

A Return Direction Forecasting Model Based on Time-varying Probability Density Function

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Abstract

It is of a great interest in literature to forecast the direction of stock returns, which is to some extent predictable. In this paper, we consider a new directional forecasting model which is based on applying and extending the time-varying probability density function theory proposed by Harvey and Oryshchenko (2012). We capitalize on the relationship between the second order upper partial moment and the directional forecasts, and construct an adaptive mechanism to the raw forecast probability of return direction generated from the benchmark model, which is an original work to the best knowledge of the authors. The empirical work in Chinese stock market shows that, both our forecasting benchmark model and the adjusting mechanism have statistically and economically significant out-of-sample prediction ability on directional forecast. Furthermore, the adjusted mechanism shows a great improvement and outperforms the benchmark model in general.