Record Nr. UNINA9910813929303321 Autore Mantegna Rosario N (Rosario Nunzio), <1960-> Titolo An introduction to econophysics: correlations and complexity in finance / / Rosario N. Mantegna, H. Eugene Stanley Cambridge, UK; New York, Cambridge University Press, 2000 Pubbl/distr/stampa **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 Edizione [1st ed.] Descrizione fisica 1 online resource (ix, 148 pages) : digital, PDF file(s) Altri autori (Persone) StanleyH. Eugene <1941-> (Harry Eugene) Disciplina 332/.01/5195 Soggetti Finance - Statistical methods Finance - Mathematical models Statistical physics 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 This book concerns the use of concepts from statistical physics in the Sommario/riassunto 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.