CONSEIL D'ORIENTATION DES RETRAITES
Plenary session July 8, 2021 at 10:00
"Taking into account life expectancy in schemes' simulation models (2nd part)"

Brief

Prepared by the General Secretariat of the Council, under the direction of the President of the COR

Summary:
Life expectancy is essential for anticipating future expenditure on the pension system and for comparing the length of retirement of successive generations. Many studies highlight significant disparities in life expectancy depending on the socio-professional category of individuals. This observation has led a number of pension schemes to develop specific mortality tables that best reflect the characteristics of their insured population. This session aims to understand better how the schemes integrate this mortality gap into their simulation models and to verify that it does not lead overall to deviate significantly from the demographic assumptions projected by INSEE.

I. Some life expectancies specific to each scheme, in line with the characteristics of their members

- **What is the observed mortality of former private sector employees?** Under the general scheme, if the overall mortality of CNAV retirees differs little from that of the entire French population, this finding is no longer valid when retirees are distinguished according to the type of pension received. Retirees receiving a normal pension have on average higher life expectancies than those receiving a pension for incapacity and former invalids (*documents no 5, 9 and 11*). Former executives affiliated to AGIRC-ARRCO experience the lowest mortality in the scheme, while non-executives have a life expectancy close to that of the French population (*document no 6*).

- **What about former civil servants?** Retired civil servants, excluding invalids and military personnel, have a higher life expectancy than that of the entire French population (*document no 7*). The largest gap is in A and B category jobs, whether sedentary or active, as well as military officers for men. Conversely, invalids and non-commissioned members (soldiers and corporals) have a lower life expectancy than the overall population. In the territorial and hospital civil service, the observation is more nuanced (*document no 8*). Overall, the life expectancy of CNRACL retirees is close to that of the entire French population, slightly higher for women and slightly lower for men. When retirees receiving a disability pension are excluded, life expectancy for women becomes higher than that of all French women and that for men approaches the average for all men.

II. More than half of the schemes develop their own mortality tables

- **Which schemes exclusively use INSEE mortality tables?** Seven schemes out of the 16 surveyed by the COR exclusively use the INSEE mortality tables in their projection model: the Banque de France pension scheme, the FSPOEIE, the CNBF, the RATP special regime, the CRPEN, the ENIM and the CNAVPL (*documents no 2 and 2bis*). Several reasons may explain this choice: the mortality of their members is comparable to that of the French population or their numbers of retirees are too low to draw up reliable estimates of mortality; it can also be a regulatory provision.

- **Which schemes develop their own mortality tables?** IRCANTEC, CNIEG, the Mines regime, MSA (non-salaried agricultural workers), CPRPSNCF, SRE, AGIRC-ARRCO, CNAV and CNRACL develop their own mortality tables due to the difference in mortality observed by these schemes. For these schemes, using specific mortality tables makes it possible to better measure the longevity risk and to estimate financial commitments as accurately as possible. Two methodological approaches can be distinguished: an adjustment of the INSEE tables by age shifting or an own modelling (*documents no 2 and 2bis*).

- **How would revisions of INSEE mortality assumptions be taken into account?** INSEE is required to revise regularly its assumptions on population mortality. For schemes directly using INSEE life tables, the exercise is quick and easy because it is a simple application of the new set of assumptions. For those who develop their own mortality tables, however, the update is not necessarily immediate and can take up to six months due to the complexity of the methodology used (*documents no 2 and 2a*).

III. Taking into account a differential mortality by the projection models of the schemes would very slightly underestimate the overall mortality of pensioners

- **How to study the impact of mortality gap on financial projections?** Analyzing the impact of the differential mortality of schemes on projections is a tricky exercise. The most obvious approach would be to compare, for the same generation, the total number of retirees still alive each year with those projected by the Destinie microsimulation model, the latter simulating mortality according to INSEE's demographic assumptions (*document no 4*). However, the fact a pensioner can be affiliated to more than one scheme makes this comparison difficult. To overcome this difficulty, an approximation is proposed using an approach by pension expenditures (*document no 3*). The comparison of their evolution over the years, for a given generation, with those from Destinie makes it possible to assess the good adequacy of the schemes' mortality rates with those of INSEE. The comparison is made on the general scheme (basic and complementary) and on the civil servant schemes (State civil service and territorial and hospital civil service) for the 1950 and 1970 generations.

- **Does taking into account differential mortality by schemes lead to an overall deviation from the demographic assumptions projected by INSEE?** Overall, the evolution in pension benefits paid by CNAV, AGIRC-ARRCO, SRE and CNRACL, on the basis of their own mortality assumptions, would indicate a slightly lower mortality than that of the Destinie model (*document no 3*). The gap is not such that it could change the overall assessment of the state of the pension system; it only appears that the COR projections based on the aggregation of the schemes projections are on this point "conservative" compared to those which would emerge from the use of the Destinie model.