

Essays on nonstationary nonlinear time series models

Citation for published version (APA):

Lin, Y. (2021). *Essays on nonstationary nonlinear time series models*. Global Academic Press.
<https://doi.org/10.26481/dis.20211006yl>

Document status and date:

Published: 01/01/2021

DOI:

[10.26481/dis.20211006yl](https://doi.org/10.26481/dis.20211006yl)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

PROPOSITIONS (STELLINGEN)

attached to the thesis

ESSAYS ON NONSTATIONARY NONLINEAR TIME SERIES MODELS

YICONG LIN

1. A monotone and continuous cubic polynomial transformation of the trend break estimates can well capture the asymmetry and bimodality of the finite sample distributions. (Chapter 2)
2. When the errors are weakly stationary, the ordinary, quasi-differencing and generalized least squares estimators are asymptotically equivalent in linear trend models with or without breaks. (Chapter 2)
3. Two factors affect the performance of feasible generalized least squares estimators substantially: (a) the estimation of *inverse* covariance matrices, (b) the parameter estimation errors that contaminate errors estimation. (Chapters 2 and 3)
4. Linear hypothesis tests based on fully modified analysis often have severe size distortions in cointegrating polynomial regressions. Simulation-based methods provide a way out. (Chapters 3 and 4)
5. Many procedures, such as the Bonferroni, control the probability of making false discoveries. Yet, out-of-control “false discoveries” are still possible when improperly used. (Chapters 3 and 4)
6. The smooth, slowly increasing/evaporating deterministic trends need not be polynomial with integer powers. A simple extension to noninteger is already valuable in practice. (Chapter 4)
7. The growth trajectories of the Environmental Kuznets Curve (EKC) support a “grow now, clean later” development tactic. Its false discovery may lead to irreversible changes in Earth’s climate system. Therefore, a critical evaluation of the EKC can never be over-emphasized. (Chapter 4 and Impact Paragraph)
8. Econometric analysis should answer questions and question answers.
9. At least for me, three phases are recurrent and periodic during research: “yes, it is”, “no, it is not”, “oh yes, it is”. The same reactions occur when Ph.D. students are informed about their teaching tasks.