

**Domínguez, Manuel A.**

**On the power of bootstrapped specification tests.** (English) Zbl 1133.62376  
*Econ. Rev.* 23, No. 3, 215-228 (2004).

Summary: Decisions based on econometric model estimates may not have the expected effect if the model is misspecified. Thus, specification tests should precede any analysis. *H.-J. Bierens'* [J. Econ. 20, 105–134 (1982; [Zbl 0549.62076](#))] specification test is consistent and has optimality properties against some local alternatives. A shortcoming is that the test statistic is not distribution free, even asymptotically. This makes the test unfeasible. There have been many suggestions to circumvent this problem, including the use of upper bounds for the critical values. However, these suggestions lead to tests that lose power and optimality against local alternatives. We show that bootstrap methods allow us to recover power and optimality of Bierens' original test. Bootstrap also provides reliable p-values, which have a central role in Fisher's theory of hypothesis testing. The paper also includes a discussion of the properties of the bootstrap nonlinear least squares estimator under local alternatives.

**MSC:**

[62P20](#) Applications of statistics to economics  
[62F40](#) Bootstrap, jackknife and other resampling methods  
[62H15](#) Hypothesis testing in multivariate analysis

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