WIC Colloquium
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Vienna Institute of Demography
Welthandelsplatz 2 / Level 2
Nathan Keyfitz Library
1020 Vienna

Dalkhat Ediev
North-Caucasian State Academy

Monday, 29. July 2019
15:00-16:00

"Years of Life at Old Age: Simultaneous Estimation of Population and Life Expectancy"

Traditional estimates of remaining life expectancy at old age are overly sensitive to the stable population growth rate assumed in the respective models. This leads to considerable errors, mostly overestimates, of life expectancy estimates for populations advanced in mortality reduction. In view of this sensitivity, we examine methods where the stable population growth rate and, more generally, the presumed elderly population age composition are obtained endogenously within the estimation model. The basis for implementing such approaches to estimating mortality at old age is the constrained mortality extrapolation model (Ediev 2018) that allows obtaining the death rates at old age from a tentative estimate of the remaining life expectancy at the beginning of the open age interval. The model assuming population stability appears as accurate as the Mitra model, the most accurate among the traditional models, and to be less prone to produce outlier estimates than the Mitra model. In the more general model, we suggest estimating the age composition of the elderly population to assess the correction coefficient for the remaining life expectancy in the open age interval. To this end, we assume no migration, apply the constrained mortality extrapolation and use the cohort-component projection of the elderly population starting from the initial age structure assumed stable. Results simulated based on the HMD data point to rather accurate estimates produced by the suggested iterative procedure that may find numerous practical applications in constructing and improving life tables for populations with missing or distorted mortality statistics at old age and those affected by age exaggeration.

About the presenter
Dalkhat Ediev, a long-time employee of VID, is vice-rector and professor at North-Caucasian State Academy, is Professor at Moscow State University and guest researcher at IIASA. His main research interest is in demographic methodology, formal demography and demographic projections.