

Latent Markov Chain Analysis of Income States with the European Community Household Panel (ECHP). Empirical Results on Measurement Error and Attrition Bias.

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Abstract

In examining dynamic aspects of poverty, economists and other social scientists have focused their attention on panel data. Information on individual income histories can be used for conclusions about the persistence of poverty. These conclusions, however, can be affected by measurement error and non-response. In the European Community Household Panel (ECHP) some countries use income data from the questionnaire while others with national registers use information collected from administrative records. The existence of survey-based and register-based income information for the same persons provides a unique opportunity to study how sensitive measures of income mobility are with respect to the underlying data source. Furthermore, if the register income is taken to be the "true" income, the measurement error can be directly identified. The effect of non-response can be examined using information from register also for non-responding persons. In this paper we investigate transition tables between subsequent income states. Latent Markov chain models are used to model incorrect classification of income states. Misclassifications are interpreted as measurement error or spurious changes that are not consistent with a manifest transition table model. The empirical results for the Finnish ECHP show that much of the observed movement into and out of poverty is caused by error in the measurement of income. The analysis of non-response shows that attriters are more frequent among persons who stay in poverty or who switch to lower income positions. The analysis is demonstrated for the first five waves of the Finnish ECHP.