عنوان مقاله:

The artificial neural networks for investigation of correlation between economic variables and stock market indices

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خلاصه مقاله:

In this research, we investigated the interactive effects between the macroeconomic variables of currency, gold, and oil on two indicators of total and equal weighted indices considering the importance of correlation between economic variables and stock market indices. In this regard, the analysis of Pearson correlation and regression coefficients have been used to investigate the existence of an interactive effect among them, and a Multi-Layer Perceptron Neural Network (MLP NN) model has been used to simulate this effect. The models have been fitted as a time series based on the daily data related to the economic variables and the mentioned indicators during march ۲۰۱۶ to that of ۲۰۲۱. Investigating the interactive effects between variables has been done using SPSS statistical software, and Artificial Neural Network (ANN) simulation developed in MATLAB programming environment. The extracted results indicate the existence of an interactive effect among these economic variables. The simulation results show the high ability of ANN in modeling and predicting the total price and equal-weighted indices, and this model has been able to make more accurate predictions by considering these interactive effects as well.

کلمات کلیدی:

Interactive effect, Total index, Equal weighted index, Modeling, Artificial Neural Network