

Performance-Related Pay and Earnings Dynamics in West Germany.

A GEE-type Approach to a Two-Equation Panel Data Model with Continuous and Limited Dependent Variables

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Abstract:

The main contribution of the study is to provide empirical evidence on an interaction between changes in the wage distribution and changes in the prevalence of performance-related pay (PRP) in West Germany in the 1990s based on GSOEP Data. We start with a descriptive analysis of changes in the wage distribution, changes in the prevalence of PRP as well as a link between both series. Our econometric analysis employs a two-equation panel data model with a continuous dependent variable (wage), a discrete dependent variable (PRP) and a flexible joint covariance matrix. We find a significant positive correlation between the residuals in the wage equation and the residuals in the PRP-equation. Moreover, we can show that (a) shocks in the wage equation have a long lasting effect on transitory earnings, while shocks exhibit no enduring impact on the likelihood of working within a PRP-scheme, and (b) the ratio of the permanent variance component and the overall variance is relatively more important for the PRP-equation than for the wage equation. Combining our results with evidence from other studies regarding the notable stability of the permanent income component in West Germany, we conjecture that one source of rising volatility in wages in West Germany in the 1990s is the increasing prevalence of PRP-schemes.

From an econometric point of view, the study demonstrates the flexibility of our GEE-type approach, which can easily be extended to systems of multiple equations for panel data with mixed continuous and limited dependent variables. Unlike the GEE approach proposed by Liang and Zeger (1986), however, our approach allows the estimation of the parameters of the systematic part of the model as well as the parameters of the covariance model. Moreover, the approach is quite flexible, since there is no restriction on the covariance model.

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