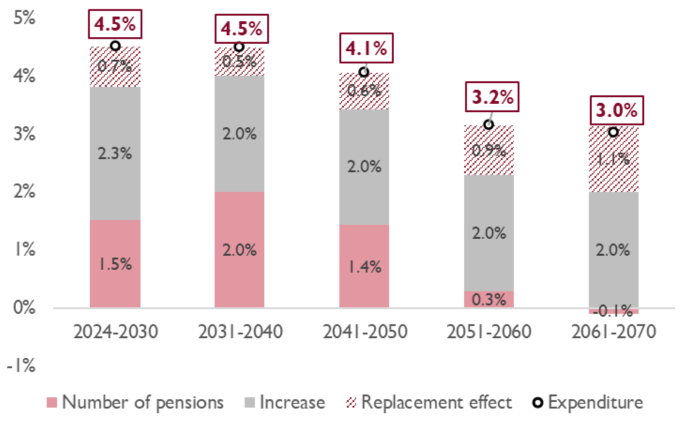
- AIReF estimates **moderate growth in spending in the medium term**, which then starts an **upward path until 2050** due to the increase in spending on pensions, interest, healthcare and long-term care
- **From 2050**, the slowdown in pension expenditure fails to offset the increase in spending on interest and long-term care, resulting in an **additional 1.2 percentage point increase**

AIReF estimates that pension expenditure will rise from 12.9% of GDP in 2023 to 16.1% of GDP in 2050, before falling to 14.7% in 2070

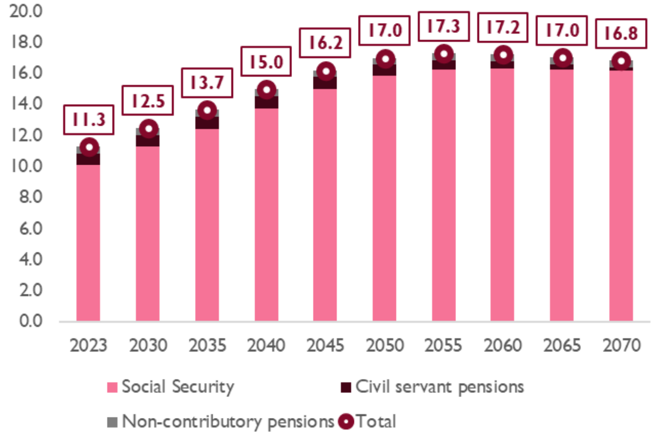
EVOLUTION OF PENSION EXPENDITURE (% GDP)



DRIVERS OF PENSION EXPENDITURE GROWTH



EVOLUTION OF NUMBER OF PENSIONS



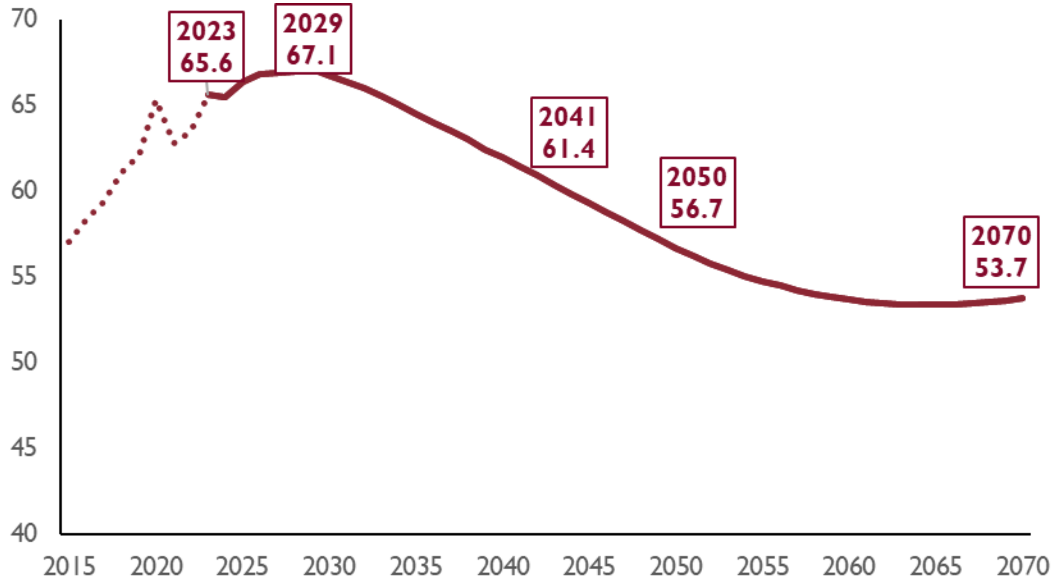
Sources: IGAE, Social Security and AIReF

- Social Security **pension expenditure** grows by more **than 4% until 2050**, mainly due to the evolution of the number of pensions, which reaches a growth rate of 2.1% in 2033. From 2050 onwards, there is an increase in the replacement effect that prevents a further reduction in the growth rate

- The **total number of pensions** grows to a **peak of 17.3 million in 2056**, and then starts a downward path until 2070, as the reduction in civil servants' pensions is not offset by an equivalent increase in Social Security pensions

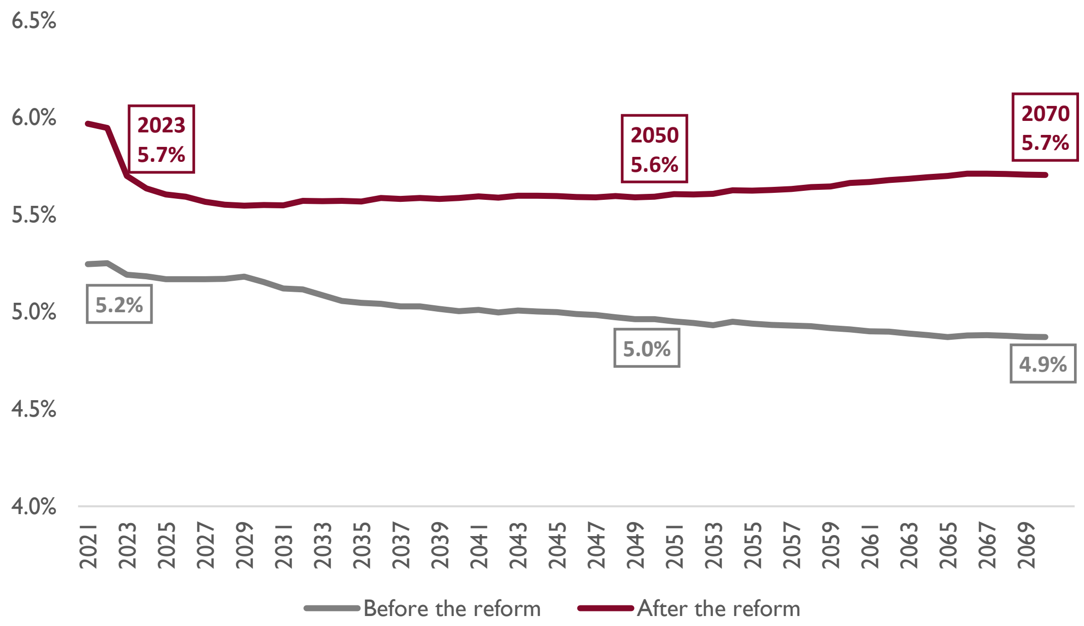
AIReF performs an analysis of adequacy, equity and contributory nature of the pension system

EVOLUTION OF THE PENSION GENEROSITY RATE



Sources: Social Security and AIReF

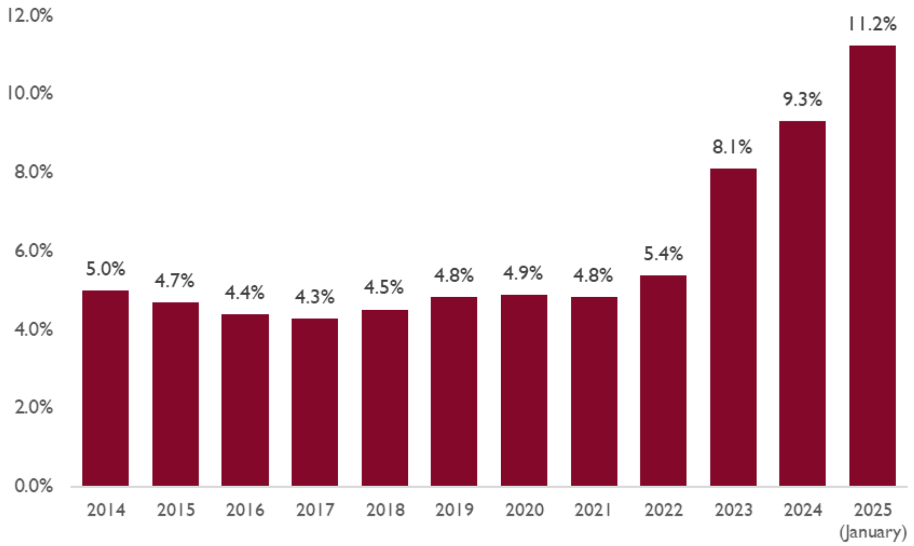
EVOLUTION OF INTERNAL RATE OF RETURN (IRR) OF THE SOCIAL SECURITY PENSION SYSTEM



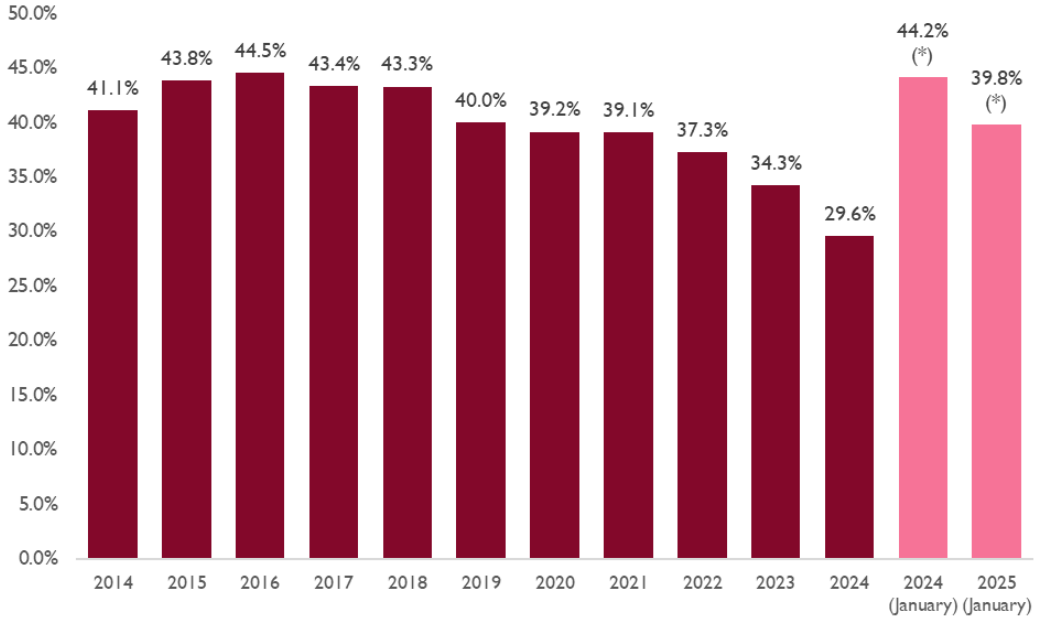
- The **generosity rate**, understood as the average pension divided by the average wage, decreases until 2065 due to the evolution of wages with productivity compared with the increase in pensions with the CPI
- The **replacement rate**, understood as the entry pension divided by the last salary, is around 70% in 2023, although it is not homogeneous among the different groups of pensioners
- The **return of the system** increases with the reform, mainly due to the increase in pensions with the CPI and the repeal of the sustainability factor. It also shows some differences between groups

Pension reforms between 2021 and 2023 already showing impact on expenditure, on generosity rate and on agents' behaviour

% PEOPLE DELAYING RETIREMENT



% PEOPLE TAKING EARLY RETIREMENT



Source: Social Security

- The percentage of people **choosing to delay retirement** has increased from just under 5% in 2021 to 11.2% in January 2025. Analysing the CPLS in 2023 shows that the increase in that year is almost entirely for delays of only one year, which points to the reform being the cause of the increase
- The percentage of people **choosing to take early retirement** has fallen from around 40% in 2021 to less than 30% in 2024. The only data available for 2025 shows a reduction of 4 points compared with the equivalent figure for 2024
- The analysis of the 2023 CPLS shows a reduction in the number of months that are brought forward and a reduction in the maximum pensions that bring the pension forward

Pension reforms between 2021 and 2023 lead to increase in expenditure, generosity rate and return of the system

IMPACT ON EXPENDITURE (% GDP) AND GENEROSITY RATE OF THE SYSTEM OF THE REFORMS APPROVED IN 2021-2023

	Expenditure			Generosity		
	2023	2050	2070	2023	2050	2070
Cumulative change	**0.5**	**2.7**	**2.2**	**3.5%**	**13.0%**	**13.6%**
Increase in pensions with the CPI (elimination of PRI)	0.6	2.7	2.3	3.3%	9.5%	8.2%
Elimination of sustainability factor	0.0	1.0	1.6	0.0%	3.4%	5.9%
Early retirement						
Incentives for delayed retirement	-0.1	-0.8	-1.3	0.2%	1.0%	1.0%
Determination of years for calculating entry pension			-0.1			-0.5%
Evolution of maximum pension different from maximum contribution bases		-0.4	-0.4		-1.3%	-1.5%
Evolution of minimum and non-contributory pension (poverty line)		0.1	0.1		0.5%	0.5%

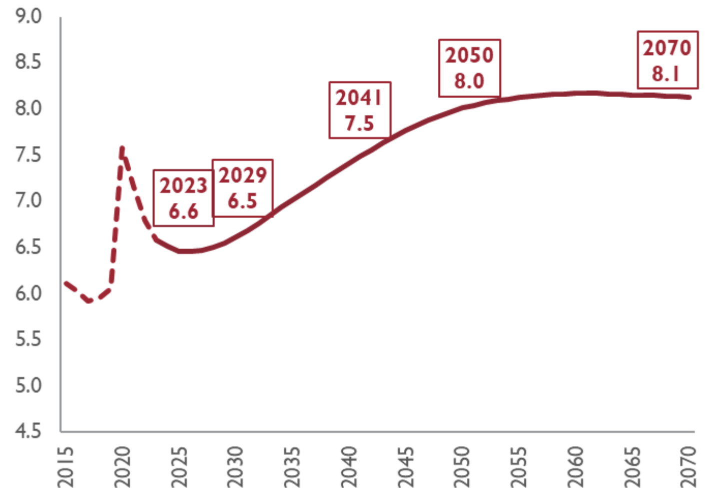
IMPACT OF THE REFORMS APPROVED IN 2021-2023 ON THE IRR OF THE SYSTEM

	IRR		
	2023	2050	2070
Before reform 2021-2023	**5.2%**	**5.0%**	**4.9%**
Increase in pensions with the CPI (elimination of PRI)	0.51%	0.48%	0.50%
Elimination of sustainability factor	0.00%	0.37%	0.57%
Early retirement	0.02%	0.00%	0.00%
Incentives for delayed retirement (%)	0.00%	0.00%	0.00%
Incentives for delayed retirement (lump sum)	0.00%	0.00%	-0.01%
Determination of years for calculating entry pension	0.00%	0.00%	0.00%
Evolution of maximum pension different from max. contribution bases	0.00%	-0.08%	-0.10%
Increase of the minimum pension	0.07%	0.06%	0.06%
Inter-generational Equity Mechanism	-0.10%	-0.20%	-0.19%
Solidarity contribution	0.00%	-0.01%	-0.01%
After 2021-2023 reform	**5.7%**	**5.6%**	**5.7%**

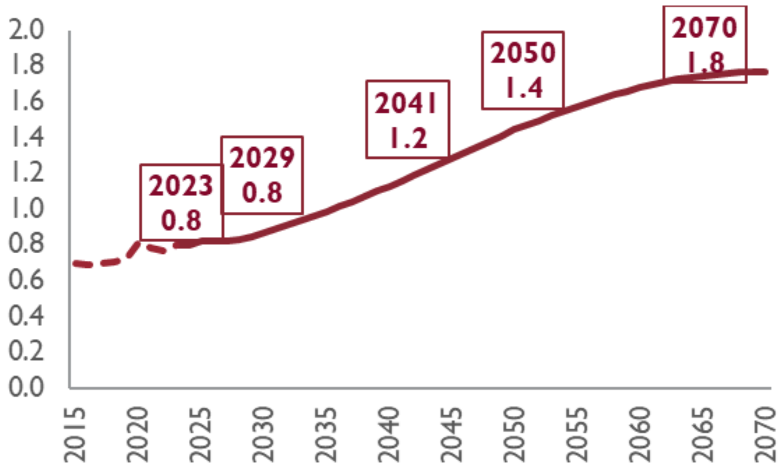
- The **reforms** approved in 2021-2023 have already led to an increase in expenditure of 0.5 points, rising to 2.7 points in 2050, falling to 2.2 points in 2070
- The impact of the reform on the **generosity rate** is explained by reforms that change the average pension, not those that change the number of pensions, such that changes in behaviour have little effect
- The reform increases the system's **IRR** for the entire forecast horizon
- In all cases, the greatest impact is due to the **increase in pensions with the CPI** (instead of the PRI) and the elimination of the sustainability factor, which is not offset by the rest of the measures. In the case of the IRR, the evolution of the maximum pension and maximum contribution bases and the IEM also have a significant impact in the opposite direction

AIReF estimates that ageing will also push up spending on healthcare and long-term care, while spending on education will fall

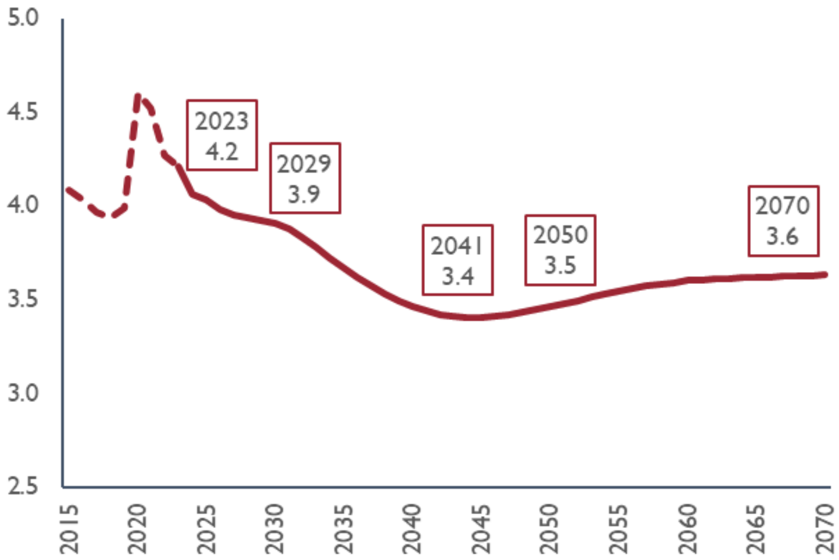
EVOLUTION OF HEALTHCARE SPENDING (% GDP)



EVOLUTION OF SPENDING ON LONG-TERM CARE (% OF GDP)



EVOLUTION OF SPENDING ON EDUCATION (%



Sources: IGAE and AIReF

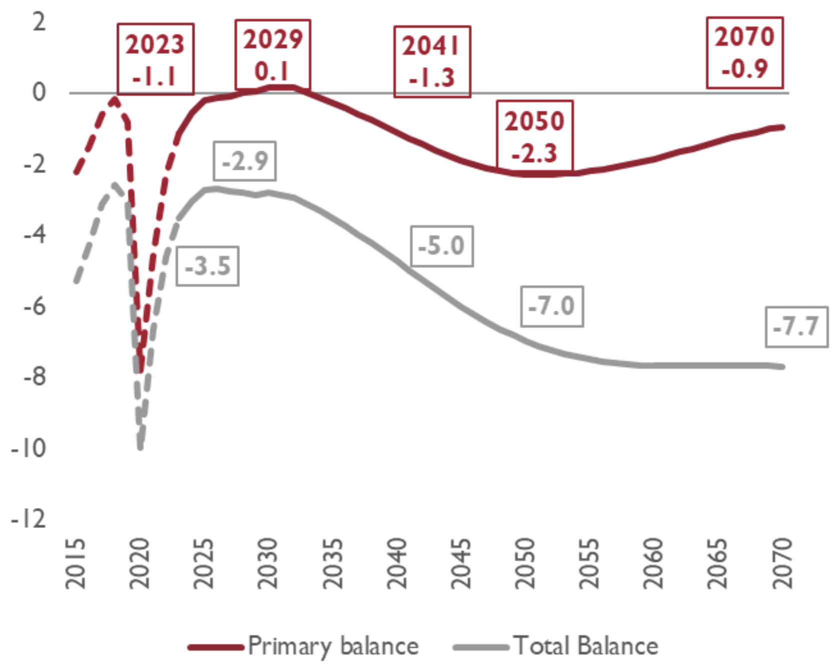
- AIReF projects that **healthcare spending** will increase by 1.4 percentage points of GDP between 2023 and 2050 and by a further 0.1 points up to 2070
- Total healthcare spending grows by about 3% annually due to non-demographic factors until 2070 and by about 1% due to demographic factors until 2034, after which the impact of demographic factors is reduced

- **Spending on long-term care** increases by 0.7 points of GDP from 2023 to 2050, and by a further 0.3 points by 2070
- In nominal terms, this spending increased in 2023 compared with previous estimates due to the reduction in waiting lists

- **Spending on education** decreases by 0.8 points of GDP from 2023 to 2050 and then increases by 0.2 points of GDP from 2050 to 2070
- Demographics reduce spending growth over the decade 2026-2036, and then contribute a maximum of 1% per year to total education spending growth. All other factors account for an annual increase of between 4% and 2%

AIReF estimates that fiscal balance will worsen over whole projection period to 7% of GDP by 2050 and 7.7% by 2070

EVOLUTION OF FISCAL BALANCE (% GDP)



Sources: IGAE and AIReF

This baseline scenario in the absence of any budgetary constraints and of a European and national fiscal framework:

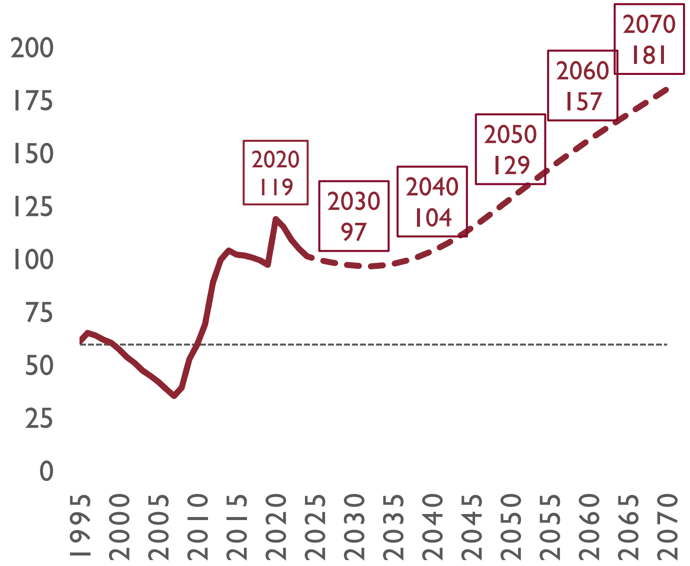
- ✓ **discretionary measures are excluded**
- ✓ **no account is taken of the commitment made in the MTP to the evolution of expenditure net of revenue measures**
- ✓ **other spending pressures such as defence, green and digital transition are not considered**

- The **primary balance** worsens until 2050 due to ageing, reaching a peak of -2.3% of GDP and then starts an upward path to end at -0.9% of GDP in 2070
- However, from 2050 onwards, the **interest burden** means that the fiscal balance does not improve, ending the projection period at 7.7% of GDP

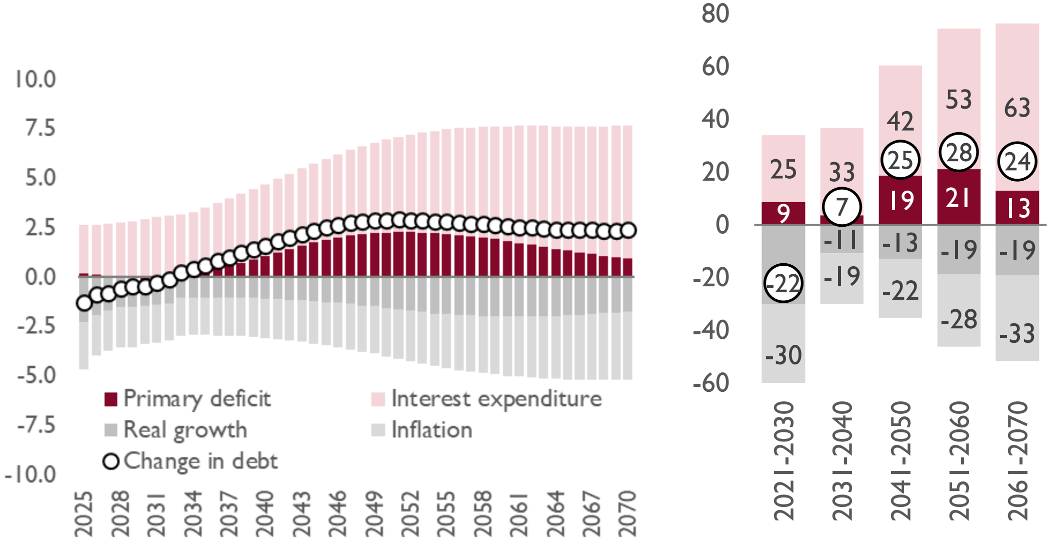
3.4 Debt projections

AIReF forecasts an unfavourable evolution of debt-to-GDP ratio in medium and long term: 181% in 2070

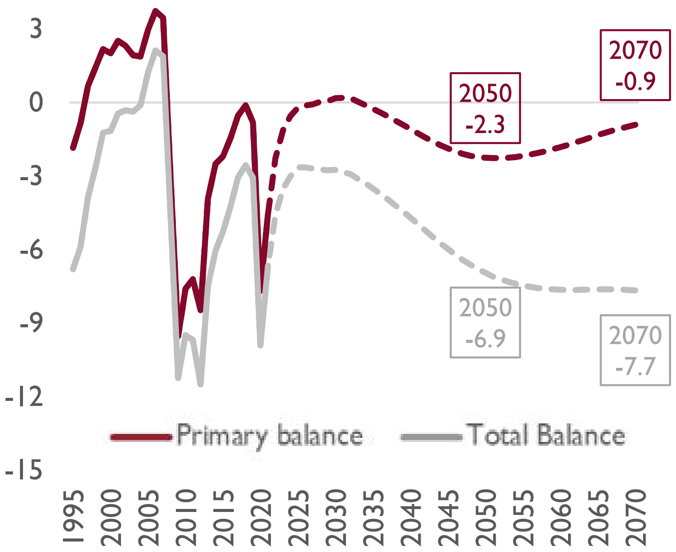
DEBT (% GDP) - BASELINE SCENARIO



CONTRIBUTIONS TO THE CHANGE IN THE RATIO (PP GDP)



PRIMARY BALANCE AND TOTAL BALANCE (% GDP)

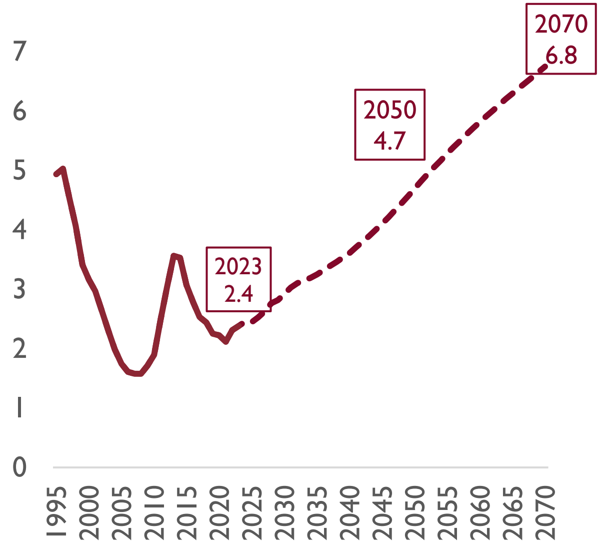


Source: AIReF

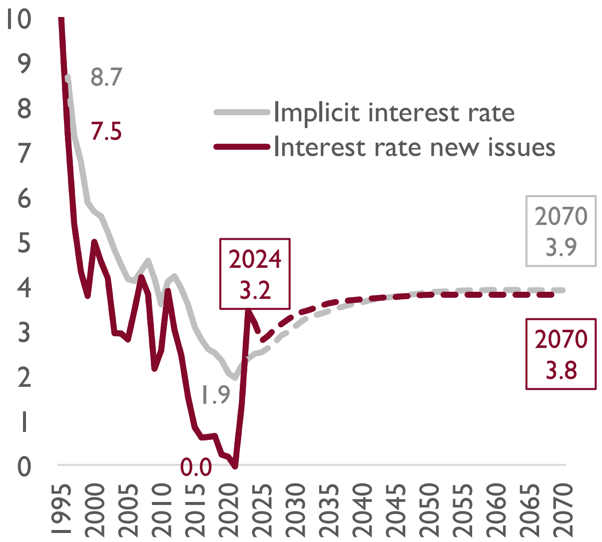
- Throughout this decade, debt dynamics show a favourable profile: **stabilisation at 97%**
- The **2030s** will mark a **turning point in** the evolution of debt, with a return to a progressively intensifying upward path
- Although **the primary balance** is expected to **improve** from **2050** onwards due to demographic evolution, **public debt will continue to increase rapidly**, driven by high interest spending

High initial indebtedness and persistent primary deficit generate unfavourable dynamics of financial burden

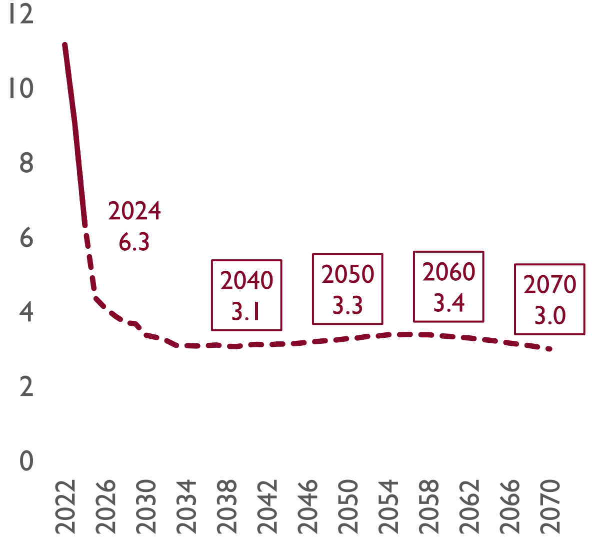
INTEREST SPENDING (% GDP)



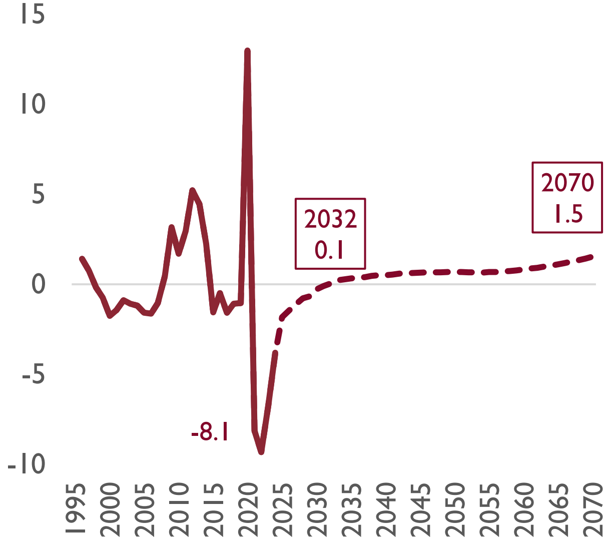
IMPLICIT INTEREST RATE AND NEW ISSUES (%)



NOMINAL GROWTH (% CHANGE)



DIFFERENTIAL I-G (PP GDP)

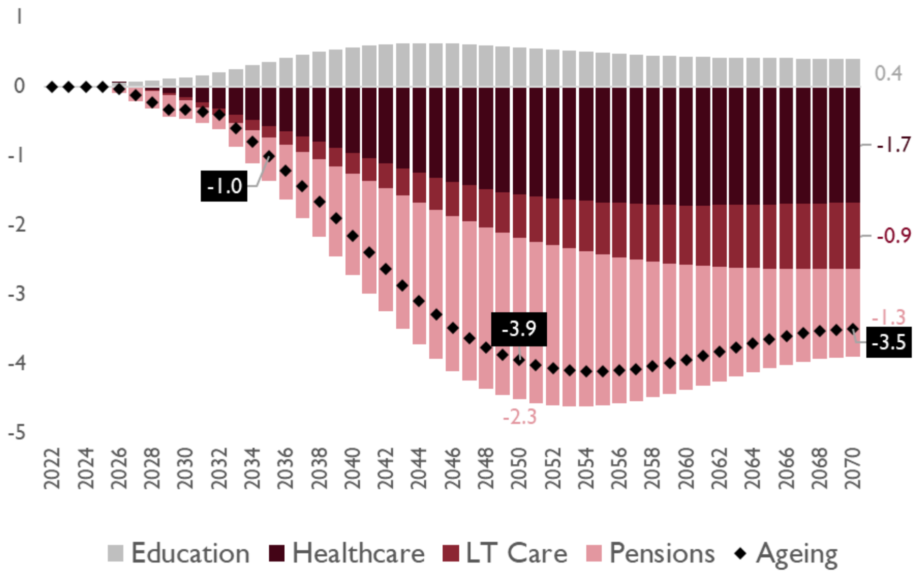


Source: AIReF

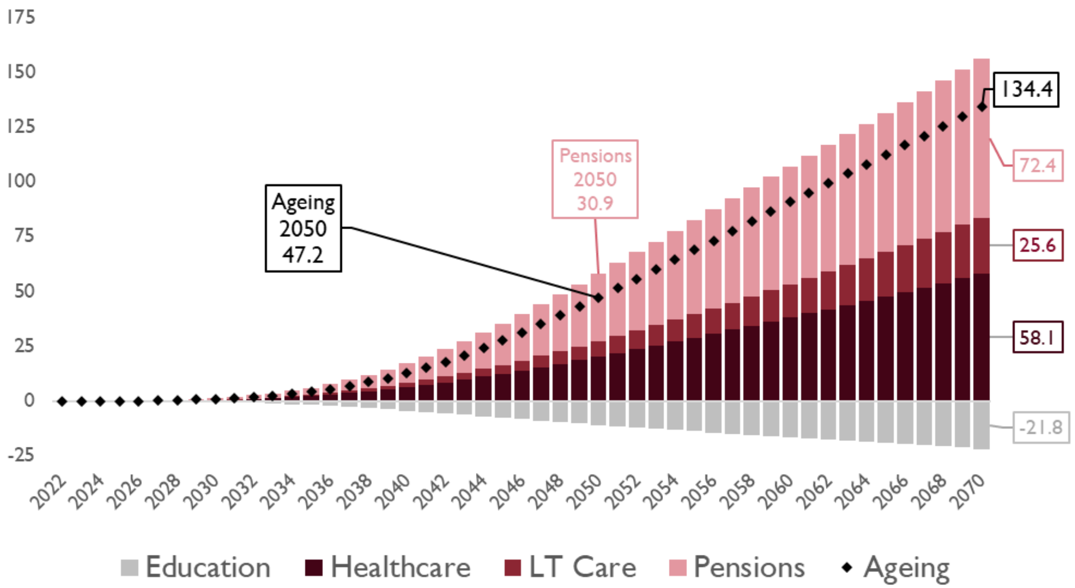
- AIReF assumes that the **average cost of debt will remain contained** over the projection horizon, but at higher levels than those observed in recent years
- With average nominal GDP growth of 3.3% over the period 2025-2070 and an implicit nominal interest rate of 3.6%, AIReF assumes a **positive "i-g" spread of 0.3%** over this period**.** This spread is projected to turn positive from 2032 onwards

Increased spending on pensions and healthcare account for large part of increase in expected debt up to 2070

CONTRIBUTIONS TO THE EVOLUTION OF THE PRIMARY BALANCE OF THE COMPONENTS OF SPENDING ON AGEING (PP GDP)



CONTRIBUTIONS TO THE EVOLUTION OF DEBT OF THE COMPONENTS OF SPENDING ON AGEING (PP GDP)

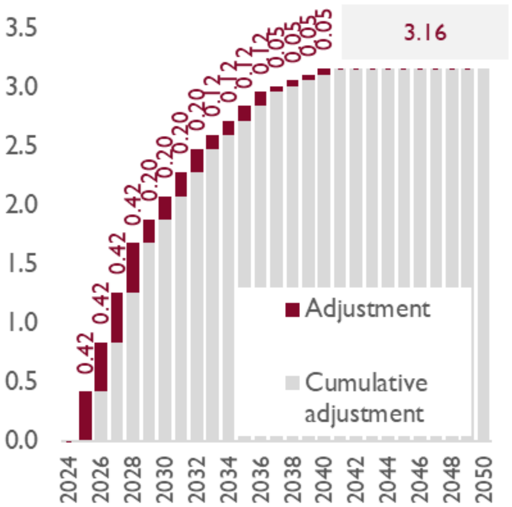


Source: AIReF

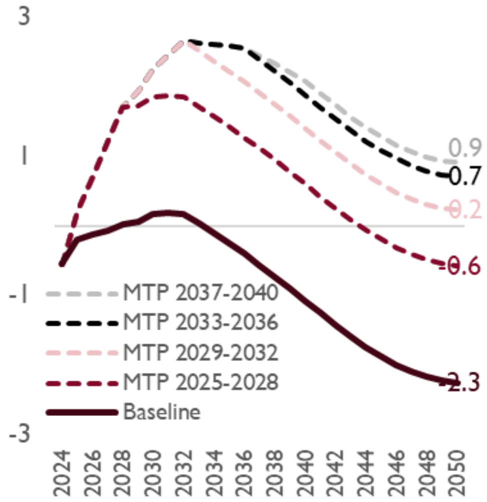
- A **higher primary deficit** leads to a significant deterioration in the debt trajectory, contributing a **47-point increase in the** debt ratio in 2050
- **Rising pension expenditure is the main factor** behind the increase in age-related debt up to mid-century, **accounting for 31** of the additional **47 points**
- From 2055 onwards, demographic evolution will contribute to a slight gradual improvement of the primary deficit

Fulfilling commitments within new fiscal framework is key to ensuring a sustainable path for public debt

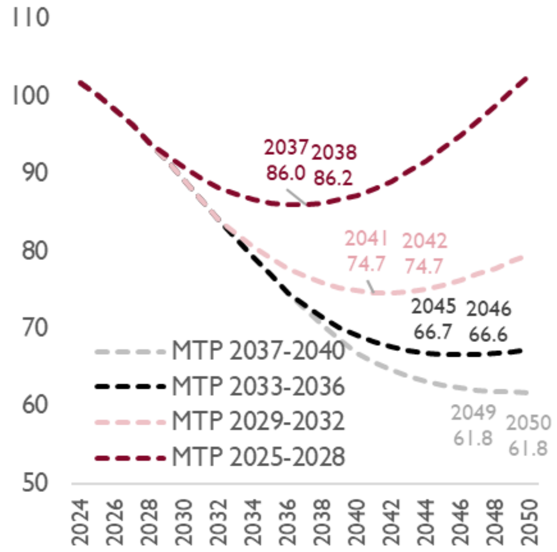
STRUCTURAL ADJUSTMENT (PP GDP)



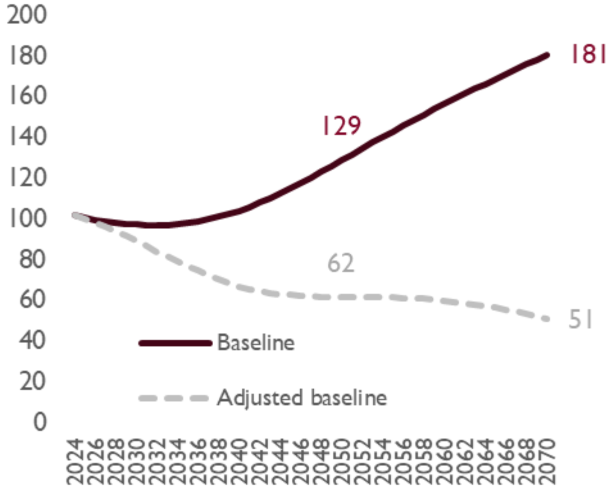
PRIMARY BALANCE (% GDP) ADJUSTED TO COMPLIANCE WITH THE RULES



DEBT (% GDP) ADJUSTED TO COMPLIANCE WITH RULES



BASELINE DEBT (% GDP) AND ADJUSTED TO COMPLIANCE WITH RULES



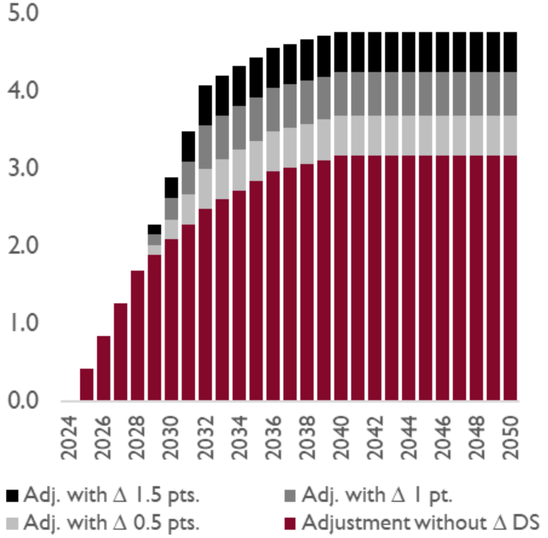
Source: AIReF

- According to AIReF's current projections, a **total adjustment between 2025 and 2040 of 3.16 points of GDP**, spread over four fiscal plans of four years each, would **reduce debt to 62% of GDP in 2050**
- The fiscal adjustment would follow a declining profile, with initial annual efforts of **0.42 percentage points of GDP** as committed to in the plan already approved (2025-2028), decreasing in the **next** three **plans to 0.2, 0.12 and 0.05 percentage points**, respectively

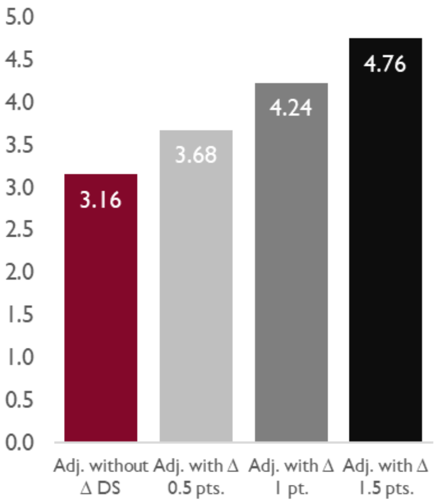
Increased defence spending will put pressure on public finances and require a stricter fiscal correction in future

THEORETICAL EXERCISE OF DEFENCE SPENDING INCREASE: 0.5 / 1 / 1.5 POINTS OF GDP

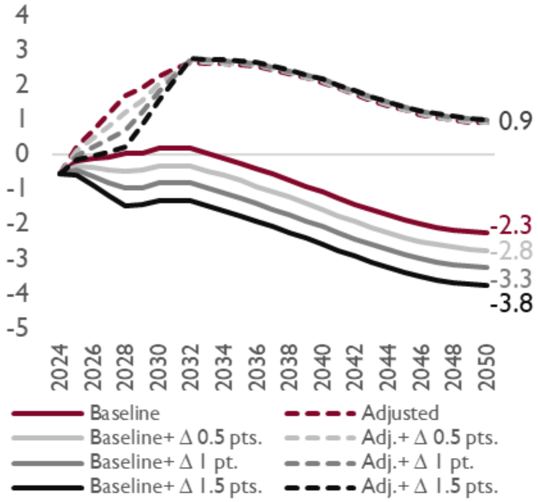
STRUCTURAL ADJUSTMENT (PP GDP)



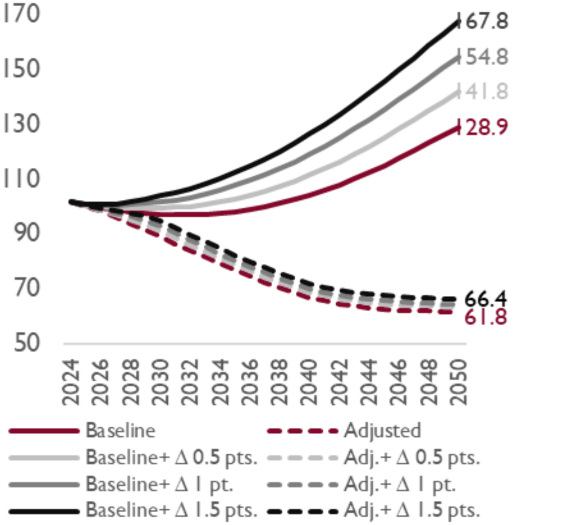
CUMULATIVE STRUCTURAL ADJUSTMENT (PP GDP) 2025-2040



BASELINE AND ADJUSTED PRIMARY BALANCE (% OF GDP) IN COMPLIANCE WITH RULES



BASELINE DEBT AND DEBT ADJUSTED (% GDP) TO COMPLIANCE WITH RULES

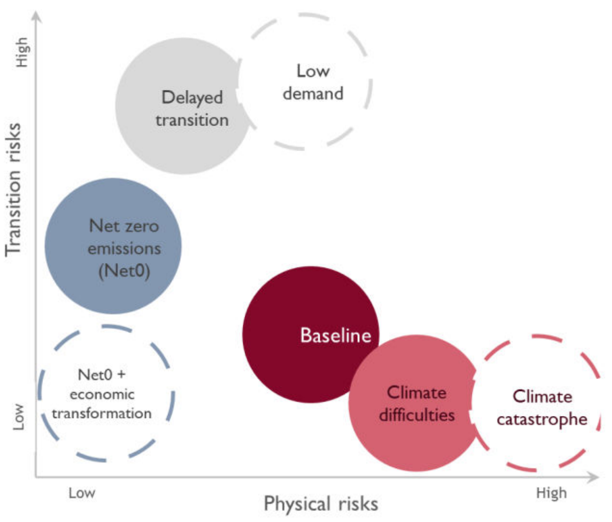


Source: AIReF

- To mitigate the impact in the short term, the Commission proposes to **activate the national escape clause** of the new fiscal framework, allowing this increase in spending to be accommodated **without compromising compliance with the first MTP**
- In cumulative terms, **the total adjustment** over the period 2025-2040 **would increase from 3.16** points of GDP in the baseline scenario to **3.68, 4.24 and 4.76** points of GDP in a notional exercise assuming **an increase in defence expenditure of 0.5, 1 and 1.5 points of GDP, respectively**

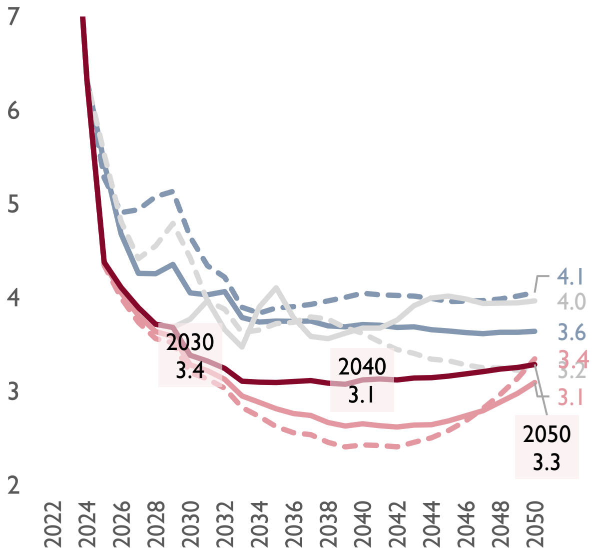
AIReF presents an exploratory exercise on the impact of climate change on public accounts

CLIMATE RISK PROFILES OF THE DIFFERENT SCENARIOS

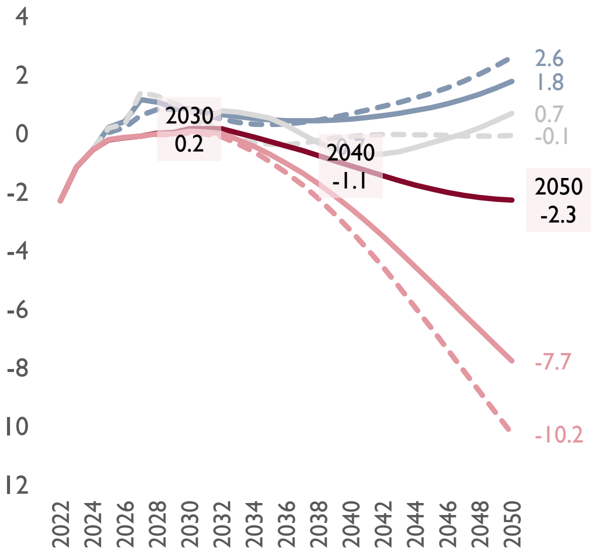


Source: Oxford Economics

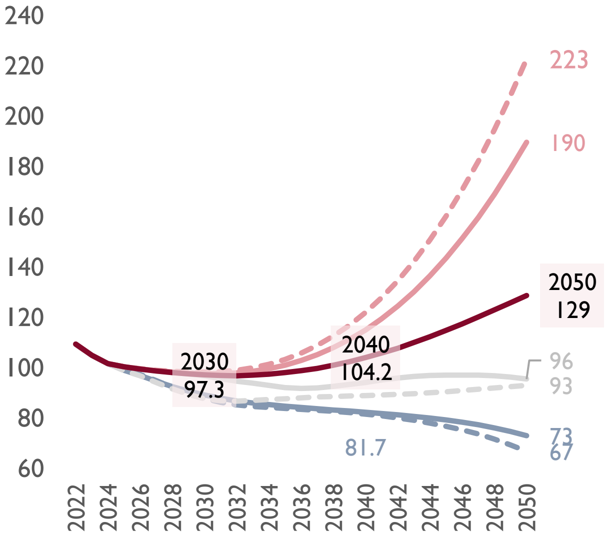
NOMINAL GROWTH (% CHANGE)



PRIMARY BALANCE (% GDP)



DEBT (% GDP)



- AIReF presents an exercise based on the climate module of the **Global Economic Model** (OEGEM) developed by Oxford Economics (OE) that incorporates seven scenarios to quantify the impact of climate change
- Climate change entails two types of risks to the economy: **physical risks**, which are the result of changes in climate, and **transitional risks**, resulting from mitigation policies
- Despite uncertainty about the macroeconomic and fiscal impact of the climate transition, the Opinion illustrates how action is clearly a better option than inaction

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