吉首大学学报
JOURNAL OF JISHOU UNIVERSITY
JISHOU DAXUE XUEBAO 自然科学版
NATURAL SCIENCES EDITION

吉首大学学报自然科学版 » 2011, Vol. 32 » Issue (3): 22-25 DOI:

基于Wild Bootstrap 非参数方法的AR模型线性检验

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Wild Bootstrap Nonparametric Kernel Test for Linearity in AR Regression Models

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摘要 介绍了AR模型线性的非参数核检验统计量，并对检验统计量进行了检验水平和检验势的Wild Bootstrap模拟.模拟结果显示，非参数核检验统计量的Wild Bootstrap检验稳健性和可靠性都比渐近检验高，TAR与双线性AR模型比其他3种AR的检验势高.

关键词: Wild Bootstrap AR模型 检验水平 检验势 非线性

Abstract: This article considers Wild Bootstrap nonparametric kernel test for linearity in AR regression models,and examines finite sample performance:test size and test power.Simulation results show that test reliability and robustness of Wild Bootstrap is higher than asymptotic method,and test power of TAR and bilinear models is better than the others AR models.

Key words: Wild Bootstrap AR model test size test power nonlinearity

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引用本文:

王敬勇. 基于Wild Bootstrap 非参数方法的AR模型线性检验[J]. 吉首大学学报自然科学版, 2011, 32(3): 22-25.

WANG Jing-Yong. Wild Bootstrap Nonparametric Kernel Test for Linearity in AR Regression Models[J]. Journal of Jishou University（Natural Sciences Edit, 2011, 32(3): 22-25.

[1] 王少平,彭方平.运用SETAR模型对我国通货膨胀率的拟合与预测 [J].统计与决策,2006,7:84-85.

[2] LI Qi,WANG Suo-jin.A Simple Consistent Bootstrap Test for a Parametric Regression Function [J].Journal of Econometrics,1998,87:145-165.

[3] HJELLVIK V,YAO Qi-wei.TJ STHEIM D.Linearity Testing Using Local Polynomial Approximation [J].Journal of Statistical Planning and Inference,1998,68:295-32.

[4] CAI Zong-wu,FAN Jian-qing,YAO Qi-wei.Functional-Coefficient Regression Models for Nonlinear Time Series [J].Journal of the American Statistical Association,2000,95:941-956.

[5] TAE-HWY LEE.Neural Network Test and Nonparametric Kernel Test for Neglected Nonlinearity in Regression Models [J].Studies in Nonlinear Dynamics and Econometrics,2001,4(4):169-182.

[6] ZACHARIAS PSARADAKIS,NICOLA SPAGNOLO.Power Properties of Nonlinearity Tests for Time Series with Markov Regimes [J].Studies in Nonlinear Dynamics and Econometrics,2002,6(3):1-14.

[7] MELVIN J HINICH,EDUARDO M MENDES.Detecting Nonlinearity in Time Series:Surrogate and Bootstrap Approaches [J].Studies in Nonlinear Dynamics and Econometrics,2005,9(4):1-13.

[8] EFTHYMIOS G PAVLIDIS,IVAN PAYA,DAVID A PEEL.Specifying Smooth Transition Regression Models in the Presence of Conditional

Heteroskedasticity of Unknown Form [J].Studies in Nonlinear Dynamics and Econometrics,2010,14(3):1-38.

[9] GRANGER C W J,TER SVIRTA T.Modelling Nonlinear Economic Relationships [M].New York:Oxford University Press,1993.

[10] TONG HOWELL.Nonlinear Time Series:A Dynamic System Approach [M].Oxford:Clarendon,1990.

[1] 姚庆六. **非线性悬臂梁方程变号解的单调迭代技术**[J]. 吉首大学学报自然科学版, 2011, 32(5): 16-21.

[2] 秦宏立, 付华. **一类4阶非线性自治系统的稳定性**[J]. 吉首大学学报自然科学版, 2011, 32(5): 22-25.

[3] 张一方. **电磁学和光学等中的某些基本问题与超光速**[J]. 吉首大学学报自然科学版, 2011, 32(5): 52-58.

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