

# Sustaining Algeria's Retirement System in a Population Aging Context: Could a Contribution Cap Strategy Work?

Farid FLICI\*

\*Research Center in Applied Economics for Development, CREAD, Algiers, ALGERIA. e-mail: [farid.flici@cread.dz](mailto:farid.flici@cread.dz)

Webpage: <https://farid-flici.github.io>

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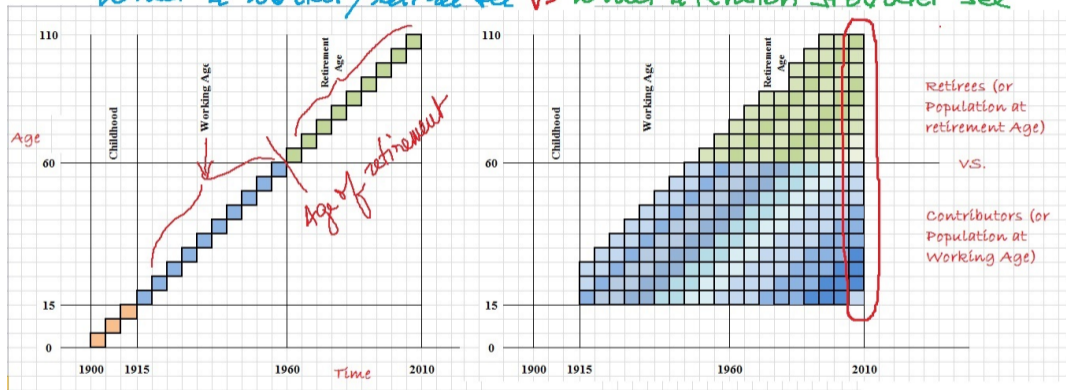
# Talk Outline

- Pay-As-You-Go Pension System Vs. Population Aging
- Retirement System in Algeria: Sustainability Issues
- Inefficiency of Parametric Reforms
- The Contribution Cap Strategy: Could it Help?
- Conclusions

# PAYG retirement System: How does it work ?

Worker/Retiree VS. Pension Provider

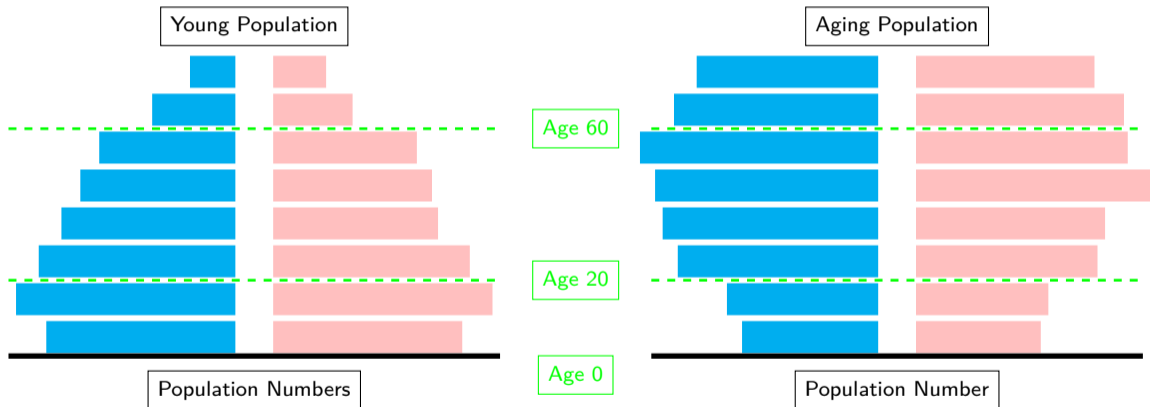
*What a Worker/retiree see VS What a Pension Provider See*



- For Algeria: PAYG DB system,  $FPB = [2.5\%] \times [Contributed\ Years\ (n)] \times [5\ last\ years\ average\ wage]$ , Contribution rate for ret. = 18.75%, Retirement age: 55/60 for W/M.

# Why Does Aging Matter?

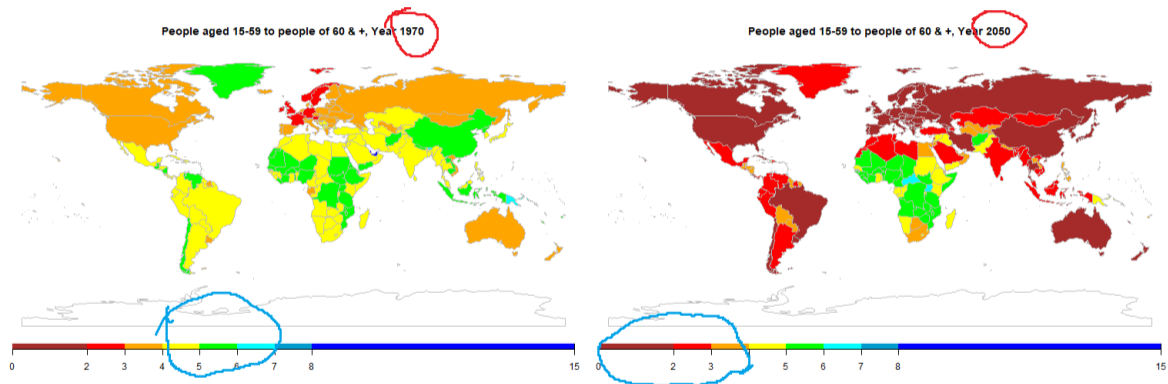
- Aging Translates As a Top of the Population Pyramid Enlarging Compared to its Basis



- Population of Elderly Growing Faster than the Working Age Population
- Unbalance between Retirees Vs. Contributors and Expenses Vs. Incomes

A fact: the World population is aging

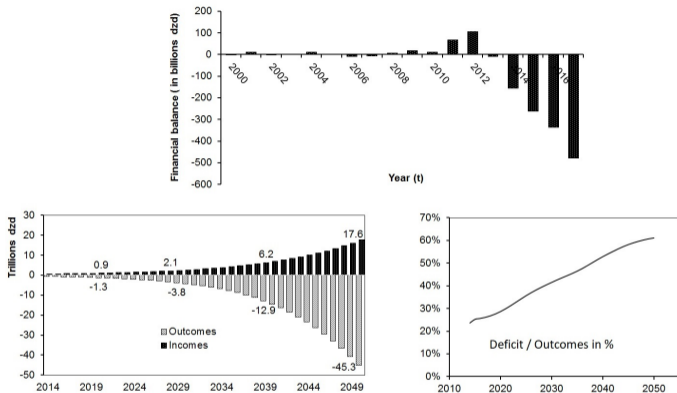
# The World Aging Map: 2050 VS 1970



Data Source: UN Estimates and Projections.

# Retirement System in Algeria: The Future of Population Aging

# Retirement System in Algeria: Expected permanent Deficit



Source: Flici, F., & Planchet, F. (2020). [Financial Sustainability of the Algerian Retirement System: a perspective analysis of the 50 coming years](#). In Peris-Ortiz et al. (Eds), Economic Challenges of Pension Systems, Springer Nature.

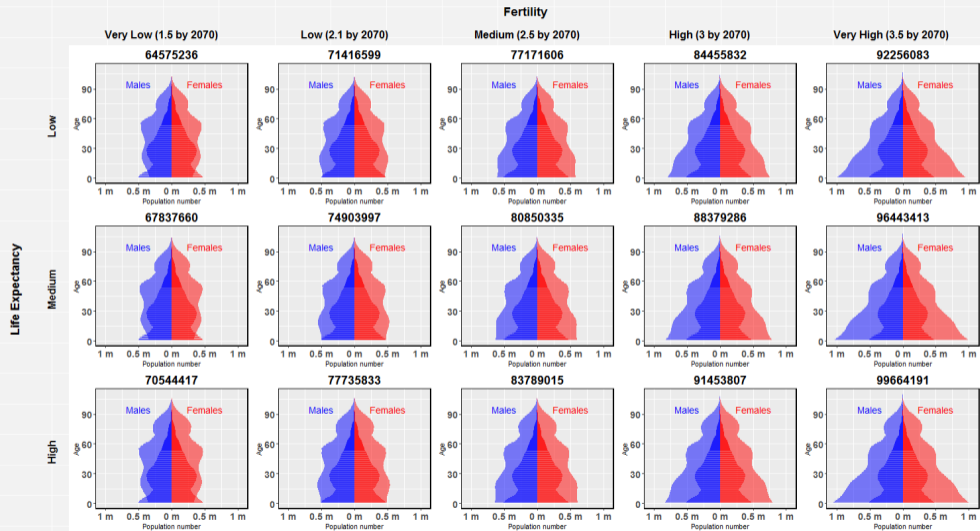


## Reforms are needed, but:

- Would Parametric Reforms be Enough to Ensure Long Term Sustainability Within a Changing Environment?
- We assess future sustainability within a changing environment and potential reform actions
- Environment variables: (1) Population change, (2) Employment, (3) Salaried Employment, (4) Affiliation to Social Security, (5) Salary Growth, (6) Contribution collection factor
- Reform Actions (Significant Vs. Small changes of pension parameters): (1) Annuity Factor, (2) Retirement age, (3) Contribution Rates, (4) Wage reference period
- Objective: See if the system can be sustained under some environmental conditions or reform actions

# The future of population aging in Algeria: Multiple scenarios projections

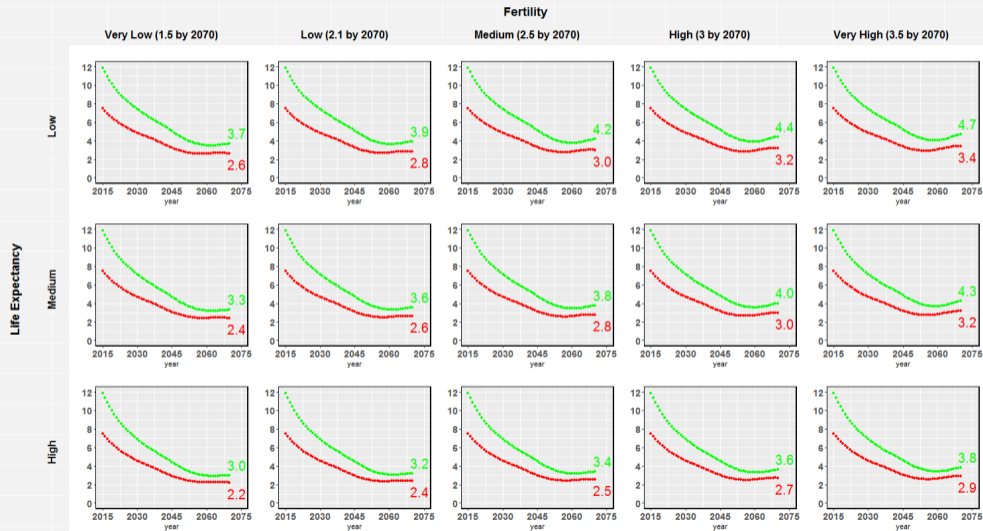
Population projection for Algeria, Year 2070 Vs. 2015



Source: Farid FLICI (2019)

# The future of population aging in Algeria: Multiple scenarios projections

Number of people at working age for 1 at retirement age (  $P[15,59] / P[60 & +]$  in Red Vs.  $P[15,64] / P[65 & +]$  in Green), Year : 2070



Source: Farid FLICI (2019)

# Scenarios Definition: 300,000 scenarios

## Environment Variables

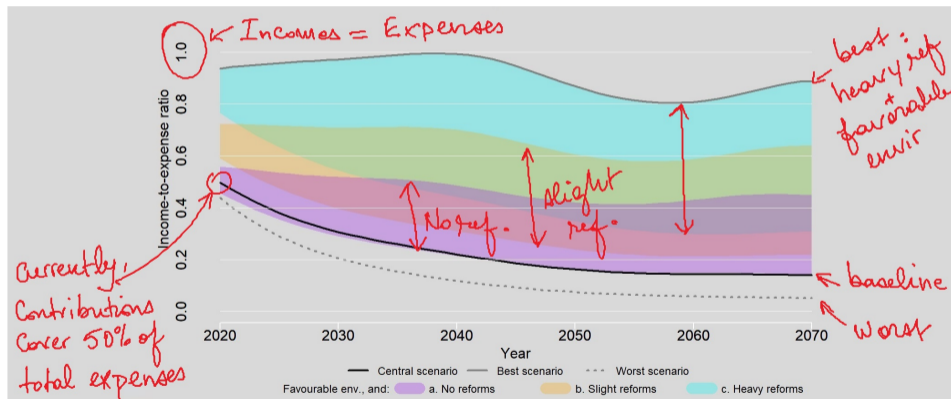
- Population: 15 scenarios
- Employment: 3 Scenarios
  - 1 61% for Men, 14.8% for Women
  - 2 50% for Men, 10% for Women
  - 3 80% for Men, 40% for Women
- Salaried Emp. Rate
  - 1 65.8% for Men, 79.6% for Women
  - 2 50% for Men, 65% for Women
  - 3 80% for Men, 85% for Women
- Affiliation of Salaried Workers
  - 1 65.1% for Men, 91.9% for Women
  - 2 60% for Men, 70% for Women
  - 3 80% for Men, 95% for Women
- Wages Evo Rate: (1) 5%, (2) 9%, (3) 3%
- Collection Rate: (1) 87.9%,(2) 80%,(3) 95%

## System Variables

- Age of Retirement (Average)
  - 1 60 for Men, 57 for Women
  - 2 63 for Men, 60 for Women
  - 3 65 for Men, 62 for Women
- Reference Wage Period  
(1) 5y, (2) 10y, (3) 12y
- Contribution Rates  
(1) 18.75%, (2) 20%, (3) 22%
- Annuity Rate  
2.5% (n=32), 2.25% (35y), 2% (40y)
- Annual Revaluation Rate  
Same As Salaries Evolution Rate.

# Results: Income-to-Expense Ratio

- Average: below 25% in 2040,
- Slight reforms: The IER will stabilize around 60% at max
- Heavy reforms: The IER can exceed 80% in favorable environment.

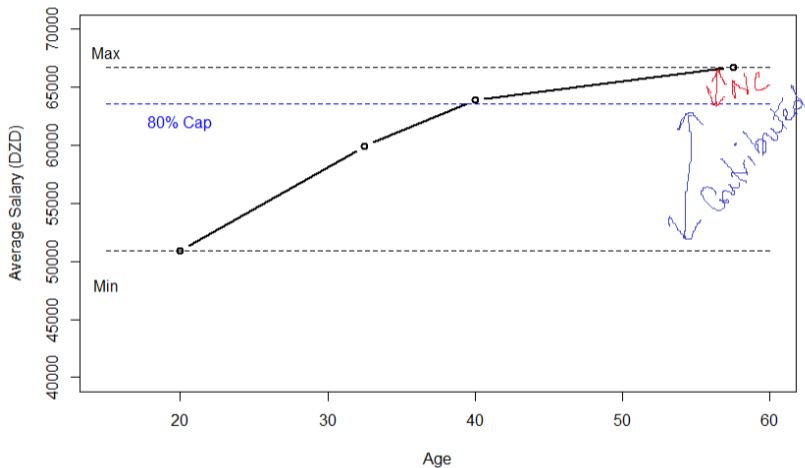


Source: Flici, F. (2023, Forthcoming). The Limits of Parametric Reforms in Sustaining the Algerian Retirement System in a Context of Population Aging, International Social Security Review,

# The Contribution Cap Strategy: An Overview

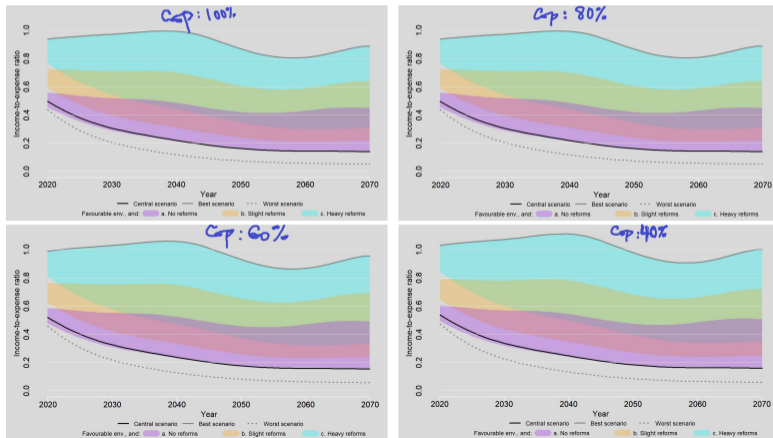
- Current paid contributions involve pension payment promises in the future,
- Within a Financially unbalanced systems, the deficit is covered by public subsidies,
- Public subsidies are usually more beneficial for high earning workers (Excluding subsidies provided to very small pensions),
- Capping the contributed salaries is assumed to reduce future payment promises without affecting small pensions,
- We compare various caps (e.g., 80%, 70%, 60%, 50%, 30%, ...etc.) and compare to no cap situation,
- For each cap, we assess 300,000 scenarios combining the possible environment changes and reforms actions,
- The objective is to detect if sustainability can be maintained within some caps, and under which conditions,

# The Contributed Salary Cap



# The Contribution Cap Strategy: Results

- Starting from the cap of 60%, we can hope to have a positive balance (positive environment evolution + heavy reforms) up to 2045 and a controllable deficit afterward;
- Contributed salaries capping can also help stabilizing the future deficit even with slight parametric change (but with favorable environment conditions)





## Concluding Remarks

- The effect of aging is important and need to be considered with further attention;
- Other challenges: high inflation, informality;
- Some parametric reforms; if some conditions are gathered, can keep the deficit stable over time;
- Heavy parametric reforms can be implemented to make the deficit stabilizing around 20% and seek complementary resources (Taxation for example);
- Contribution ceiling strategy may help in reducing the pension system burden and keeping the deficit controllable by the long run.
- a Cap of 65% - 60% or lower can generate a positive balance in the next two decades if the environment evolves positively and if slight/heavy reforms are introduced;
- a complementary (less generous) scheme needs to be implemented to allow high earning workers to improve their retirement incomes;

# Thanks For Your Attention



e-mail: [farid.flici@cread.dz](mailto:farid.flici@cread.dz)

Webpage: <https://farid-flici.github.io>