Justyna Majewska (University of Economics in Katowice)
Grażyna Trzpiot (University of Economics in Katowice)

An EU cross-countries comparison study of life expectancy projection models

Topic 2 – Learning more from what we already know

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Introduction

Economic development and the improvement in some environmental conditions improved lifestyles, advances in healthcare and medicine, have resulted in a continuous increase in life expectancy at birth across all Europe during the last century. This process has been going on for longer in Europe than in most other parts of the world, placing the EU-28 among the world leaders for life expectancy [Eurostat, 2015]. Over the past 50 years life expectancy at birth has increased by about 10 years for both men and women in the EU-28. Life expectancy at birth in the EU-28 was estimated at 80.6 years in 2013, reaching 83.3 years for women and 77.8 years for men. During the more than a decade between 2002 (the first year for which data are available for all EU Member States) and 2013, life expectancy in the EU-28 increased by 2.9 years, from 77.7 to 80.6 years - the increase was 2.4 years for women and 3.3 years for men [Eurostat, 2015]. While life expectancy has risen in all EU Member States, there are still major differences between and within countries. With the aging of the world's population, mortality and life expectancy projections becomes more and more important, especially for the insurance and pension industries. A wide range of projection methods is in use, both between and within countries that produce different outcomes.

Methods / Problem statement

We review different mortality projection models and their assumptions, and assess their impact on projections of life expectancy for selected countries in Europe. We focus on methods that are in use in statistical offices in Europe, and we compare them with some more advanced stochastic age-period-cohort stochastic models. The aim of the presentation is to compare results in life expectancy levels obtained from different models and official projections rather than indication one the most suitable model for mortality and life expectancy projections. The data sets for calculations are obtained from the Human Mortality Database and websites of national statistical offices.