

Accepted Manuscript

Nonparametric specification testing via the trinity of tests

Abhimanyu Gupta

PII: S0304-4076(17)30240-3

DOI: <https://doi.org/10.1016/j.jeconom.2017.11.008>

Reference: ECONOM 4455

To appear in: *Journal of Econometrics*

Received date: 25 December 2015

Revised date: 12 July 2017

Accepted date: 13 November 2017



Please cite this article as: Gupta A., Nonparametric specification testing via the trinity of tests. *Journal of Econometrics* (2017), <https://doi.org/10.1016/j.jeconom.2017.11.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Nonparametric specification testing via the trinity of tests

Abhimanyu Gupta*
Department of Economics
University of Essex
Wivenhoe Park
Colchester CO4 3SQ, UK

December 18, 2017

Abstract

Tests are developed for inference on a parameter vector whose dimension grows slowly with sample size. The statistics are based on the Lagrange Multiplier, Wald and (pseudo) Likelihood Ratio principles, admit standard normal asymptotic distributions under the null and are straightforward to compute. They are shown to be consistent and possessing non-trivial power against local alternatives. The settings considered include multiple linear regression, panel data models with fixed effects and spatial autoregressions. When a nonparametric regression function is estimated by series we use our statistics to propose specification tests, and in semiparametric adaptive estimation we provide a test for correct error distribution specification. These tests are nonparametric but handled in practice with parametric techniques. A Monte Carlo study suggests that our tests perform well in finite samples. Two empirical examples use them to test for correct shape of an electricity distribution cost function and linearity and equality of Engel curves.

JEL classifications: C12, C14, C31, C33

Keywords: Increasingly many parameters; central limit theorem; Lagrange Multiplier test; Wald test; Likelihood Ratio test; nonparametric specification testing; series estimation; adaptive estimation; spatial autoregression

**Email:* a.gupta@essex.ac.uk, *Telephone:* +44 - 120 6872 597

Download English Version:

<https://daneshyari.com/en/article/7358102>

Download Persian Version:

<https://daneshyari.com/article/7358102>

[Daneshyari.com](https://daneshyari.com)