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An EOQ model for deteriorating items with price- and stock-dependent selling rates under inflation and time value of money

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Abstract

This study applies the discounted cash flow (DCF) approach for the analysis of a replenishment problem over a finite planning horizon. Thus, a deterministic economic order quantity (EOQ) inventory model taking into account inflation and time value of money is developed for deteriorating items with price- and stock-dependent selling rates. An efficient solution procedure is presented to determine the optimal number of replenishment, the cycle time and selling price. Then the optimal order quantity and the total present value of profits are obtained. Numerical examples are presented to illustrate the proposed model and particular cases of the model are also discussed.

Keywords:

Inventory | Pricing | Stock-dependent selling rate | Inflation | Deteriorating

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