Sensitivity analysis of population structure dynamics: the case of Croatia

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Abstract:
In recent years significant number Croatian people decided to emigrate. Emigration population is mostly of younger age. Main reason were better opportunities at the labour market. Migration, with fertility and mortality, is one of the most significant determinants of future population structure. Purpose of our research is to assess effect of those determinants on population structure of Croatia. In our research, we used cohort-component analysis to create population projections. Change of Croatian population components are projected separately for each birth cohort (one-year groups) using past trends of fertility rates. For each year, up to 2045, the population is aging using age-specific mortality rates, estimated migration population. Main source of the data is Croatian bureau of statistics (DZS), specially their publications: Census of population, households and dwellings in 2011 and Population projections of the Republic of Croatia, 2010 – 2061. Results of the analysis demonstrate impact of change in negative migration change, fertility rates and mortality rates on structure. i.e. quantification of the impact. Emigration, previously underestimated, has significant impact to the population structure. From the perspective of sensitivity analysis, this determinant is potentially has the largest negative impact on population. Official Projections can give misleading information about the future. The impact can be viewed from economic perspective, as a loss of highly trained workers, or also from social perspective, e.g. children left behind grow up without parents or in other case without a wider family circle. Awareness about the demographic changes is first step to make appropriate policy actions.

Keywords: modelling with demographic variables, population aging, population migration, sensitivity analysis.

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