Assessing Wage Status Transition and Stagnation Using Quantile Transition Regression

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Abstract

Workers in Taiwan overall have been suffering from long-lasting wage stagnation since the mid-1990s. In particular, there seems to be little mobility for the wages of Taiwanese workers to transit across wage quantile groups. It is of interest to see if certain groups of workers, such as female, lower educated, and younger generation workers, suffer from the problem more seriously than the others. This work tries to apply a systematic statistical approach to study this issue, based on the longitudinal data from the Panel Study of Family Dynamics (PSFD) survey conducted in Taiwan since 1999. We propose the quantile transition regression model, generalizing recent methodology for quantile association, to assess the wage status transition with respect to the marginal wage quantiles over time, as well as the effects of certain demographic and job factors on the wage status transition. Estimation of the model can be based on the composite likelihoods utilizing the binary- or ordinal-data information regarding the quantile transition, with the associated asymptotic theory established. A goodness-of-fit procedure for the proposed model is developed. The performances of the estimation and the goodness-of-fit procedures for the quantile transition model are illustrated through simulations. The application of the proposed methodology to the PSFD survey data suggests that female, private sector workers with higher age and education below postgraduate level suffer from more severe wage status stagnation than the others.