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BOOTSTRAP MISSPECIFICATION TESTS FOR ARCH BASED ON THE EMPIRICAL PROCESS OF SQUARED RESIDUALS

Lajos HORVATH[1], Piotr KOKOSZKA[2] and Gilles TESSIÈRE[3]

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Abstract

We propose and study by means of simulations and graphical tools a class of goodness-of-fit tests for ARCH models. The tests are based on the empirical distribution function of squared residuals and smooth (parametric) bootstrap. We examine empirical size and power by means of a simulation study. While the tests have overall correct size, their power strongly depends on the type of alternative and is particularly high when the assumption of Gaussian innovations is violated. As an example, the tests are applied to returns on Foreign Exchange rates.

Keywords: ARCH models, empirical process, goodness-of-fit tests, size-power curves, smooth bootstrap, squared residuals.

JEL Classification: C12, C22.

[1]Department of Mathematics, University of Utah, USA. E-mail: horvath@math.utah.edu

[2]Mathematics and Statistics, Utah State University, USA. E-mail: piotr@math.usu.edu

[3]National Bank of Greece (France), GREQAM and CORE, Université catholique de Louvain, Belgium. E-mail: gilles@ehess.cnrs-mrs.fr, gteyssiere@nbg-france.com

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