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Integrated Pricing and Inventory Control for Perishable Products, Taking into Account the Lack of Backlog and Inventory Management Policy by the Seller

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Recently, utilizing appropriate inventory control policy and determining the optimal selling price for various goods has been the main topic of scientific and industrial research. Inventory management policy 1 by the seller is one solution that improves the chain's performance by creating coordination between members of the supply chain. The current study attempts to devise an integrated model of inventory pricing and control under the inventory management policy by the seller for perishable goods with shortages is considered. The purpose of presenting the model is to determine the optimal price, the optimal repayment time, and the order size, in order to maximize the profit. To acquire those optimal values, the profit functions of the buyer and the seller are taken into account. Given the results acquired, it is demonstrated that at any cost, the repayment time is unique and optimal. It is concluded that with the optimal recovery time available, the objective function is a concave function of price, and its optimal value is available. Furthermore, utilizing the inventory management policy by the seller could be a proper means to reducing retailer costs while raising their profit.

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