Pri-2012 Private Retirement Plans Mortality Tables

October 2019

Overview

The Society of Actuaries' (SOA) Retirement Plans Experience Committee (RPEC) has released the final Pri-2012 Mortality Tables for private-sector retirement plans in the U.S. The tables were developed from data collected for 2010–2014. The central year of the data is 2012, hence the name. These tables are intended to be adjusted with a mortality improvement scale. The Pri-2012 Mortality Tables update the RP-2006 Mortality Tables[1], which were developed from data collected for years 2004–2008. Questions on the report and tables may be submitted to Patrick Nolan at pnolan@soa.org.

Highlights

- For the Pri-2012 Mortality Tables, data were collected from private-sector pension plans across the U.S., and the final dataset includes approximately 16.1 million life-years of exposure and 343,000 deaths. Data were received from a total of 18 different entities that submitted information for 402 plans. Unlike the RP-2006 tables (which had minimal multiemployer data), the Pri-2012 study includes a substantial amount of data from multiemployer plans; approximately 41% of the total Pri-2012 dataset and approximately 70% of the blue collar dataset came from multiemployer plans.

- Most plan sponsors that update their mortality assumption from the RP-2006 tables to the Pri-2012 tables will experience only a small change in their pension liabilities, usually within plus or minus 1%. The amount will vary depending on the plan's mix of collar, age, and gender, as well as the discount rate and other assumptions used to compute liabilities.

- Collar type (white or blue) and income level[2] were shown to be significant indicators of mortality in the Pri-2012 study. In particular, the study data indicated that collar type was a stronger predictor of longevity than plan benefit amount.

- After controlling for other factors, such as collar type and income level, participants in multiemployer plans did not exhibit significantly different mortality than participants in single employer plans. As a result, RPEC did not produce separate Pri-2012 tables for multiemployer plans.

- When comparing the RP-2006 and Pri-2012[3] total dataset tables, the life expectancy as of 2019 for an age-65 female remained roughly constant at 87.4 years, while for an age-65 male, life expectancy declined slightly from 85.0 years to 84.7 years.

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[1] The RP-2006 Mortality Tables are based on the same data as the RP-2014 Mortality Tables, but are as of the year 2006, the central year of the RP-2014 study dataset; removing Scale MP-2014 mortality improvement for 2007-2014 from the RP-2014 Mortality Tables yields the RP-2006 Mortality Tables.
[2] For purposes of this document, "income level" refers to salary for active employees and plan benefit amount for pensioners.
[3] Both tables projected generationally with MP-2018

Other Observations and Comments

- Like the RP-2006 tables, the Pri-2012 report contains many different sets of mortality tables, including those based on the complete, final dataset and those based on various subsets of the data. Analysis during development of the Pri-2012 tables upheld some long-observed mortality traits:

    o Females generally live longer than males.

    o Participants in white collar jobs generally live longer than those in blue collar positions.

    o Participants in the top 25% of income generally live longer than those in the bottom 25%.

- However, the Pri-2012 study also includes some differences from the RP-2006 tables:

    o The Pri-2012 white collar dataset showed greater life expectancy than the top income quartile dataset; the opposite was true for the RP-2006 tables. This may be partly explained by the significant changes in salary levels / benefit amounts that comprise the top and bottom quartiles between the RP-2006 tables and the Pri-2012 tables.

    o After controlling for age and gender, longevity for contingent survivors (e.g., surviving spouses) was generally lower than that for retirees. The Pri-2012 tables include separate mortality tables for contingent survivors and retirees, whereas the RP-2006 tables did not.

- Following are some examples of how retirement plan liabilities of different compositions might be impacted when updating from an RP-2006 table to the corresponding Pri-2012 table under typical interest assumptions used for current accounting valuations:

    o Plans using the unadjusted blue collar tables will see varying effects depending on plan composition. Specifically, plan liabilities for blue collar females and older blue collar males may decrease up to 1.5%, while plan liabilities for younger blue collar males may increase up to 1.7%.

    o Plans using the unadjusted white collar tables may see liabilities decrease, generally by up to 1.0%. Plans covering primarily older white collar participants may see larger decreases.

    o Plans using the unadjusted top quartile tables to model the mortality of executives or highly-paid participants will want to consider whether unadjusted Pri-2012 top quartile rates are still appropriate given the significant decline in the income threshold levels (especially for retirement benefit amounts) associated with the top quartile of the Pri-2012 data set compared to RP-2006.

- Life expectancy is not used directly in the valuation of retirement plan liabilities. However, in general increased life expectancies indicate increased plan liabilities, and decreased life expectancies indicate decreased plan liabilities. Figure 1 and Table 1 show a comparison of selected cohort life expectancies for a retiree aged 65 in 2019 based on both the RP-2006 and Pri-2012 tables.
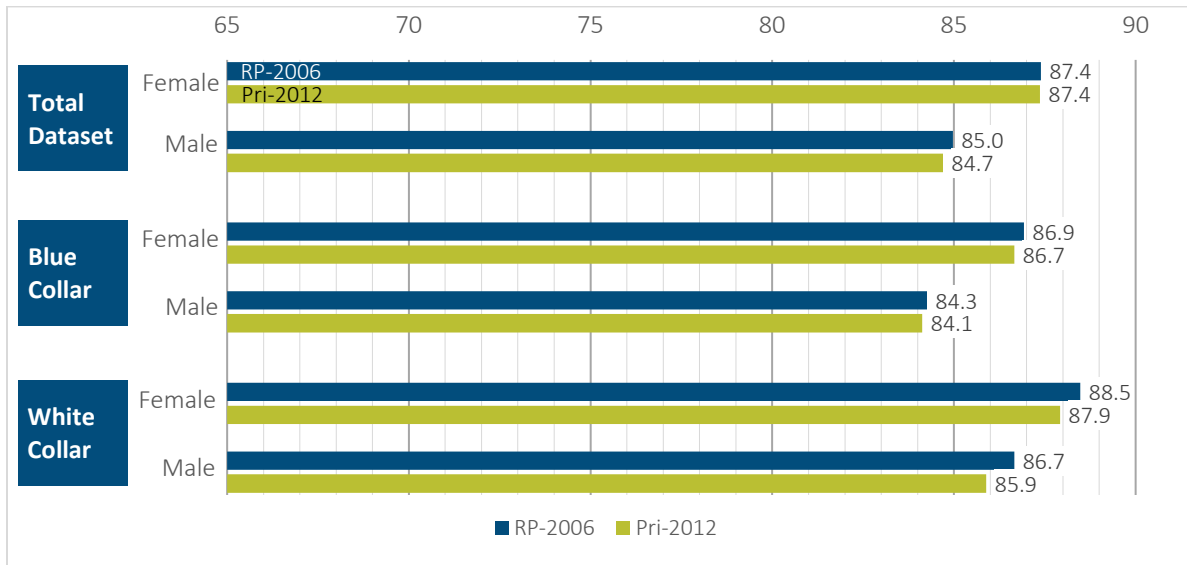
Figure 1
AGE 65 LIFE EXPECTANCIES IN 2019[4]

Table 1
AGE 65 FUTURE LIFE EXPECTANCIES IN 2019[4]

Dataset	Female			Male		
	RP-2006	Pri-2012	% Change	RP-2006	Pri-2012	% Change
Total	22.39	22.37	−0.1%	19.97	19.70	−1.3%
Blue Collar	21.93	21.66	−1.2%	19.26	19.13	-0.7%
White Collar	23.48	22.92	−2.4%	21.66	20.89	−3.6%

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