STABLE EFFECTS IN CHINESE STOCK MARKETS

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Stock markets have various levels of traders that can be described according to the amount of capitals to employ in investment. The market strategies can be changed over time, and the stocks consisting of a market can be partitioned into several business groups. Business sectors are represented by eigenvectors with larger eigenvalues deviating from predictions of the random matrix theory. In this work, we examine the evolution of the correlation-based clusters of stocks, which usually accord with business groups. By segmenting the whole time series into several overlapping segments, we trace the dynamical evolution of each business sectors in terms of the multi-factor model and especially treat the stock prices of Shanghai composites that are not incorporated into developed markets of the financial time stock exchange index.

Keywords

random matrix theory, correlation matrix, multi-factor model

References

[1] V. Plerou, P. Gopikrishnan, H. Rosenow, L.A.N. Amaral, T. Guhr, and H.E. Stanley, Phys. Rev. E 65 (2002) 066126.

[2] D.H. Kim and H. eong, Phys. Rev. E 72 (2005) 046133.

[3] P. Wilmott, *Paul Wilmott on Quantitative Finance* (John Wiley and Sons, New York, 2006).