A Comprehensive Segmentation Analysis of Japanese Stock Prices

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Abstract

This study comprises a comprehensive analysis of time series segmentation on the Japanese stock prices listed on the first section of the Tokyo Stock Exchange. A recursive segmentation procedure is used under the assumption of a Gaussian mixture. The number of each quintile of variance for all the segments is used as an indicator of macroeconomic situations and is investigated empirically. The results show that a large majority of stocks were stable when an economic condition was in growth ant that a large majority of stocks were unstable when an economic condition was bad or badly influential events happened. It is concluded that the number of stocks included in each quintile of volatility provides useful information about the Japanese macroeconomic situation.

Keyword: Tokyo Stock Exchange, Shannon entropy, volatility, Levarage effect

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