COMPARING THE POWER PROPERTIES OF THE PROPOSED TEST AND SOME OTHER NONLINEARITY TESTS FOR MARKOV-SWITCHING TIME SERIES MODELS

JANA LENČUCHOVÁ

ABSTRACT. The comparison of the power properties of some already known nonlinearity tests and a new proposed test is provided. We are testing the validity of Markov assumptions by the proposed test as an alternative to the classical test for linearity against the Markov-switching type of nonlinearity, which is very time-consuming. The RESET-type tests, McLeod-Li test and Tsay test are used to investigate their ability to reveal the Markov-switching type of nonlinearity since they test only some departures from linearity in general without a specific nonlinear parametric alternative.

REFERENCES

[1] Hamilton, J.D.: *Specification testing in Markov-switching time series models.*. Journal of Econometrics vol. 70, (1996) 127–157.
[2] Hamilton, J.D.: *Time series analysis.* Princeton University Press, Princeton, (1994) 799.
[3] Hansen, B.E.: *The likelihood ratio test under nonstandard assumptions: testing the Markov switching model of GNP.* Journal of Applied Econometrics vol. 7, (1992) 61–82.
[4] Newey, W.K.: *Maximum likelihood specification testing and conditional moment tests.* Econometrica vol. 53, (1985) 1047–1070.
[5] Psaradakis, Z., Spagnolo, N.: *Power Properties of Nonlinearity Tests for Time Series with Markov Regimes.* Studies in Nonlinear Dynamics & Econometrics vol. 6, (2002) No. 3, Article 2.
[6] Tauchen, G.: *Diagnostic testing and evaluation of maximum likelihood models.* Journal of Econometrics vol. 30, (1985) 415–443.
[7] White, H.: *Specification testing in dynamic models.* In: T. F. Bewley (Eds.): Advances in econometrics vol.2, Fifth world congress, Cambridge University Press, Cambridge, (1987) 1–58.

DEPARTMENT OF MATHEMATICS, FACULTY OF CIVIL ENGINEERING, SLOVAK UNIVERSITY OF TECHNOLOGY BRATISLAVA, RADLINSKÉHO 11, 813 68 BRATISLAVA, SLOVAKIA
E-mail address: lencuchova@math.sk

Key words and phrases. Markov-switching models, power properties, Tsay test, RESET-type tests, McLeod-Li test, test for validity of Markov assumptions.
The support of the grant APVV No. LPP-0111-09 is kindly appreciated.