Abstract - During the last decades, machine learning constitutes a significant tool in extracting useful knowledge from economic data for assisting decision-making. In this work, we evaluate the performance of weight-constrained recurrent neural networks in forecasting economic classification problems. These networks are efficiently trained with a recently proposed training algorithm, which has two major advantages. Firstly, it exploits the numerical efficiency and very low memory requirements of the limited memory BFGS matrices; Secondly, it utilizes a gradient-projection strategy for handling the bounds on the weights. The reported numerical experiments present the classification accuracy of the proposed model, providing empirical evidence that the application of the bounds on the weights of the recurrent neural network, provides more stable and reliable learning.