

Exploring Stock Market Dynamism in Multi-nations with Genetic Algorithm,
Support Vector Regression, and Optimal Technical Analysis

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Abstract

In this research, an approach in combination with support vector regression (SVR), genetic algorithm (GA), and optimal technical analysis is proposed to explore stock dynamism of multi-nations under different economical environments. First, we apply full search algorithm to select the optimal number of trading days used to calculate the technical indicator values. Genetic algorithm is then used to search the best combination of parameters for SVR kernel function and technical indicators used as SVR input variables. Finally, support vector regression is then used to classify stock data based on the characteristics of non-linear classification. Also, we apply sliding windows to training data to build a steady stock exploratory approach.

The data sources are stock data from four countries with different economic development degree. They include United States of America, Singapore, Taiwan, and Indonesia. In empirical results, the input variables of middle-long-term technical indicators can bring stable profits and developed country shows better efficient market.

Keyword : Multi-nation stock dynamism, Genetic algorithm, Support vector regression, Sliding window, Optimal technical analysis