

<<金融市场统计力学>>

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前言

The present third edition of the statistical mechanics of financial markets is published only four years after the first edition. the success of the book highlights the interest in a summary of the broad research activities on the application of statistical physics to financial markets. i am very grateful to readers and reviewers for their positive reception and comments. why then prepare a new edition instead of only reprinting and correcting the second edition?The new edition has been significantly expanded, giving it a more practical twist towards banking. the most important extensions are due to my practical experience as a risk manager in the german savings banks' association (dsgv): two new chapters on risk management and on the closely related topic of economic and regulatory capital for financial institutions, respectively, have been added. the chapter on risk management contains both the basics as well as advanced topics, e.g. coherent risk measures, which have not yet reached the statistical physics community interested in financial markets.

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内容概要

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章节摘录

插图：When attempting to draw parallels between statistical physics and financial markets, an important source of concern is the complexity of human behavior which is at the origin of the individual trades. Notice, however, that nowadays a significant fraction of the trading on many markets is performed by computer programs, and no longer by human operators. Furthermore, if we make abstraction of the trading volume, an operator only has the possibility to buy or to sell, or to stay out of the market. Parallels to the Ising or Potts models of Statistical Physics resurface! More specifically, take the example of Fig. 1.1. If we subtract out long-term trends, we are left essentially with some kind of random walk. In other words, the evolution of the DAX index looks like a random walk to which is superposed a slow drift. This idea is also illustrated in the following story taken from the popular book "A Random Walk down Wall Street" by B. G. Malkiel [3], a professor of economics at Princeton. He asked his students to derive a chart from coin tossing.

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