

# Bootstrap inference for misspecified moment condition models

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**Abstract** We study the standard-bootstrap, the centered-bootstrap, and the empirical-likelihood bootstrap tests of hypotheses used in conjunction with generalized method of moments inference in correctly specified and misspecified moment condition models. We show that, under correct specification, the standard-bootstrap estimator of the null distribution of the  $J$ -test converges in distribution to a random distribution, verifying its inconsistency, while the centered and the empirical-likelihood bootstrap estimators are consistent. We provide higher-order expansions of the size distortions of the analytic and the bootstrap tests. We show that the standard-bootstrap parameter-tests are consistent under misspecification, while the centered-bootstrap parameter-tests are inconsistent. We propose a general bootstrap methodology which is highly accurate under correct specification and consistent under misspecification. In a simulation study, we explore the finite sample behavior of the analytic and the bootstrap tests for a panel data model and we apply our methodology on a real-world data set.

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