

Projections of dynamic generational tables and longevity risk in Chile

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Abstract

The increase in longevity risk is leading to serious challenges for economies. Industries such as insurance and pensions, which are most closely related to the management of the risks of an aging population, have for a number of years experienced direct effects of this kind. To counterbalance this, they have developed techniques for constructing mortality tables in order to project the future trends of life expectancy at birth and thus reduce the level of uncertainty that this market by its nature involves. Developed countries have led technical improvements for constructing these tables, while Latin American countries have lagged behind significantly in this respect. Given that these countries cannot yet develop tables weighted by social and medical aspects, it is highly probable that this situation will continue. That is why this study aims to construct a forecast for mortality rates, based on projection models of the ARMA (p, q) type and non-parametric contrast methodology. The study is based on the case of Chile, which provides most information for constructing a model for a Latin American country. The estimates show that the official mortality tables in Chile could include significant lags by 2050, which will have major negative effects on the pension and insurance industry, in the hypothetical case that they were not updated. In another exercise, using the mortality table estimated in this work, we found that if pensions in Chile are not to lose their purchasing power, the contribution rate would have to be increased by 8 percentage points in the case of men and 4 in the case of women. Given that Chile is the best developed country in the region with respect to mortality tables, the negative effects on the rest of Latin America could be even more worrisome.

Key words: Pensions, insurance, longevity risk, mortality tables, Latin America, Chile.

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