



# Optimal economic order quantity model involving price discount

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## Abstract

The best ordering strategies for a buyer when a supplier gives a price discount and specifies a minimum number of additional units to buy are developed in this study using an inventory model. The goal of this study is to create a decision-making process that will help buyers choose between a regular order policy and a special order policy. The managerial lessons of the models were demonstrated with a numerical illustration.

**Keywords:** Inventory, Order quantity discount, Special order quantity, Price discount

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## 1. INTRODUCTION

The most frequent and practical way for a supplier to boost demand, grow market share and decrease inventory of particular commodities is to give buyer a price discount. It is crucial for the buyer to decide whether or not it is advantageous to make a special ahead buying order when the supplier gives a price decrease for any of the aforementioned factors. To learn more about the connection between price discounts and order policy, several academics have investigated price discounts and put forth alternative inventory models.

Inventory, discounts, and the time effect were created by Ahn, Hyun-Soo et al. (2009). Using online payments and preorder discounts, Hasan et al. (2020) examined inventory management. Hou (2006) examined a time-discounting and inflation-adjusted inventory model for degrading goods with stock-dependent consumption rates and shortages. In their 2006 study, Li and Liu focused on the coordination of the supply chain with the quantity discount policy. Chen and Robinson (2012) created the best multiple-breakpoint quantity discount schedules for clients with diverse expectations. An inventory model with

