

## **Advance Sales System with Price-Dependent Demand and an Appreciation Period Under Trade Credit**

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### **Abstract**

With globalization, companies are facing fierce competition. Offering an appreciation period has become a commonly adopted method by retailers to sustain competitive advantage. During the appreciation period, customers can request to return products for any reason. In addition, retailers provide advance sales to attract additional customers. The supplier usually provides the retailer with a trade credit, which they can use as a type of price reduction to attract additional customers. Price is viewed as an important vehicle to sell products and enhance revenues. Therefore, in this article, we establish an inventory model with price-dependent demand for a retailer who simultaneously receives trade credit from its supplier, and offers advance sales and an appreciation period to its customers. We first establish a proper model and then provide an easy-to-use method to obtain an ordering policy for the retailer to achieve its maximum total profit. Finally, numerical examples are given to illustrate the solution procedure.

*Keywords:* Inventory; trade credit; advance sales; return products; finance