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How could ageing be counteracted?

Building a simplified comparative model to assess the future impact of population ageing, employment trends and immigration up to 2030 in the EU-27 Member States

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The Future of Family Support for Older People
Parallel session: "Future Projections"
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Main objectives of this paper

To define a model which allows us to assess :

- **the impact of future demographic ageing in a comparative way;**
- **the magnitude of diverse policy measures which could be implemented to counteract it.**

for the 27 European Union Member States.

This comparative perspective would :

- help us find the European countries that are **best prepared** to face ageing;
- identify the available **panoply of measures** for each country

Main objectives of this paper

- Such a model has to accomplish **two conditions:**
  - it has to use relatively **simple assumptions,** allowing **comparisons between different countries;**
  - **it cannot only be limited to the effect of demographic factors** → it needs to take into account other factors such as **employment rates, delay of effective retirement age, or immigration** → which also play a role on the economic consequences of ageing**.**

Main characteristics of the model

- It is based on a **previous model developed by G. Calot** (1995) for the European Commission, **to asses the consequences of ageing on pension system sustainability for the EU-15** at the 2050 horizon**.**
- This model was later developed, at a **macro-economic level,** for the then **25 EU Member States (Gil Alonso, 2005).**
- This latter model has now **been applied up to 2030,** and **simplified** → **It presently only** considers **demographic and employment factors** → it excludes, for the current paper, those factors related with pension system characteristics.

Main characteristics of the model

- **This model does not intend to give precise forecasts.** It only indicates the implications of a range of scenarios on the future evolution of **the ratio between the number of retired people and the number of people in employment** → EDR: economic dependency ratio**.**
- This ratio has many **policy implications** as the former population is supposed to receive potential support from the latter either in the form of pensions or as family support (care).
- The original Calot's model is based on the following principle: a PAYG pension system is **in equilibrium** when there is a **balance** between the **total contribution to pensions** and **the total benefits received by retired people**.

Formal description of the model

- (1) **Volume of contributions = volume of pensions**

or

- (2) **GDP x c = R x p**

where

- **GDP =** wealth produced (gross domestic product).
- **c =** share of gross domestic product necessary to finance pensions.
- **R =** number of retired people.
- **p =** average pension.

(2) is equivalent to

- (3) **E x GDP/E x c = R x t x GDP/E**

where:

- **E =** number of employed people (in full-time equivalents).
- **GDP/E =** average gross domestic product per employed person.
- **t =** "transfer ratio" or ratio of average pension to average gross domestic product per employed person (t = p / (GDP/E)).

Formal description of the model

- (3) Can be simplified further, becoming:
- (4) $E^{x} c = R^{x} t$
- If the parameters **c** and **t** are maintained **constant** for the period 2008-2030, Calot's model can only be in equilibrium **if the number of employed people (E) grows with the same rate than the number of retired people (R).**
- The current model examines which is **the impact of a growth in the number of retired people between 2007 and 2030, all other key factors remaining constant** → The outputs of the model are changes in diverse key factors to counteract the effect of ageing and to keep EDR constant.

Measures compensating the impact of ageing

- These **compensatory changes** are examined one by one (*ceteris paribus*) **to assess the individual compensatory effect** which each key factor could have on ageing, e.g.:
  - **Increasing the number of employed people** → by raising **employment rates**
  - **Increasing the number of employed people** → through **immigration**
  - **Increasing the effective retirement age** → this would **reduce the number of retired people** and **increase the number of potential contributors** (e.g. potentially employed people).

Assumptions used in model (1)

- **The model is assumed to be in equilibrium in the initial year (2008)** → Therefore, it should be taken as a reference point for all the 2030 findings.
- The **only** assumed **external shock unbalancing the system** is the change in the number of retired people due to **population ageing**.
- **Data on population by age** for the **period 2008-2030** comes from **Eurostat demographic projections** → no-migration "convergence" scenario.
- **Data on employment** → Eurostat EU-LFS.

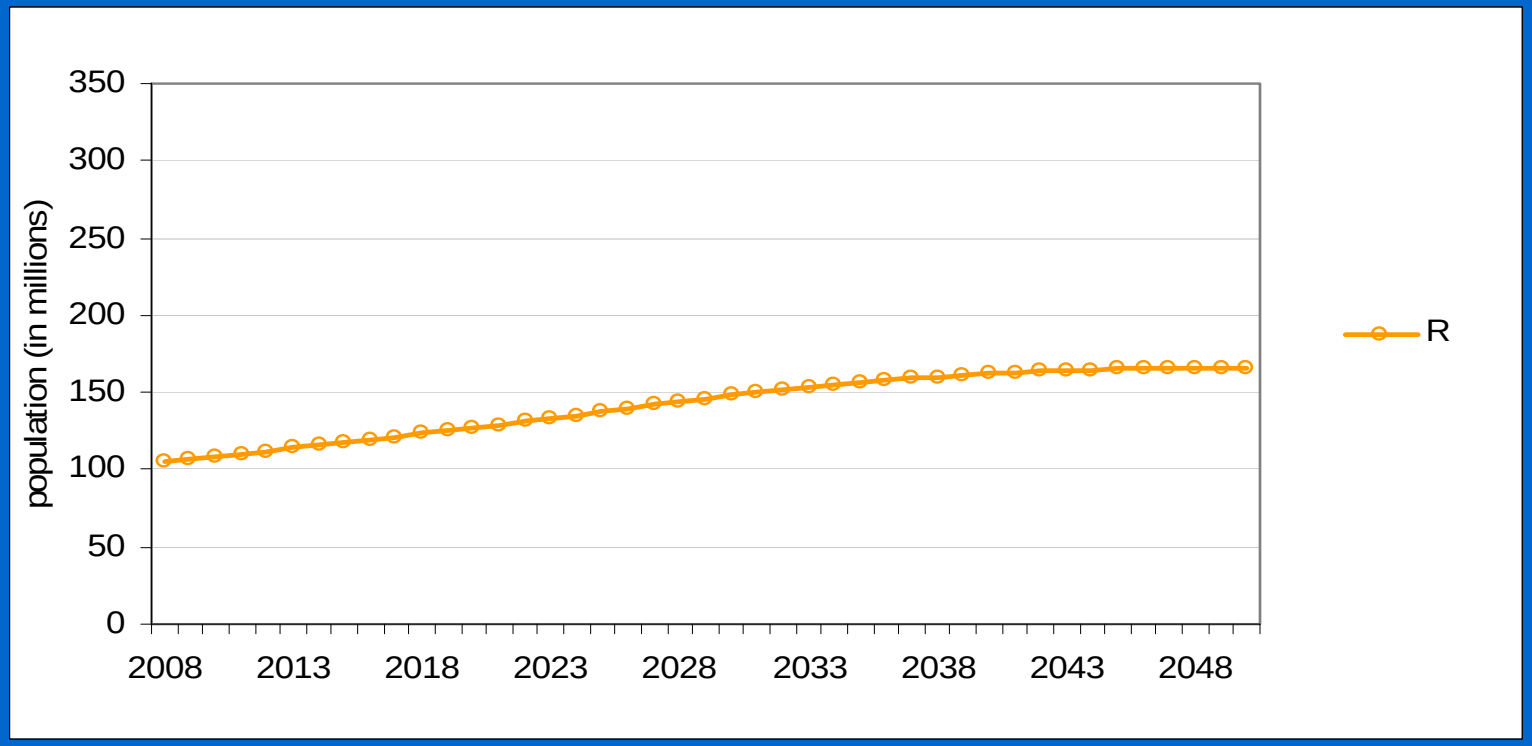
Assumptions used in model (2)

- **E**, the number of employed people contributing to the system, is calculated by using the **full-time equivalent (FTE) rate of employment**.

- **R**, the retired population, is assumed to be the part of the population above the average **effective retirement age**. This assumption is acceptable as most of the elderly people actually have direct or derivative rights to pensions. The average effective retirement age has been estimated for each country by Eurostat from the Labour Force Survey data on age-specific activity rates

Measures compensating the impact of ageing

Changes in the numbers of retired people (R) and working age population (wap) in the EU 27 between 2008 and 2050, as well as in the number of employees (E') maintaining the model in equilibrium.



Source: Eurostat no - migration convergence scenario

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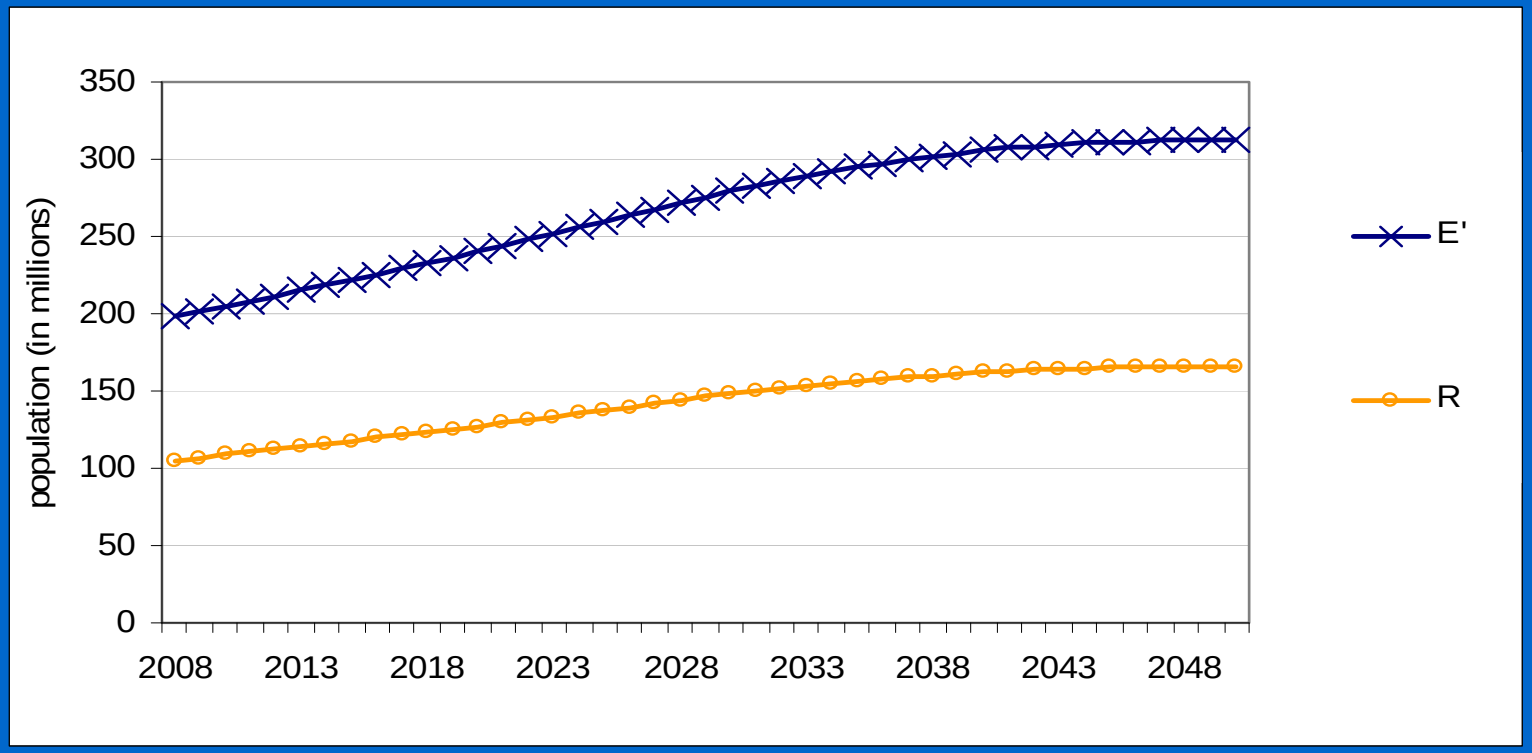

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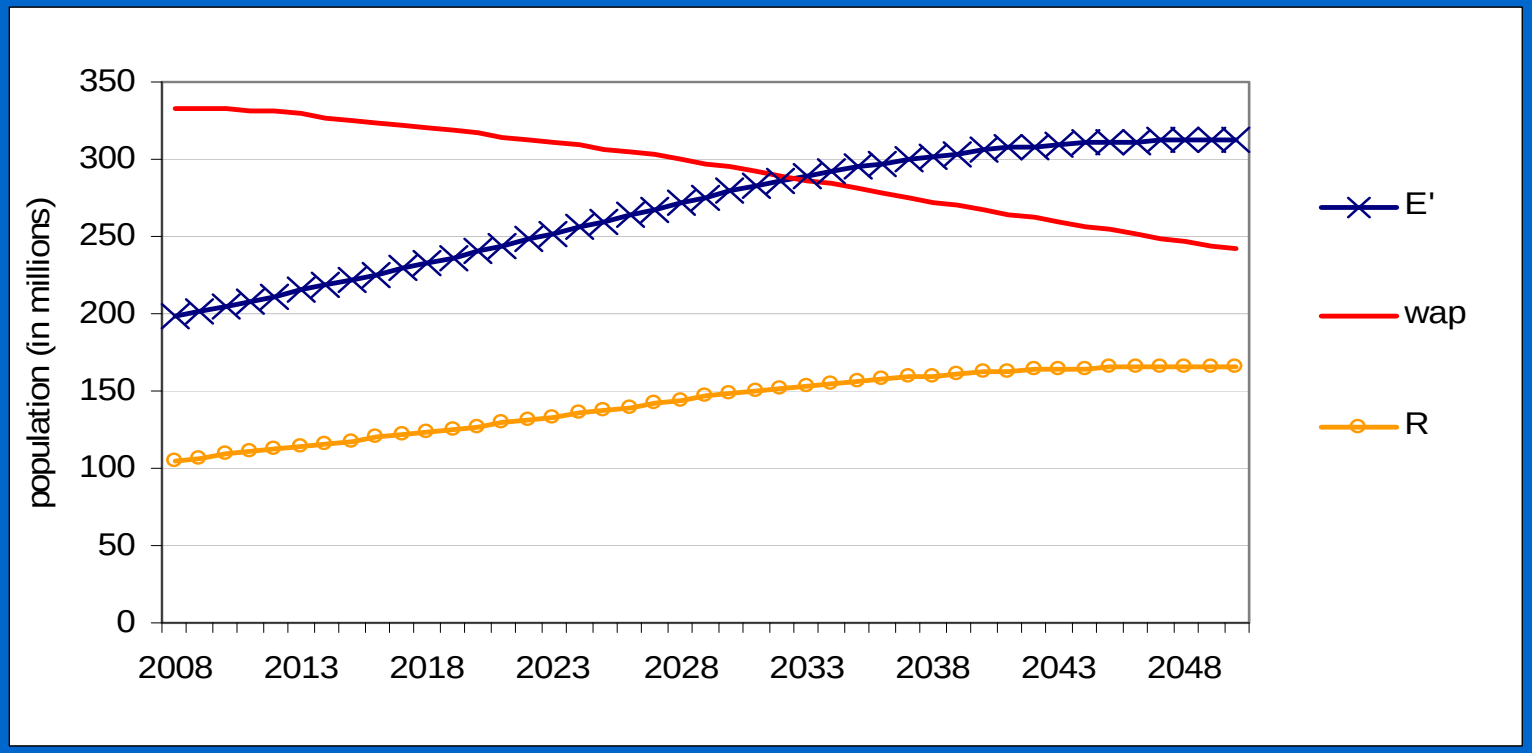

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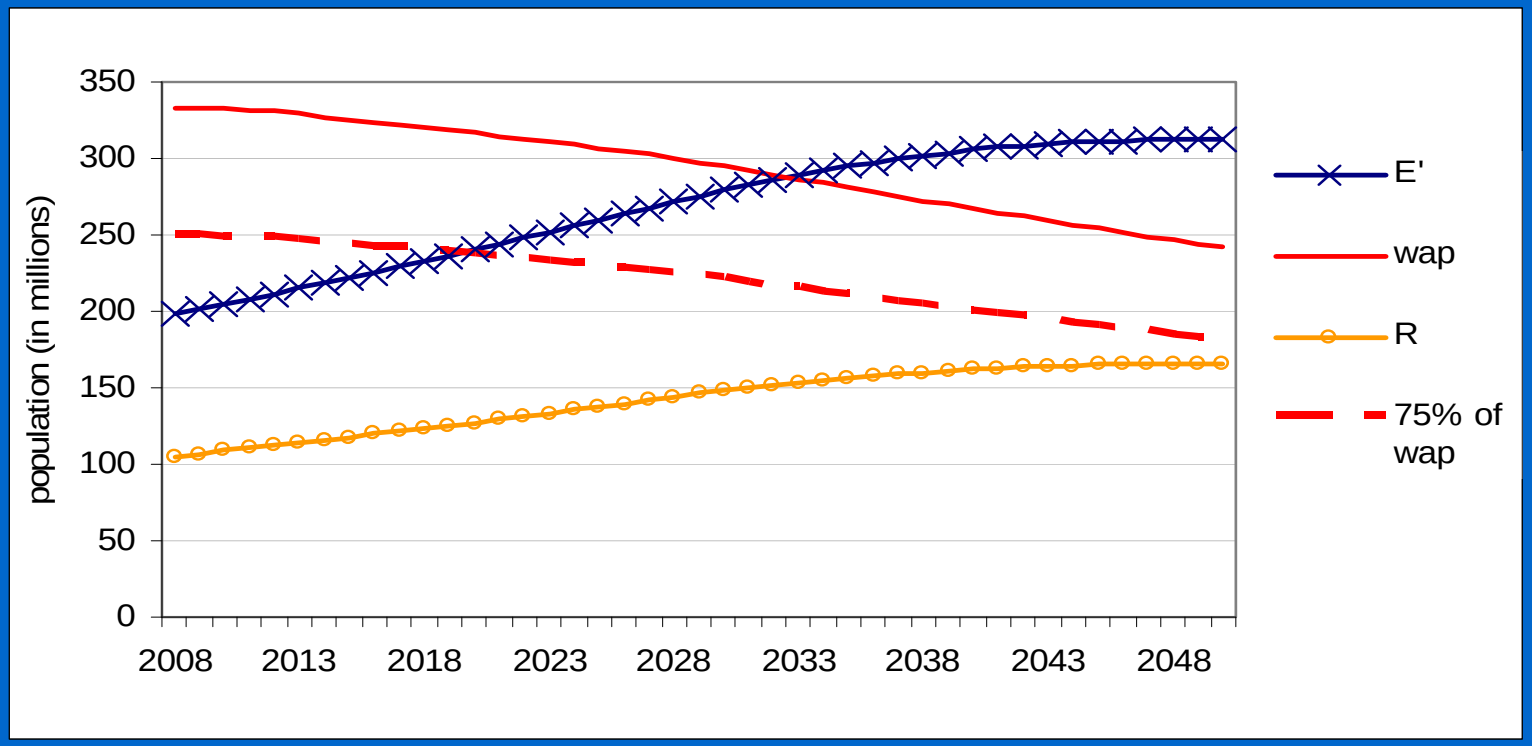

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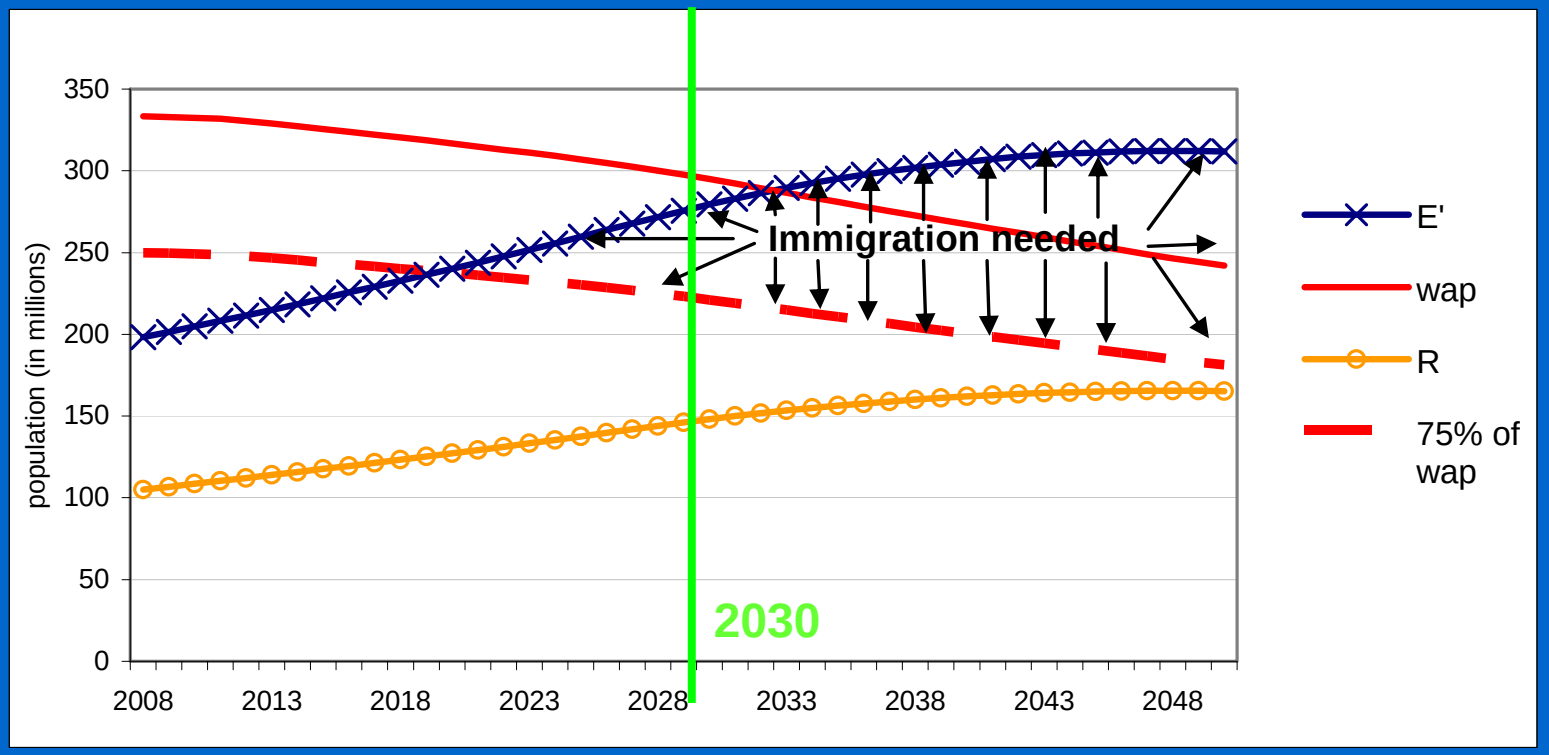

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Different starting situations in each country

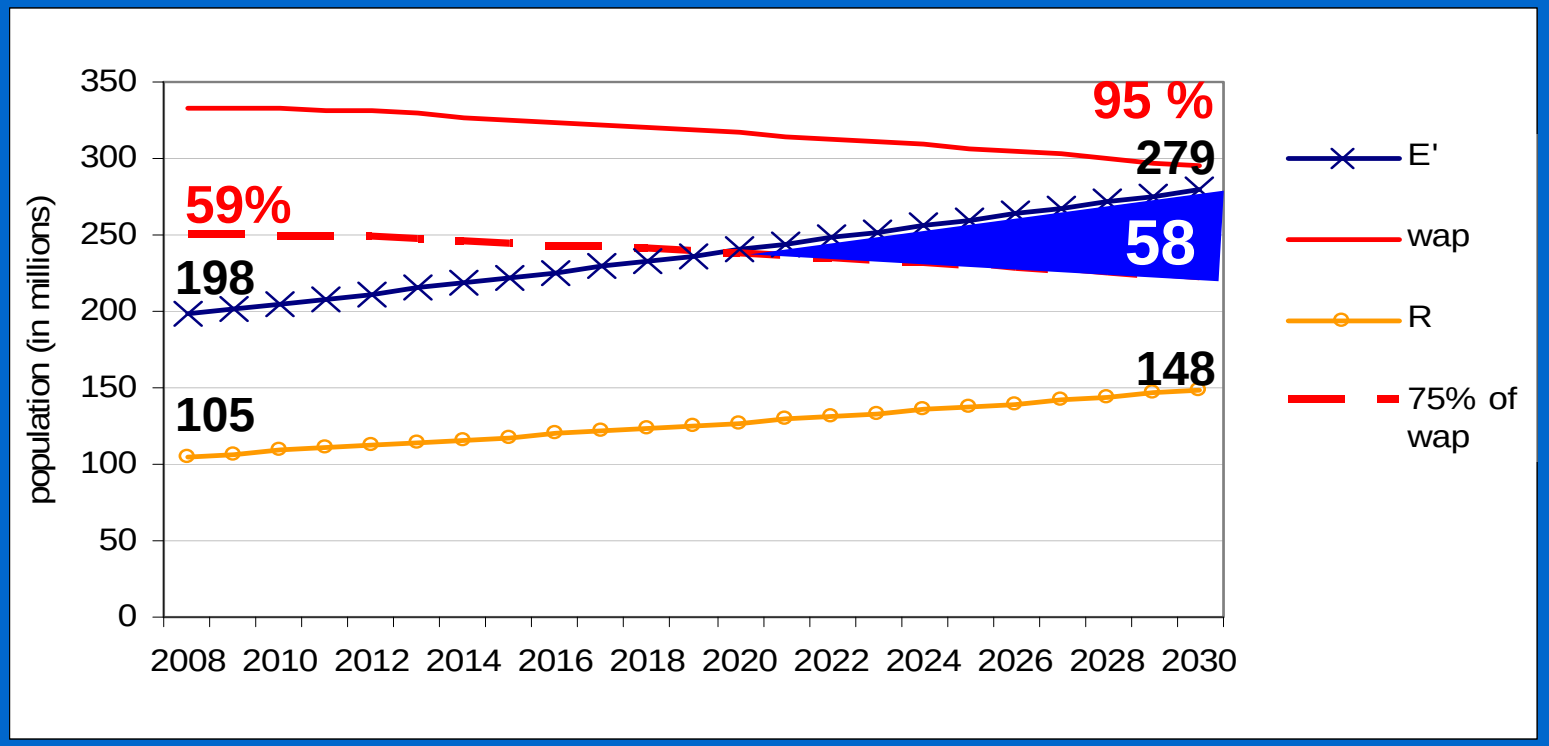
- **EDR** → EU-27: 52.4 % → values ranging from 27 % in **Ireland** to 70 % in **Italy**
- Full-time equivalent **employment rate** → EU-27: 60 % → values ranging from 51 % in **Malta** to 69 % in **Latvia**
- The **average effective retirement age** → EU-27: 61.2 years → values ranging from 58.5 years in **Malta** to 64.3 years in **Romania**
- Variations in these parameters between MS reflect **the margins of manoeuvre** and **flexibility** that countries would have to address the impact of ageing

Main results at EU-27 level

- The required **employment growth** to counteract ageing up to 2030 is 1.57% p.a., meaning an increase from 198 to 279 million employees (in full time equivalents).
- That means **employment rates** should increase from 59 % in 2008 to 95 % if we want to keep **EDR constant**.
- The **number of immigrants** required to compensate ageing is very important: around 58 millions during a period of 22 years, i.e. an entry of more than 2.6 million net migrants per year.
- The **average effective retirement age**, which is currently 61.2 at EU-27 level, should increase more than 6 years by 2030 (reaching a level of 67.5 years) in order to keep the number of retirees constant.

Main results at EU-27 level

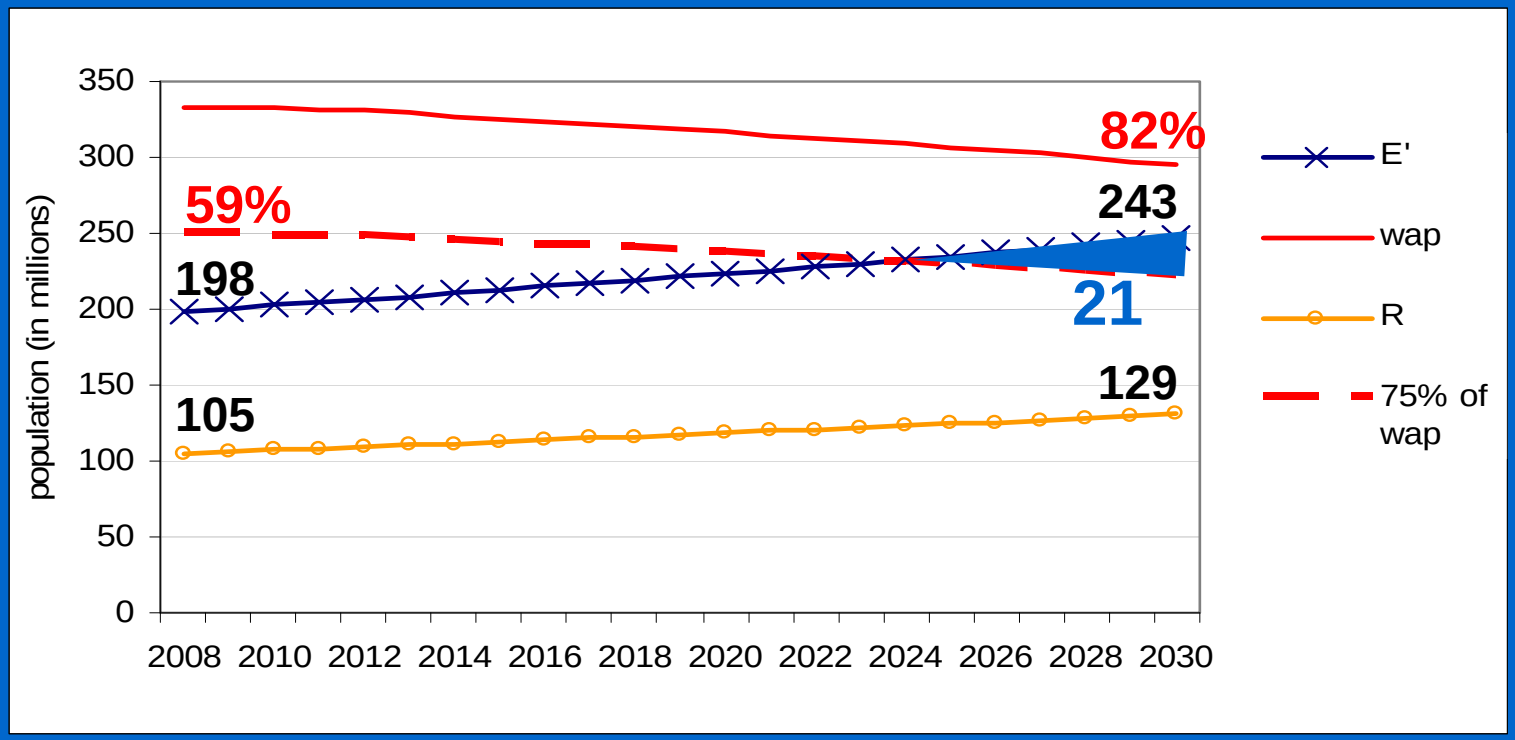
Scenario 1: The average effective retirement age is **constant** → EU-27 = 61.2 in 2030



Source: Eurostat no - migration convergence scenario

Results at EU-27 level

Scenario 2: The average effective retirement age grows 3 years → EU-27 = 64 in 2030



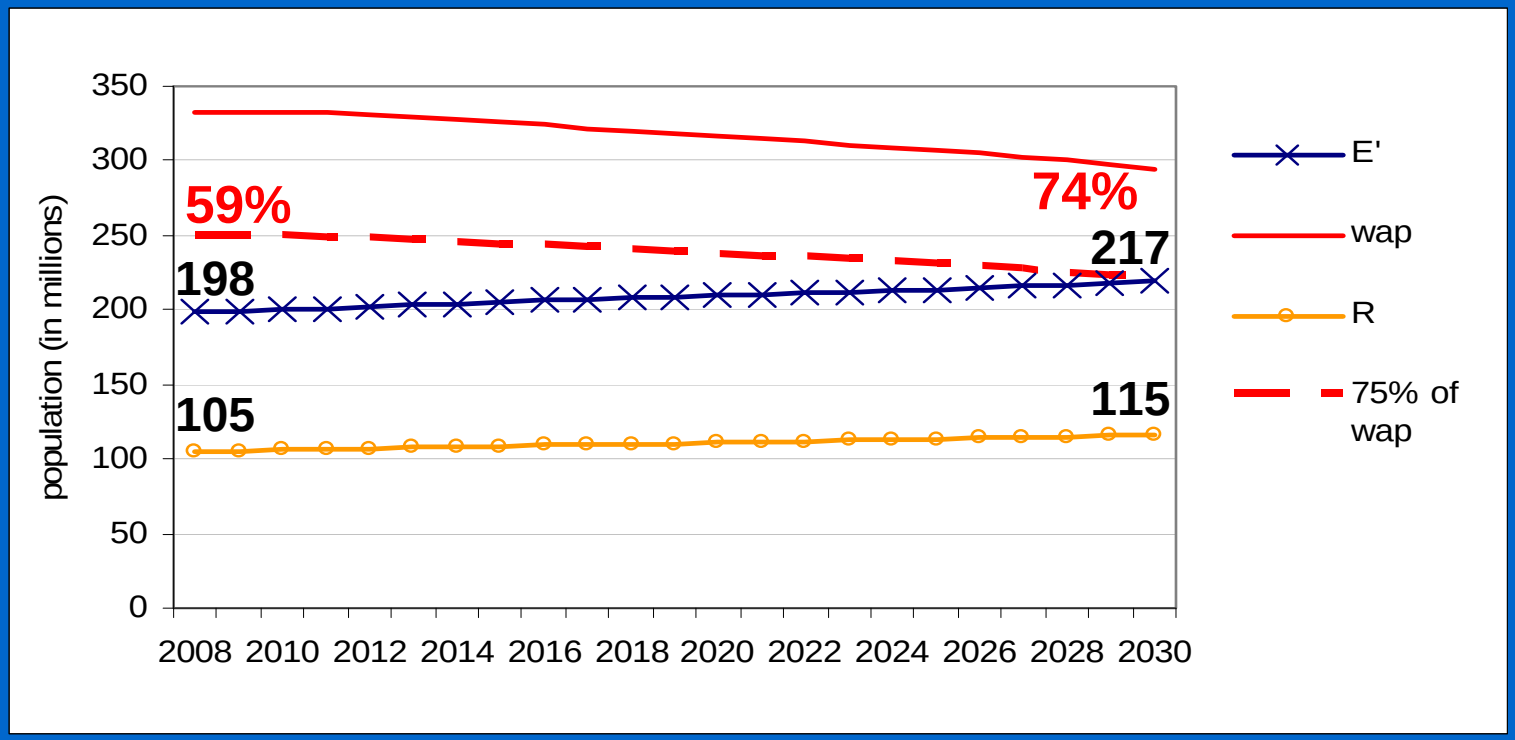
Source: Eurostat no - migration convergence scenario

Main results at EU-25 level

- The most realistic policy to counteract ageing and avoid the deterioration of the EDR seems **to be a mix of different measures**:
  - If an average **0.3% employment growth** p.a. is combined with a **delay in the effective retirement age** of 5 years, until the age of 66 → EDR = 54.4% in 2030, which is not much higher to the current one (53%)
  - The resulting employment rate in f.t.e., 74%, would be higher than the present one in the EU country with the highest e.r. (Latvia = 69.2 %), but, in theory, no more immigrants should be needed.

Results at EU-27 level

Scenario 3: The average effective retirement age grows 5 years → EU-27 = 66 years in 2030



Source: Eurostat no - migration convergence scenario

Main results at national level

- None of the Member States can expect **to escape** the ageing population trend.

- However, this common trend towards ageing **will present important timing and intensity differences** among Member States

  → IRELAND and CYPRUS, which currently have the youngest populations and the lowest EDR, **will experience an acceleration of ageing**

  → The **highest EDR** in 2030 will be found in MALTA, ITALY, POLAND and FRANCE, which are currently characterised by both **relatively low employment rates and retirement age**

Main results at national level

- On the contrary, the three BALTIC states, the SCANDINAVIAN countries, BULGARIA and ROMANIA will be the **least affected by dependency changes** between 2008 and 2030.
- Differences in the ageing process between Member States will clearly condition the appropriate policy options to counteract it → Therefore, **measures to preserve the model's equilibrium will not have the same impact** in each Member State.
- **Some measures are difficult to apply** in some Member States, due to the current value of the parameters, and would be more appropriate for others.

Main results at national level

- In countries like ROMANIA, BULGARIA, IRELAND or SWEDEN → where the **effective retirement age** is currently already high, an **additional increase** in it could be more difficult to implement than in other countries like MALTA, SLOVAKIA, LUXEMBOURG or FRANCE.
- In countries with **current high employment rates** like LATVIA, ESTONIA, DENMARK or SWEDEN → it seems more difficult to consider **job creation** as the key compensatory measure than in MALTA, POLAND, HUNGARY or BELGIUM → with low employment levels.
- Finally, the number of employed people could be increased through **immigration** in those MS like SPAIN or ITALY, where the margins of manoeuvre of other measures are rather tight due to the intensity of ageing.

Conclusions (1)

- The model shows that **the impact of ageing** over the next 22 years **is significant** at the EU level and for the 27 Member States
- This challenge can be overcome **through a combination of policies** aiming to:
  - **decrease** the number of **retired people** → increasing the effective retirement age, and
  - **increase** the number of those **in employment** → growing employment rates of national workers or through immigration
- A policy framework promoting **employment growth** but also encouraging people to remain **working longer**, is therefore required

Conclusions (2)

- The model shows that there is **a wide range of national situations** in terms of the **appropriate policy measures** required to face this problem → Therefore, **the pension challenge is different in each Member State**
- Some measures may be more appropriate for some countries than others → due to the existing differences in **the timing and the intensity of the ageing process** and differences in **employment**
- **Margins of manoeuvre** for those countries which already have a high average effective retirement age and high employment rates → are smaller than for those with lower labour market participation rates and earlier exit from activity

Conclusions (3)

- Immigration seems a **complementary resource** when all the other compensatory measures are not sufficient due to the magnitude of ageing
- Nevertheless, **immigration** by itself **cannot counteract ageing** in the European Union as the number of immigrants needed to compensate for the increasing number of retired people would be so high that **no country could assume the social and political costs** of such a process