1. Record Nr. UNINA9910450618903321

Autore	Mantegna Rosario N (Rosario Nunzio), <1960->
Titolo	An introduction to econophysics : correlations and complexity in finance / / Rosario N. Mantegna, H. Eugene Stanley [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2000
ISBN	1-107-11464-0 1-280-42934-8 0-511-17568-X 0-511-03994-8 0-511-15618-9 0-511-32911-3 0-511-75576-7 0-511-05026-7
Descrizione fisica	1 online resource (ix, 148 pages) : digital, PDF file(s)
Disciplina	332/.01/5195
Soggetti	Econophysics Finance - Statistical methods Finance - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references (p. 137-144) and index.
Nota di contenuto	Cover; Half-title; Title; Copyright; Contents; Preface; Dedication; 1 Introduction; 2 Efficient market hypothesis; 3 Random walk; 4 Levy stochastic processes and limit theorems; 5 Scales in financial data; 6 Stationarity and time correlation; 7 Time correlation in financial time series; 8 Stochastic models of price dynamics; 9 Scaling and its breakdown; 10 ARCH and GARCH processes; 11 Financial markets and turbulence; 12 Correlation and anticorrelation between stocks; 13 Taxonomy of a stock portfolio; 14 Options in idealized markets; 15 Options in real markets; Appendix A: Notation guide Appendix B: MartingalesReferences; Index
Sommario/riassunto	This book concerns the use of concepts from statistical physics in the description of financial systems. The authors illustrate the scaling

concepts used in probability theory, critical phenomena, and fully developed turbulent fluids. These concepts are then applied to financial time series. The authors also present a stochastic model that displays several of the statistical properties observed in empirical data. Statistical physics concepts such as stochastic dynamics, short- and long-range correlations, self-similarity and scaling permit an understanding of the global behaviour of economic systems without first having to work out a detailed microscopic description of the system. Physicists will find the application of statistical physics concepts to economic systems interesting. Economists and workers in the financial world will find useful the presentation of empirical analysis methods and well-formulated theoretical tools that might help describe systems composed of a huge number of interacting subsystems.