

Optimal Buyer-Seller Inventory Models in Supply Chain

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Abstract—In many recent works, several authors presented the usefulness of inventory models on two member's simple buyer-seller in supply chain. The main object of the present paper is to investigate the optimal order interval and discount price such that the joint total cost is minimized during a finite planning horizon. The methodology presented here is based upon a simple algorithm and analysis on calculus. Our analysis consider negotiation factor between the buyer and the seller simultaneously utilize a joint saving-sharing scheme developed by Chakravarty and Martin (1988) to derive both the optimal discount price and the optimal order interval such that minimize the joint total cost of the buyer and the seller. The models are illustrated with a numerical example and compared the influence of different sharing values on related cost of buyer-seller system.

Keywords—Inventory, deterioration commodity, joint cost, quantity discount, time-varying demand.

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