

Estimation of Heterogeneous Panels with Structural Breaks

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Abstract

This paper extends Pesaran's (2006) work on common correlated effects (CCE) estimators for large heterogeneous panels with a general multifactor error structure by allowing for unknown common structural breaks. Structural breaks due to new policy implementation or major technological shocks, are more likely to occur over a longer time span. Consequently, ignoring structural breaks may lead to inconsistent estimation and invalid inference. We propose a general framework that includes heterogeneous panel data models and structural break models as special cases. The least squares method proposed by Bai (1997a, 2010) is applied to estimate the common change points, and the consistency of the estimated change points is established. We find that the CCE estimator have the same asymptotic distribution as if the true change points were known. Additionally, Monte Carlo simulations are used to verify the main results of this paper.

Keywords: Heterogeneous Panels, Cross-sectional Dependence, Structural Breaks, Common Correlated Effects.

JEL Classification: C23, C33

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