Study of the Use of Artificial Neural Networks in Islamic Finance

Authors : Kaoutar Abbahaddou, Mohammed Salah Chiadmi

Abstract : The need to find a relevant way to predict the next-day price of a stock index is a real concern for many financial stakeholders and researchers. We have known across years the proliferation of several methods. Nevertheless, among all these methods, the most controversial one is a machine learning algorithm that claims to be reliable, namely neural networks. Thus, the purpose of this article is to study the prediction power of neural networks in the particular case of Islamic finance as it is an under-looked area. In this article, we will first briefly present a review of the literature regarding neural networks and Islamic finance. Next, we present the architecture and principles of artificial neural networks most commonly used in finance. Then, we will show its empirical application on two Islamic stock indexes. The accuracy rate would be used to measure the performance of the algorithm in predicting the right price the next day. As a result, we can conclude that artificial neural networks are a reliable method to predict the next-day price for Islamic indices as it is claimed for conventional ones.

Keywords : Islamic finance, stock price prediction, artificial neural networks, machine learning

Conference Title : ICIF 2022 : International Conference on Islamic Finance

Conference Location : Paris, France

Conference Dates : April 14-15, 2022