



Quantitative Finance >

Volume 7, 2007 - [Issue 1](#)

1,584 Views

332 CrossRef citations to date

0

Altmetric

Original Articles

Multi-scaling in finance

T. Di Matteo

Pages 21-36 | Received 21 Sep 2005, Accepted 21 Aug 2006, Published online: 03 Apr 2007

Cite this article <https://doi.org/10.1080/14697680600969727>

Sample our
Mathematics & Statistics
Journals

>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

Abstract

The most suitable paradigms and tools for investigating the scaling structure of financial time series are reviewed and discussed in the light of some recent empirical results. Different types of scaling are distinguished and several definitions of scaling exponents, scaling and multi-scaling processes are given. Methods to estimate such exponents from empirical financial data are reviewed. A detailed description of the Generalized Hurst exponent approach is presented and substantiated with an empirical analysis across different markets and assets.

Keywords:

Econophysics

Scaling

Multifractal formalisms

Time series analysis

Previous article

[View issue table of contents](#)

Next article

Acknowledgements

I wish to thank T. Aste, M. Dacorogna and E. Scalas for fruitful discussions and advice. I acknowledge partial support from the ARC Discovery Projects: DP03440044 (2003) and DP0558183 (2005), COST P10 “Physics of Risk” project and M.I.U.R.-F.I.S.R. Project “Ultra-high frequency dynamics of financial markets”.

Notes

†In the literature, self-affine processes are also called self-similar.

†We use H without parentheses as the original Hurst exponent, and $H(q)$ as the generalized Hurst exponent.

Related research

People also read

Recommended articles

Cited by
331

[On the statistics of scaling exponents and the multiscaling value at risk](#) >

Giuseppe Brandi et al.
The European Journal of Finance
Published online: 2 Apr 2021



[Empirical properties of asset returns: stylized facts and statistical issues](#) >

R. Cont
Quantitative Finance
Published online: 8 Apr 2010

[On the interplay between multiscaling and stock dependence](#) >

R. J. Buonocore et al.
Quantitative Finance
Published online: 21 Aug 2019

Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

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



Taylor & Francis
by informa