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An application of modified ordinary differential equation approach for successful trading on the Bulgarian stock exchange

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ABSTRACT

In this paper, a modified ordinary differential equation approach, developed by the authors, is used to forecast the stocks' prices of four Bulgarian companies. The models for the stocks' prices prediction are built, using the quantitative data on the daily closing share prices for the period 01.06.2020-29.10.2020. The computational tests consist of a range of data fitting models in order to choose the best solution from the set of possible solutions, based on the weighted error on the studied data. Further, the expected rates of return are calculated and the variances of the rates of return are analyzed, based on the best models for each of the observed stocks. An optimal risk portfolio, is composed from the assets of the four companies. A risk aversion analysis is performed, comparing the structures of different complete portfolios, based on the risk aversion coefficient.

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