

1. Record Nr.	UNINA9910437909703321
Autore	Zheng Xiaolian
Titolo	Stock Market Modeling and Forecasting : A System Adaptation Approach // by Xiaolian Zheng, Ben M. Chen
Pubbl/distr/stampa	London : , : Springer London : , : Imprint : Springer, , 2013
ISBN	9781447151555 1447151550
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (XII, 161 p. 92 illus.)
Collana	Lecture Notes in Control and Information Sciences, , 0170-8643 ; ; 442
Disciplina	332.0415
Soggetti	Automatic control Economics, Mathematical Finance System theory Control and Systems Theory Quantitative Finance Finance, general Systems Theory, Control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	A System Adaptation Framework -- Market Input Analysis -- Analysis of Dow Jones Industrial Average -- Selected Asian Markets -- Forecasting of Market Major Turning Periods -- Technical Analysis Toolkit -- Further Research.
Sommario/riassunto	Stock Market Modeling translates experience in system adaptation gained in an engineering context to the modeling of financial markets with a view to improving the capture and understanding of market dynamics. The modeling process is considered as identifying a dynamic system in which a real stock market is treated as an unknown plant and the identification model proposed is tuned by feedback of the matching error. Like a physical system, a stock market exhibits fast and slow dynamics corresponding to internal (such as company value and profitability) and external forces (such as investor sentiment and commodity prices) respectively. The framework presented here,

consisting of an internal model and an adaptive filter, is successful at considering both fast and slow market dynamics. A double selection method is efficacious in identifying input factors influential in market movements, revealing them to be both frequency- and market-dependent. The authors present work on both developed and developing markets in the shape of the US, Hong Kong, Chinese and Singaporean stock markets. Results from all these sources demonstrate the efficiency of the model framework in identifying significant influences and the quality of its predictive ability; promising results are also obtained by applying the model framework to the forecasting of major market-turning periods. Having shown that system-theoretic ideas can form the core of a novel and effective basis for stock market analysis, the book is completed by an indication of possible and likely future expansions of the research in this area.
