

Discussion Paper on the “Procedure for Detecting SETAR-Nonlinearity” by Joselito Magadia

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Summary:

This paper proposes a test detecting nonlinearity of the SETAR (Self-Exciting Threshold Autoregression) Type. The performance of this test is compared to Tsay’s Tar-F and reverse CUSUM test (Petrucci and Davies)

Strengths:

The concepts were discussed, and the problem well-motivated by a sufficient review of related literature. The strengths of SETAR were emphasized so that the problem of detecting this type of non-linear behavior appears (and is) important. The result of a simulation test was interesting to read. Actual data sets, previously studied in time series literature were used and also simulated data sets from a wide range of pre-defined models. It was also interesting to note that in the literature, something that was defined before as linear may not be linear after all, and we are talking about data sets that are well-studied. So it seems to me that there is a lot of ambiguity in detecting SETAR nonlinearity; and its study makes it more relevant.

Issues:

- Can the author please elaborate on the difficulty in detecting SETAR nonlinearity? How does it compare to finding the correct model in Arima models?
- The new model has three windows... does this mean that the new method is a just a variation of existing ones?
- Perhaps an explanation is in order for the third remark in Section V. Why is the procedure unable to detect SETAR-nonlinearity for that specific SETAR model?
- Can the author also provide some details on how computations were implemented? I understand that this was part of the author’s dissertation. I am just curious about these details, were the algorithms created from scratch, and so on....