The future of population aging in Algeria: Implications on pension sustainability

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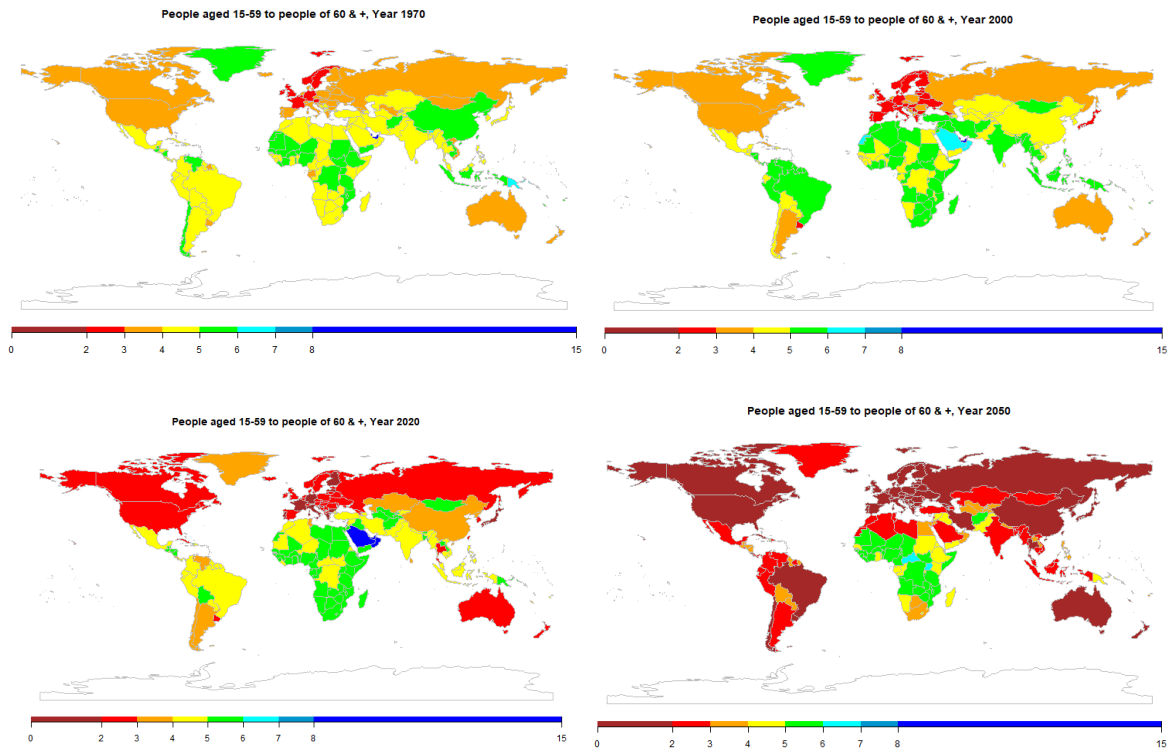
Context

Pension systems, regardless of financing mechanism, are an effective means to keep individuals out of poverty once they reach old age and lose their working capacity. Classically, pensions are financed through Pay-As-You-Go (PAYG) systems, which makes current workers contribute to pay the pension benefits of current retirees. Although they allow to strengthen solidarity between the different generations, PAYG systems - which are very adopted in developing countries - are very sensitive to changes in population structures.

Figure 1. The evolution of life expectancy and total fertility rate in Algeria

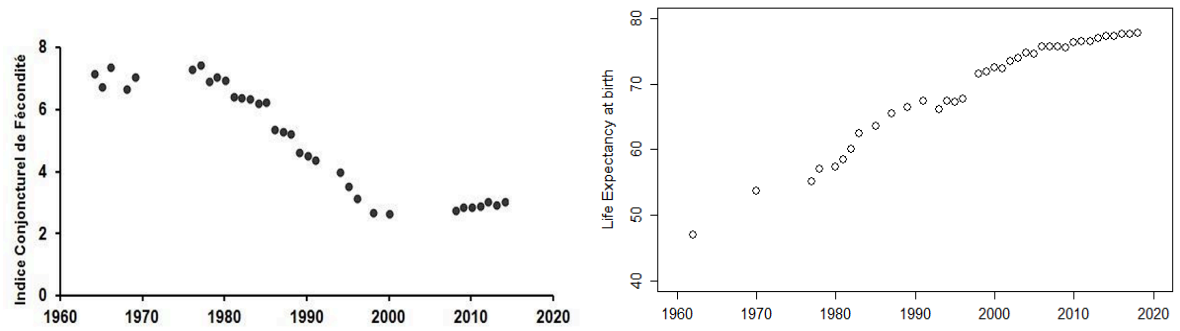


Population aging translates by a continual increase of share of the elderly relative to the working age population. Such an imbalance impacts directly the

contributors-to-retirees ratio, and consequently the financial balance of the whole system. As population aging is worldwide, many countries - especially those laying on a unique or dominant PAYG pillar - have undergone population aging consequences and were forced to operate heavy reforms of their pension systems starting from the mid-80s. Around four decades later, the situation is even worse as fertility rates have fallen dramatically while life expectancy continued improving. Projections say that the aging process will be more intense in the coming decades, involving heavy burdens on pensions sustainability all over the world. Figure 1 shows the evolution of the ratio of people at working age to people at retirement age in world countries from 1970 to 2020, and 2050.

If fertility rates in sub-saharan africa are still among the highest in the world, fertility rates in north african countries are significatively much lower, but still above the regeneration threshold. In Algeria, the total fertility rate was between 6 and 8 during the two decades after the independence in 1962. It took a decreasing trend starting from the mid-80s to reach its lowest level -of around 2.5 - towards the end of 1990s and stood at that level for almost a decade before raising back to around 3 children per woman starting from 2013 (Flici, 2016). On the other hand, life expectancy keeps improving, even at a slowing pace (Flici, 2020). It increased from 54 years in 1962 to around 78 years in 2019 (Figure 2).

Figure 2. The evolution of life expectancy and total fertility rate in Algeria



Prospects about future evolutions indicate that in the highest scenarios, fertility rates will stay at their current level of 3 children per woman, while a decrease towards a level of 2.5 by 2050 is very expected. What remains certain is that the population aging will be impactful in the coming decades. From the independence of Algeria in 1962 to the late 2020s, the ratio of the population at working age to the population of elderly was always above 6 and attained 8 in some periods of time. Starting in 2022, this ratio fell for the first time below the value of 6 (Flici & Kouaouci, 2021), and is expected to fall down 3 starting from 2045 (Flici, 2020b).

Objectives

The implications of population aging on the financial balance of Algeria's public pension plan for salaried workers, which started already to record negative value,

will be very heavy (Flici & Planchet, 2020). Parametric reforms have little chances to save the system from collapsing by the long term (Flici, 2023). Maintaining the system sustainable will require more than just postponing retirement age, increasing contribution rates, or reducing pension benefits rates. In this paper, we present an overview of the aging situation in Algeria, including future perspectives. Then, we will illustrate the implications of population aging on the financial sustainability of Algeria's public pension plan, and discuss some ways of reforms.

Method

In order to evaluate the effect of population aging on the financial balance of Algeria's system, we conduct a multi-scenarios analysis involving different combinations of socioeconomic variables, including activity, employment, enrollment in social security, salary growth, etc. From one side, we consider the population pyramid to keep changing as expected in the population projections of Flici (2020c). On the other hand, we assess the sustainability of the pension system under a constant population structure. The gap between the results obtained under the two population evolution hypotheses represent the effect of population aging.

References

Flici, F. (2016). Forecasting the age-specific fertility rates of the Algerian population up to 2050 , *MPRA Paper No. 99077*.

Flici, F. (2020a). Analyzing the Trend of Life Expectancy Evolution in Algeria from 1962 to 2018: The S-logistic Segmentation with Jumps. *Population Review* 59(1), 56-72, doi: 10.1353/prv.2020.0002

Flici, F. (2020b). *Population Projections Using R - Including Dynamic graphical Visualizations*. A textbook published with Gitbook, Available at: [https://farid-flici.gitbook.io/pop-proj-dz/], Version of 2020-04-30.

Flici, F. (2020c). *Multi-scenarios Population Projection for Algeria*. A textbook published with Gitbook, Available at: [https://farid-flici.gitbook.io/multi-scenarios-population-projection-for-algeria/], Version of 06-05-2020.

Flici, F.(2023). The limits of parametric reforms in sustaining the Algerian retirement system in a context of population ageing. *International Social Security Review, 76(3):47-67.* https://doi.org/10.1111/issr.12335

Flici, F., & Planchet, F. (2020). Financial Sustainability of the Algerian Retirement System: a perspective analysis of the 50 coming years. In Peris-Ortiz, M.; Alvarez-Garcia, J.; Dominguèz-Fabian, I. and Devolder, P. (Eds), *Economic Challenges of Pension Systems- A sustainability and International Management Perspective*, Springer Nature, Switzerland.

Flici, F., & Kouaouci, A. (2021). *Population ageing in Algeria: Why should we start caring about?* [Policy Brief A/2021/01]. Research Center in Applied Economics for Development CREAD, Algiers, Algeria. URL: http://cread.dz/wp-content/uploads/2021/12/A202101.pdf