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Aging and pension : challenges and solutions

Forum Financier Belge

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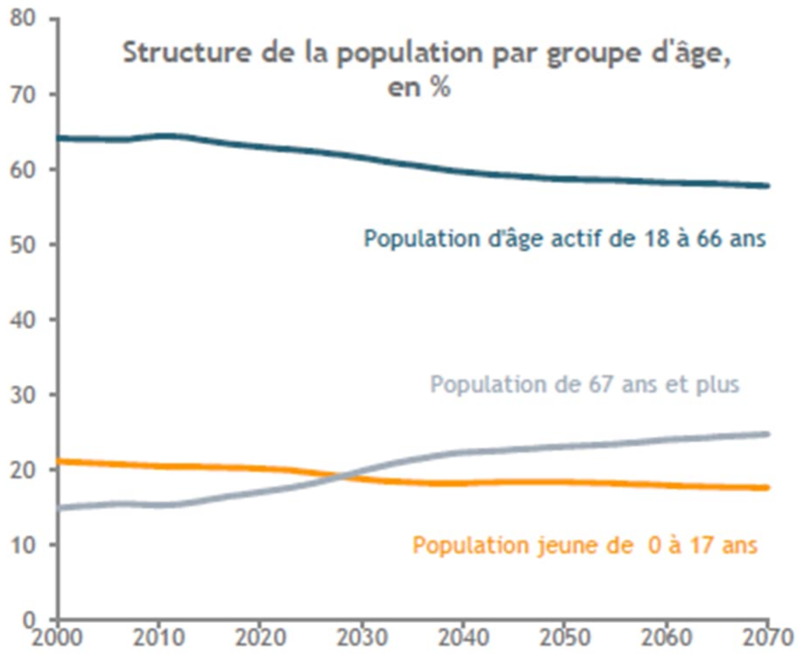
The basic question

How can our pension system cope with aging ?

The two main risk factors of Aging

	2024	2030	2050	2070
Fertility rate	1,5	1,6	1,6	1,6
Life Expectancy-M	80,5	81,6	85,2	88,1
Life Expectancy-W	84,7	85,4	87,7	89,8

Source : CEV2025



Main exogeneous risk factors in Pension

- Demographic factors / Aging effect :
  different kinds of risks :
    - demographic renewal risk
    - longevity risk
    - baby boom effect

- Financial factors
    - market risks (returns, interest rates, …)
    - inflation / wage risk

- Economical factors
    - activity rate (unemployment, disability,..)
    - early exit policy

Some risk management questions

- Risks factors vs pension architecture (*risk identification/measurement*)

  What are the main risks induced by different pension architectures ?
  Are some architectures more resilient ?

- Risks factors vs agents (*risk sharing*)

  Which stakeholders will bear these risks ?
  (State/ Employers / Affiliates)

- Mitigation of risk factors (*risk mitigation*)

  Is it possible in the pension strategy to mitigate
  some of these risks ?

Main criteria for a pension architecture

- Dimension of benefits :
  - Defined Benefits (DB)
  - Defined Contributions (DC)

- Dimension of funding :
  - Pay as you go (PAYG)
  - Fully funding (FF)

Defined Benefit (DB) :

- Benefits at retirement age are defined
  (in general function of salaries)
- Contributions must be actuarially computed

Defined Contribution (DC) :

- Contributions are defined (function of salaries)
- Benefits are the actuarial accumulation of contributions

Pay as you go (PAYG) :

- The generation of active people pays directly the pension to present retirees
- Instantaneous transfer of cash ; no saving

Fully Funding (FF) :

- Each generation saves for its own retirement
- Important provisions

Main pension architectures

	1°Pil. DB	1° Pil. DC	2°Pil. DB	2° Pil. DC
Pay as you go				
Funding				

Some risk management answers

- Risks factors vs pension architecture

  PAYG and Fully funding are exposed to (very)different kinds of risk
  ...except one....

- Risks factors vs agents

  DB and DC induce different forms of risk sharing between the stakeholders
  (Sponsor in DB / Retirees in DC)

- Mitigation of risk factors

  Direct actions against risk factors
  Diversification between PAYG/Fully funding
  Diversification between DB and DC
  Automatic Adjustment Mechanisms (retirement age, indexation ,...)

Risk factors and pension architecture

PAYG and Fully funding are exposed to different kinds of risk

PAYG

Demographic renewal risk
Activity rate

Longevity risk

Fully Funding

Market risk
Inflation risk

Longevity risk

Aging effects

Direct actions against aging risk factors

- External measures

  - Increase of the activity rate / decrease of unemployment rate
  - Birth rate political promotion (FR)

- Internal measures

  - Raising the retirement age (65 – 67 – 69 …..)
  - Actuarial Neutrality for early retirement (Bonus/ Malus correction)
  - Limitations in the indexation of pensions
  - Parametric reforms

Diversification PAYG vs Funding

- Theoretical added value to mix PAYG and fully funding

Demographic return

Financial return

Diversification argument / portfolio theory

- Practical advantage to compensate decrease of pension in PAYG by complementary funded schemes (occupational / State) - Adequacy help!

- Multi pillar approach advocated by the World Bank

- This should concern everybody and not only rich sectors or high salaries !

Aaron – Samuelson principle

- 2 basic risk factors :
  - rate of return of the pension investment (finance)
  - rate of increase of the total pay roll (number of workers + mean salary)

Optimal choice in a static environment :

Payroll increase > financial return :		PAYG is optimal
Financial return > Payroll increase :		FF is optimal

Optimal choice in a dynamic uncertain environment :

Mixing the two techniques is the best option
(*risk diversification / partial correlation*)

EXAMPLE : SWEDEN

First pillar : DC / 16% in PAYG + 2.5% in FF
Second pillar : FF

Why a compulsory second pillar ?

- Expected decrease of the first pillar / not so generous replacement rate

- Long term saving for every one / too much short term saving unequally distributed

- Collective compulsory first level is the best option
  - behavioural economy
  - failure of recent individual attempts (PEPP/ PLCS)
  - scale effect
  - potential solidarity mechanisms (Collective DC)
  - natural part of a salary package
  - regular, frequent and long term contributions
  - fairness between companies / sectors

- Applicable for employees/ civil servants / self employed !

Return versus safety in the second pillar

- Importance of the return on contributions (long term / compound interest)

- A difference of 2% in return have a huge influence on final benefits

- Real added values of fully funding vs PAYG are :
  - to invest in the real economy
  - to diversify the country risk

- Is the LPC /WAP guarantee a useful tool in that perspective ?

  Many drawbacks :
  - incoherent (3° pillar / self employed, ...)
  - complicated (horizontal / vertical/...)
  - risky investment killer
  - not hedgeable for employers
  - potential cost (no free lunch in finance)
  - counter productive (replacement rate)

Diversification DB /DC

- Second pillar mainly (and more and more) in Defined Contributions (individual or collective)

- What about the first pillar ?

- Many countries have transformed their DB /PAYG first pillar in:

  - DC/PAYG first pillar - Notional Defined Contribution – NDC (Sweden/ Italy / Poland/ ..)
  - Points systems (Germany / France/…)

- Developments of hybrid solutions DC/DB inducing a better risk sharing between generations (Musgrave principle / Cash balance mechanisms)

Automatic Balance mechanisms

ABMs are defined as a set of predetermined measures established by law to be applied immediately as required according to an indicator that reflects the financial health of the system. Their purpose, through successive application, is to re-establish the financial equilibrium of PAYG pension systems without the repeated intervention of the legislator and with a smooth effect.
The adjustments can be made on retirement age, benefit levels, revaluation of contribution bases and/or indexation of pensions in payments.

- About 2/3 of the OECD countries have at least one ABM
- Example : *linking automatically retirement age and life expectancy*
- Germany : *sustainability factor in the pension formula based on the dependency rate*
- Sweden : *automatic adjustment of indexation of pensions*

Longevity risk : the big challenge

- PAYG and FF are exposed in a same proportion to this risk

- Complicated hedging / Longevity bonds and swaps but ….

- Big challenge for the Belgian financial sector :

  The development of an important second pillar should induce a much more important offer in terms of decumulation products after retirement (dynamic annuities , group self annuitisation, tontines, deferred annuities,..)

- Interest to pool on a State level this longevity risk after retirement ?

Thanks

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