

Updating and extending the data basis for the dynamic microsimulation model MOSART

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Abstract

Statistics Norway's dynamic microsimulation model MOSART is used to project demographic development, educational performance, labour supply and pension expenditures. During the past decade the model has been extensively used in evaluating the design of a pension reform that is going to be implemented in 2011. Based on a representative sample from 1993 (calibrated to a more recent year by aggregate data), the model simulates the further life course for each individual in this initial population. It would be of obvious value to update and extend the data basis by more recent information, and this work is planned to be completed in the beginning of 2009. By merging relevant information from different administrative registers it is now possible and most appropriate that this basis should include the entire Norwegian population, and new available information should be added regularly. Due to use of computer time it will probably still be most convenient to perform the simulations based on a sample of the population, but this may change in the near future. The entire data register will be used when creating initial populations, in estimation of transition probabilities and as a standard of reference for historical simulations. Longitudinal administrative data are now available for most of the important characteristics.

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We have started the work with updating and extending the data basis for the model. The merging of data from different administrative registers is almost completed. Work on securing quality, documentation and implementation in MOSART remains. We probably may find it appropriate to supplement with some more data. Compared to the present version of the model the main differences are:

- i) The data base will include the entire population, against a 12 per cent representative sample with the previous version.
- ii) Time series will be extended to 2006, against 1993 with the previous version
- iii) Information about education will be extended back to 1973, against 1985 with the previous version
- iv) Information from new administrative registers will be included, providing improved information about households and income.

We aim at establishing routines improving the possibility to maintain and update the data base in a more flexible way by adding information from new and updated statistics each or every second year. In addition to getting new data, longer time series is the major gain from updating and extending the data base. In the previous version estimation of transition probabilities for individuals was limited to 8 years (1985-1993). With the new version the period of estimation may be extended up to 33 years (1973-2006). The extension makes it simpler to catch up heterogeneity and differences among individuals taking the entire life course into consideration.

Especially, our working plans for 2009 and 2010 include re-estimation of transition probabilities connected to income profiles, choice of education and decisions about retirement. MOSART will also be extended to include gross in- and out-migration, including information about region of origin. In 2008 net immigration to Norway reached 43 000 persons exclusive persons on short-term stay, corresponding to almost 1 per cent of the entire population. Most immigrants arrived from Eastern Europe, especially Poland. The rather high immigration may be explained by the extension of the integrated labour market in the European Economic Area in combination with a very tight labour market in Norway. In the same year the number of births in Norway was 61 000 persons. If the level of net immigration should persist, this would be a decisive factor for demographic development in Norway. Although immigration has been somewhat reduced as a result of the present economic crises arising from the financial markets, a persisting high immigration call attention to the need for a more detailed modelling of immigration than treating the net immigrants as a homogenous group.