

Abstract

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?Quality Controlled Stock Prediction System in Stock Predictions

This paper is the first attempt to improve the quality of investing in the highly volatile Egyptian Stock Exchange (ESE) by combining the concepts of statistical process control and artificial intelligence. Control charts were used to construct a statistically controlled stock market prediction model to support the decision of stock investors. The suggested model is mainly based on the concepts of Case-based Reasoning (CBR) which is an artificial intelligent methodology that imitates the human problem-solving and reasoning behavior. Hit rate was applied as a performance measure of the quality of prediction for the suggested model. Results of predicting 900 next day stock predictions during January 2012 had a mean absolute prediction error of 2.096 LE and a hit ratio of 67%. After using the quality controlled process, the mean absolute prediction error was reduced to 1.92 L.E. and the hit ratio increased to 72%.