SUMMARY

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New methods in pension evaluation

Applications of trajectory analysis and dynamic microsimulation

This thesis has three aims. First, to introduce and apply two new techniques in pension evaluation: trajectory analysis and dynamic microsimulation. Trajectory analysis has been used in many fields of science, and it has proven to be a useful technique in longitudinal analysis. Trajectory analysis can be used to reveal latent sub-groups of population that might otherwise remain hidden. Early adulthood labor market attachment paths of the Finnish male cohort born in 1987 is the focus of one sub-study, and pension contribution behavior of the self-employed is the focus of another. The Finnish Centre for Pensions has developed a dynamic microsimulation model, ELSI. The model can be used to analyze the effects of changes to pension rules on pensions. The model is presented in one sub-study. Also, a study that merges dynamic microsimulation and trajectory analysis yields new insights into microsimulation results and advances the validation of the microsimulation model.

The second aim of this thesis is to discuss the substantial contents of two central topics. First, how to detect those young people who, after completing compulsory education, experience difficulties with labor market attachment, as well as how to measure labor market attachment in general. The study shows that about 12 per cent of each cohort is at risk of becoming a NEET. Second, a prolonged problem in the pension scheme for the Finnish self-employed has been that they choose to pay pension contributions that are too low (based on a technically confirmed income), which has led to deficits in pension security. Trajectory analysis is used to reveal the

sub-groups of the self-employed with different levels of confirmed income. A majority, nearly 84 per cent of the self-employed, is financially ill-prepared for old age.

The third aim of this dissertation is to introduce new concepts and measures to labor market research. The concept of a cross-sectional NEET is challenged by introducing a longitudinal measure that includes the labor market statuses of the concept. The traditional measures of life course studies – duration of working life and working life expectancy – can be complemented with a new measure: partition of the life course. For pension evaluation, the partition might be enlightening as it reveals the shares of active stages (employment) and inactive stages (e.g., retirement, spells on social security benefits) in a lifespan.

Key terms:

mixture regression, trajectory analysis, dynamic microsimulation, NEET, self-employed, statutory pension

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