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EXECUTIVE SUMMARY

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Dynamic analysis of Finnish poverty in 1995–2008

Persistence of poverty and state dependence

A large, register based Finnish panel data set in 1995–2008 is used to examine the dynamics of income poverty. Poverty entry and exit rates are estimated using a two state Markov chain which is based on a dynamic Probit model. There are two different explanations for persistence of poverty spells, first, state dependence, a causal effect of being poor (non-poor), and second, a manifestation of a stable trait and spurious correlation due to unobservable individual heterogeneity (Heckman 2001). For design of policy measures there are obvious needs to distinguish between these explanations but they are confounded by an 'initial conditions' problem. The problem is caused by presence of both the past value of the dependent variable and an unobserved heterogeneity term in the equation and the correlation between them. The exogeneity assumption breaks down, and the estimators are biased toward over-estimating the extent of state dependence.

The initial conditions problem is solved by using both Heckman's original (1981) and Wooldridge's (2005) methods. The methods gave closely similar results on the extent of state dependence. There is a clear state dependence with past poverty increasing the mean poverty rate by about 10 percentage points. Estimations in various age groups indicated that the extent of state dependence is increasing with age, with the exceptions of young adults and children. Also pensioners had stronger state dependence than the rest of the population.

Among changes in family size and status, separation or death of a spouse indicated most significant additional risk of poverty. The estimated effects get larger as persons get older and there are substantial male-female differences. Comparison of the estimated parameters across successive time panels showed significant changes in the poverty generating process. In contrast, changes in the distribution of explanatory variables had a minor influence on the poverty rate at the population level.

Poverty has become a more chronic problem, poverty exit rates have fallen and the duration of poverty spells have increased. Similarly, the results show some increase in poverty entry rates. Here, population heterogeneity and sample selection into those with low exit and high entry rates into poverty and those with high exit and low entry rates play a more important role than the modest increase in state dependence that is observed across successive time panels. In contrast, the estimated 'fixed effects parameters' showed substantial changes in the contribution of several variables controlling for individual heterogeneity.

The results suggest that poverty has become a more severe problem through several channels influencing 'poverty traits' at individual level. Differences in poverty traits across educational levels and socio-economic groups have been widening over the observation period. Those with lower educational levels, pensioners and unemployed have experienced a particularly large increase in poverty. Young adults face particularly high risks and the age profiles of poverty traits show an increase in the age of the most vulnerable group.

The study showed interesting differences across the range of dynamic estimators considered. Heckman's model showed some gain in evaluating temporal changes if compared with the Wooldridge model. The random effects estimator had a particularly poor performance in uncovering poverty dynamics and failing to account for individual heterogeneity; particularly, the extent of state dependence was estimated with a substantial bias.

Key words: Poverty dynamics; poverty entry and exit, dynamic Probit model, initial conditions problem

JEL classification: C23, C25, D31, I32

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