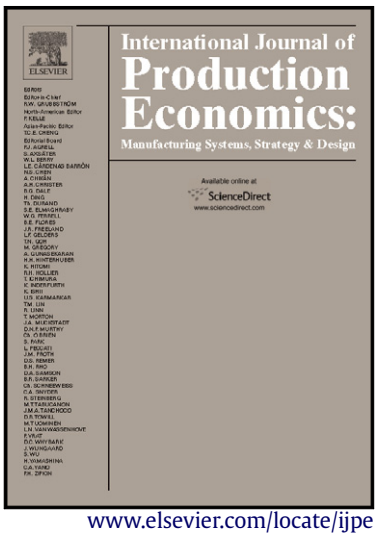

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SETTING SAFETY STOCK BASED ON IMPRECISE RECORDS

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Setting Safety Stock Based on Imprecise Records

Abstract

Setting safety stocks traditionally relies upon the *random sums* approach. The data requirements for successful application of this approach, however, can be difficult to fulfill in certain settings and necessitate that accurate records be kept for determining the input parameters. Furthermore, the *random sums* approach assumes independence between demand and lead time, a condition that could be violated during demand spikes. This paper examines the impact on safety stocks when record keeping is compromised. An alternative formulation for setting safety stocks is proposed using a *multiplication* approach for estimating the variance that eliminates the need for pre-specified relationships and accounts for: 1) data quality issues; 2) demand and lead time correlation; and 3) computational simplicity. Using simulation, general applicability of the *multiplication* method is examined and the performance of alternative formulations is assessed. The *multiplication* approach, with its ease of application, is found to provide comparable results.