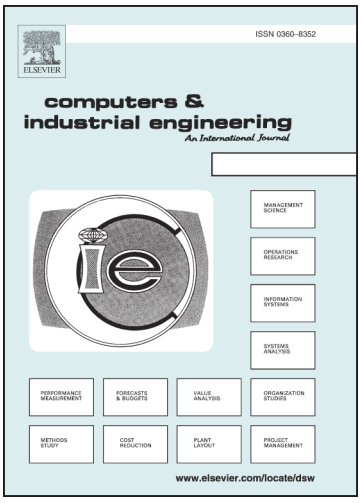
Accepted Manuscript



Evaluation of Forecasting Methods in Aggregate Production Planning: A Cumulative Absolute Forecast Error (CAFE)

Chunghun Ha, Hyesung Seok, Changsoo Ok

PII: S0360-8352(18)30088-3
DOI: https://doi.org/10.1016/j.cie.2018.03.003
Reference: CAIE 5107

To appear in: *Computers & Industrial Engineering*

Received Date: 7 August 2017
Revised Date: 2 February 2018
Accepted Date: 2 March 2018

Please cite this article as: Ha, C., Seok, H., Ok, C., Evaluation of Forecasting Methods in Aggregate Production Planning: A Cumulative Absolute Forecast Error (CAFE), *Computers & Industrial Engineering* (2018), doi: https://doi.org/10.1016/j.cie.2018.03.003

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Evaluation of Forecasting Methods in Aggregate Production Planning: A Cumulative Absolute Forecast Error (CAFE)

Chunghun Ha, Hyesung Seok, and Changsoo Ok*

Dept. of Industrial Engineering, Hongik University,94 Wausan-ro, Mapo-gu, Seoul, 121-791, Korea

Abstract

The purpose of forecasting error measures is to estimate forecasting methods and choose the best one. Most typical forecasting error measures are designed based on the gap between forecasts and actual demands and a forecasting method yielding forecasts in accordance with real demands is considered as good. However, in some applications such as aggregate production planning, these measures are not suitable because they are not capable for considering any results such as increasing cost or decreasing profit caused by forecasting error. To tackle this issue, we propose a new measure, CAFE (Cumulative Absolute Forecast Error), to evaluate forecasting methods in terms of total cost. Basically, the CAFE is designed to consider not only forecasting errors but also costs which the errors might cause in aggregate production planning which is set up based on forecasts. The CAFE is a product sum of cumulative forecasting error and weight factors for backorder and inventory costs. We have demonstrated the effectiveness of the proposed measure by conducting intensive experiments with demand data sets from M3-competition.

Keywords: A Cumulative Absolute Forecasting Error; Forecasting Error; Forecasting Method, Aggregate Production Planning

* Corresponding author.
E-mail address : okcs@hongik.ac.kr(Changsoo Ok)

Download English Version:

https://daneshyari.com/en/article/7541384

Download Persian Version:

https://daneshyari.com/article/7541384

Daneshyari.com