The European Journal of Finance ›

Volume 17, 2011 - Issue 7

333 Views | 15 CrossRef citations to date | 0 Altmetric

Original Articles

Threshold non-linear dynamics between Hang Seng stock index and futures returns

Hon-Lun Chung, Wai-Sum Chan & Jonathan A. Batten

Pages 471-486 | Received 10 Mar 2009, Published online: 28 Jun 2010

Cite this article https://doi.org/10.1080/1351847X.2010.481469

Sample our Area Studies Journals

>> Sign in here to start your access to the latest two volumes for 14 days

Abstract

We test the joint dynamics between the Hong Kong Hang Seng Index futures and the underlying cash index using a Bivariate Threshold AutoRegressive model, which is better able to capture the complex return dynamics evident in financial time series. The results are consistent with a three-regime version of the model, where the lead-lag relation between the index and futures returns is a non-linear threshold-type and the regime switching process depends on the state of the threshold variable. This interaction is symmetric rather than unidirectional, with the strength of the interaction dependent on the regime. These three regimes are also characterised by significant variation in volume, which is consistent with liquidity-induced arbitrage trading.

Keywords:

lead-lag relationship | threshold autoregression | non-linearity test | futures markets | Hang Seng index

Acknowledgements

The authors wish to thank the encouragement provided by the editor Chris Adcock and the valuable comments provided by two anonymous referees that have greatly improved the exposition and analysis provided in this study.

Notes

Market capitalisation of the Hong Kong Exchange was US$1238 billion in January 2009, compared with Tokyo (US$2922 billion) and the New York Stock Exchange (US$9363 billion) World Federation of Exchanges (2009).

In fact, the improvement in correlation is consistent with a growth rate model of the form y=ax/(b+x), where a=0.9976818 and b=0.287548. The standard error of this model is 0.0008218 and the correlation is almost 1 (0.999205).

ADF statistics for () are, respectively (−29.76, −31.19, and −13.31, with the 1% critical).

Related research

People also read | Recommended articles | Cited by 15

The lead–lag relationship between the spot and futures markets in China

Donghua Wang et al.
Quantitative Finance
Published online: 1 Feb 2017

Information for

- Authors
- R&D professionals
- Editors
- Librarians
- Societies

Open access

- Overview
- Open journals
- Open Select
- Dove Medical Press
- F1000Research

Opportunities

- Reprints and e-prints
- Advertising solutions
- Accelerated publication
- Corporate access solutions

Help and information

- Help and contact
- Newsroom
- All journals
- Books

Keep up to date

Register to receive personalised research and resources by email

Sign me up

Copyright © 2026 Informa UK Limited Privacy policy

Cookies Terms & conditions Accessibility

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG