

Accepted Manuscript

Sieve inference on possibly misspecified semi-nonparametric time series models

Xiaohong Chen, Zhipeng Liao, Yixiao Sun

PII: S0304-4076(13)00206-6

DOI: <http://dx.doi.org/10.1016/j.jeconom.2013.10.002>

Reference: ECONOM 3835

To appear in: *Journal of Econometrics*

Received date: 29 January 2013

Revised date: 28 June 2013

Accepted date: 2 October 2013



Please cite this article as: Chen, X., Liao, Z., Sun, Y., Sieve inference on possibly misspecified semi-nonparametric time series models. *Journal of Econometrics* (2013), <http://dx.doi.org/10.1016/j.jeconom.2013.10.002>

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.

Sieve Inference on Possibly Misspecified Semi-nonparametric Time Series Models*

Xiaohong Chen[†], Zhipeng Liao[‡] and Yixiao Sun[§]

First Draft: October 2009; Revised June 2013

Abstract

This paper establishes the asymptotic normality of plug-in sieve M estimators of possibly irregular functionals of semi-nonparametric time series models. We show that, even when the sieve score process is not a martingale difference sequence, the asymptotic variance in the case of irregular functionals is the same as those for independent data. Using an orthonormal series long run variance estimator, we construct a “pre-asymptotic” Wald statistic and show that it is asymptotically F distributed. Simulations indicate that our “pre-asymptotic” Wald test with F critical values has more accurate size in finite samples than the conventional Wald test with chi-square critical values.

**This paper is dedicated to the memory of Professor Halbert White. We thank coeditor Peter Robinson for encouragement and helpful suggestions. We acknowledge useful comments from an associate editor, two anonymous referees, T. Christensen, L. Hansen, J. Hidalgo, M. Jansson, D. Kaplan, O. Linton, P. Phillips and other participants at 2011 Econometric Society Australasian Meeting in Adelaide, the Pre-conference Workshop of 2011 Asian Meeting of the Econometric Society in Seoul, April 2012 Penn State Conference in Honor of Herman Bierens, econometrics workshops at Brown, Cemmap/UCL, Duke, Georgetown, Montreal, NUS, NYU, SMU, Stanford, Toulouse, UC Berkeley, UCLA, UCSD, USC, and Yale. Chen and Sun acknowledge financial support from the National Science Foundation under the respective grant numbers: SES-0838161 and SES-0752443. Any errors are the responsibility of the authors.*

[†]Corresponding author. Cowles Foundation for Research in Economics, Yale University, Box 208281, New Haven, CT 06520, USA. Tel: 1 203 432 5852; fax: 1 203 432 6167. Email: xiaohong.chen@yale.edu

[‡]Department of Economics, UC Los Angeles, 8379 Bunche Hall, Mail Stop: 147703, Los Angeles, CA 90095. Email: zhipeng.liao@econ.ucla.edu

[§]Department of Economics, UC San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0508. Email: yisun@ucsd.edu

Download English Version:

<https://daneshyari.com/en/article/5096156>

Download Persian Version:

<https://daneshyari.com/article/5096156>

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