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# Consistent Estimation of Linear Panel Data Models with Measurement Error

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## Abstract

Measurement error causes a bias towards zero when estimating a panel data linear regression model. The panel data context offers various opportunities to derive instrumental variables allowing for consistent estimation. We consider three sources of moment conditions: (i) restrictions on the covariance matrix of the errors in the equations, (ii) nonzero third moments of the regressors, and (iii) heteroskedasticity and nonlinearity in the relation between the error-ridden regressor and another, error-free, regressor. In simulations, these approaches appear to work well.

**JEL Classification:** C23, C26

**Keywords:** measurement error; panel data; third moments; heteroskedasticity; GMM

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