

Lifecourse Heterogeneity and the Future Labour Force – a Dynamic Microsimulation Analysis for Austria

Thomas Horvath* and Martin Spielauer*

Accurately capturing the heterogeneity of individual life courses and activity careers enhances the accuracy, detail, and policy relevance of population and labour force projections. We utilize the microsimulation model MicroDEMS, a detailed national implementation of the comparative microWELT model (www.microwelt.eu), to project the future size and composition of the population and its workforce. Drawing from a representative cross-sectional dataset of the Austrian population, MicroDEMS intricately simulates individual life courses within the individual family context. Our model extends official population projections by incorporating multiple dimensions, including educational differentials in mortality and fertility and detailed modelling of international migration. Education attainment and labour market participation are meticulously modelled, considering personal, family, and institutional factors influencing education outcomes, health status, partnerships, and labour market engagement.

Regarding labour market outcomes, our model incorporates consistent longitudinal labour market careers, where transitions between different activity states are contingent upon personal characteristics and the duration of the current labour market state. By leveraging comprehensive longitudinal social security data, we estimate hazard rate models that capture realistic labour market transitions and lead to authentic representations of labour market exits such as retirement or permanent disability. In addition to projecting the evolution of the population and its workforce, our model enables a wide range of what-if scenarios, allowing us to assess the sensitivity of our results to changes in underlying model parameters. We identify and implement a range of policy levers, some targeting specific groups (e.g., mothers of young children, people with health limitations, and long-term unemployed). Thus, our model serves as an ex-ante policy tool, empowering us to evaluate the impact of stylized policy scenarios on medium- and long-term socio-economic outcomes.

*Austrian Institute of Economic Research (WIFO); email: thomas.horvath@wifo.ac.at

*Austrian Institute of Economic Research (WIFO); email: martin.spielauer@wifo.ac.at