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Distributions of forecasting errors of forecast combinations: implications for inventory management

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Abstract

Inventory control systems rely on accurate and robust forecasts of future demand to support decisions such as setting of safety stocks. Combining forecasts is shown to be effective not only in reducing forecast errors, but also in being less sensitive to limitations of a single model. Research on forecast combination has primarily focused on improving accuracy, largely ignoring the overall shape and distribution of forecast errors. Nonetheless, these are essential for managing the level of aversion to risk and uncertainty for companies. This study examines the forecast error distributions of base and combination forecasts and their implications for inventory performance. It explores whether forecast combinations transform the forecast error distribution towards desired properties for safety stock calculations, typically based on the assumption of normally distributed errors and unbiased fore-

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