

The Contribution of Edgeworth, Bootstrap and Monte Carlo Methods in Financial Data

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Abstract : Edgeworth Approximation, Bootstrap, and Monte Carlo Simulations have considerable impacts on achieving certain results related to different problems taken into study. In our paper, we have treated a financial case related to the effect that has the components of a cash-flow of one of the most successful businesses in the world, as the financial activity, operational activity, and investment activity to the cash and cash equivalents at the end of the three-months period. To have a better view of this case, we have created a vector autoregression model, and after that, we have generated the impulse responses in the terms of asymptotic analysis (Edgeworth Approximation), Monte Carlo Simulations, and residual bootstrap based on the standard errors of every series created. The generated results consisted of the common tendencies for the three methods applied that consequently verified the advantage of the three methods in the optimization of the model that contains many variants.

Keywords : autoregression, bootstrap, edgeworth expansion, Monte Carlo method

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