Abstract

In the present study, an inventory model is developed especially for a manufacturer where manufactured product not only deteriorates continuous but also has a maximum lifetime. It is assumed that supplier offers full trade credit period of M to the manufacturer while due to the strong position in the market, manufacturer provides partial trade credit period of N to his/her wholesaler. The objective of the problem is to minimize the total inventory cost. By applying convex fractional programming results, necessary and sufficient conditions are obtained to obtain an optimal solution. Few theorems have been developed to determine manufacturer’s optimal policies. Teng (1985), Teng (2002), Huang (2003), Teng and Goyal (2007), Chen and Teng (2014), and Wu and Chan (2014) are special case of our proposed model. Theorems are illustrated with the help of numerical examples. In addition,
some managerial insights on the basis the numerical examples are also concluded.

References


**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

Manufacturer  
Two-level supply chain  
deterioration  
lifetime