

Simple Tests of Non-Random Missing and Misspecification of Unobserved Factors for Unbalanced Panel Data Models (with S Song)

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Abstract:

This paper proposes simple tests of the validity of the assumption on unobserved heterogeneity as well as missing process including missing completely at random (MCAR) and missing at random (MAR) assumptions for unbalanced panel data by extending the Hausman [1978] specification test. The proposed Hausman-Type (HT) tests can be applied flexibly to estimations with complete-case, multiple imputations, sample selection correction, and inverse probability weighted methods. Monte Carlo simulations show substantial power and no size bias in the tests for the size of panel data we typically observe in applications. We illustrate the usefulness of the tests of the assumptions on unobserved heterogeneity and missing/selection process, using a study of the effects of trade liberalization policies on trade flows. The HT test results show that conventional estimators substantially underestimate the effects of these policies on trade flows.