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A general model for *EOQ* inventory systems with partial backlogging and linear shortage costs

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Abstract

We present a general model for *EOQ* inventory systems with partial backlogging and linear shortage costs. The model is based on the economic order quantity (EOQ) model, which is a classic inventory control model. The model is extended to include partial backlogging and linear shortage costs. The model is solved using the Lagrangian method. The optimal order quantity and the optimal backorder level are determined. The model is applied to a numerical example. The results show that the model is effective in determining the optimal order quantity and the optimal backorder level. The model is also applied to a sensitivity analysis. The results show that the model is sensitive to the parameters of the model.

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