

[Home](#) > [The European Physical Journal B - Condensed Matter and Complex Systems](#) > [Article](#)

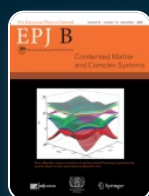
# Hierarchical structure in financial markets

Published: 17 August 2012

Volume 11, pages 193–197 (1999) [Cite this article](#)

[Save article](#)

[View saved research](#) >





## [The European Physical Journal B - Condensed Matter and Complex Systems](#)

[Aims and scope](#) →

[Submit manuscript](#) →

[R. N. Mantegna](#) <sup>1,2</sup>

 7398 Accesses  1839 Citations  13 Altmetric [Explore all metrics](#) →

## Abstract

I find a hierarchical arrangement of stocks traded in a financial market by investigating the daily time series of the logarithm of stock price. The topological space is a subdominant ultrametric space associated with a graph connecting the stocks of the portfolio analyzed. The graph is obtained starting from the matrix of correlation coefficient computed between all pairs of stocks of the portfolio by considering the synchronous time evolution of the difference of the logarithm of daily stock price. The hierarchical tree of the subdominant ultrametric space associated with the graph provides a meaningful economic taxonomy.



This is a preview of subscription content, [log in via an institution](#) to check access.

### Access this article

[Log in via an institution](#) →

### Subscribe and save

✔ Springer+

from €37.37 /Month

- Starting from 10 chapters or articles per month
- Access and download chapters and articles from more than 300k books and 2,500 journals
- Cancel anytime

[View plans](#) →

### Buy Now

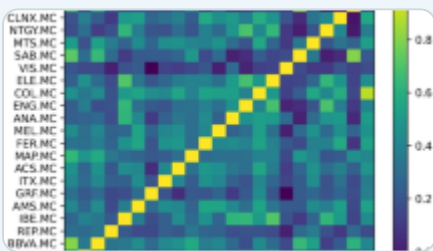
[Buy article PDF 39,95 €](#)

Price includes VAT (Poland)

Instant access to the full article PDF.

[Institutional subscriptions](#) →

### Similar content being viewed by others

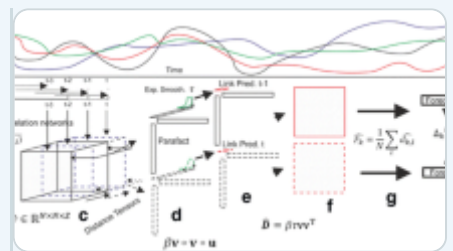


**[An Empirical Evaluation of Distance Metrics in Hierarchical Risk Parity Methods for Asset Allocation](#)**

Article | Open access



**[Analysis of Stock Market Prediction for Future Trends Using Machine Learning](#)**



**[Financial market predictability with tensor decomposition and links forecast](#)**

Article | Open access

## Explore related subjects

Discover the latest articles, books and news in related subjects, suggested using machine learning.

[Capital Markets](#)

[Mathematics in Business, Economics and Finance](#)

[Mathematical Finance](#)

[Quantitative Finance](#)

[Sociology of the Financial Market](#)

[Topology](#)

[Financial Market Dynamics and Investor Behavior](#)

## Author information

### Authors and Affiliations

**Istituto Nazionale per la Fisica della Materia, Unità di Palermo, 90128, Palermo, Italy**

R. N. Mantegna

**Dipartimento di Energetica ed Applicazioni di Fisica, Università di Palermo, Viale delle Scienze, 90128, Palermo, Italy**

R. N. Mantegna

### Corresponding author

Correspondence to [R. N. Mantegna](#).

## Rights and permissions

[Reprints and permissions](#)

## About this article

### Cite this article

Mantegna, R.N. Hierarchical structure in financial markets. *Eur. Phys. J. B* **11**, 193–197 (1999).

<https://doi.org/10.1007/s100510050929>

Received

24 March 1999

Revised

28 June 1999

Published

17 August 2012

Issue date

September 1999

DOI

<https://doi.org/10.1007/s100510050929>

[PACS. 02.50.Sk Multivariate analysis](#)

[89.90.+n Other areas of general interest to physicists](#)

## Search

Search by keyword or author



## Navigation

Find a journal

Publish with us

Track your research