ARAŞTIRMA MAKALESİ   EN

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FORECASTING THE BIST 100 INDEX USING ARTIFICIAL NEURAL NETWORKS WITH CONSIDERATION OF THE ECONOMIC CALENDAR

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Öz

Artificial Neural Networks (ANN) is an analysis method that mimics the operating principle of the human brain. The problem-solving skills and the high rate of success in solving complex problems of ANN, relative to the other traditional methods has made it a preference as well in the fields of finance and economics.

I used Feed-forward back-propagation ANN (BPN-ANN) similar to related studies to forecast the indices, and employed trial-and-error method for the parameters like number of layers and neurons at layers to reach the optimal ANN structure.

Extant literature has used important macroeconomic variables like inflation, interest rates and money supply to shape the future expected value of the dependent variables of the index. This study is followed a new and unique perspective from established literature to make use of the advantages of ANN to forecast on Turkish stock market index. Further, the study used the daily data between 29th July and 15th November of 2015 for BIST 100, including codified economic calendar events and major parities, dollar index and indices as variables. Due to the expected technical superiority of the system as a result of the nature of the variables to be used, a higher forecast performance is expected, even with the occurrence of events outside the scope, like important political developments. The expected results of this study, other than being an immense contribution to literature will be developed into an important tool that can be utilized by investors. Among several models, 18-20-1 structured MLP has best explanatory level with 0.893 R2 and 0.207 MSE values. This was followed the 18-16-1 structured MLP which had the minimum MSE as 0.025 and 0.88 R2. These are models 1 and 2 respectively. It is also observed that ECE (Economic Calendar Events) and 'Other' variables have notable effects that explain on the fluctuation of the index. Similarly, the two variables have shown their significant in other models as well. Prediction of opening is more successful than closing. ECE has greater success forecasting open prices.

Anahtar Kelimeler

Explanations of Economic Data, Economic Calendar, Artificial Neural Networks, Investor Interpretations

Toplam **0** adet kaynakça vardır.

Ayrıntılar

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BİST 100 ENDEKSİNİN YAPAY SİNİR AĞLARI ve ARMA MODELİ İLE TAHMİNİ

Muhasebe ve Finans İncelemeleri Dergisi

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