

Optimal order policy for single period products under payment delay with ramp type demand rate

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Abstract

This paper extends the problem in Ouyang, Chen and Chuang [13] and Huang and Goyal [10] to new product introduction, under which demand is assumed to be the ramp type function of time, and supplier offers retailer a full and partial deferral of payment to choose from. Ultimately, the determination of optimal order quantity and optimal payment policy minimizing total cost per unit time is explored. Six possible cases occur here, among which one of the most commonly seen will be mathematically analyzed, while the others are presented by numerical examples.

Keywords: Inventory; Economic Order Quantity (EOQ); Ramp Type Demand

1. Introduction

In the traditional EOQ model, retailers must pay the supplier immediately after receiving the items. However, in the real world, suppliers usually offer a grace period, or permissible delay in payment not to entice

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