

A vendor buyer distribution channel with coordination mechanisms under inventory dependent demand

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Abstrak

ABSTRACT

As confirmed by marketing studies, customer demand sometimes increases with the amount of inventory available, depending on the nature of goods. This paper analyzes a two tier supply chain under such inventory dependent demand (IDD). The analysis of the paper for the supply chain is in two modes, as a vendor leading Stackelberg game and as its integrated counterpart, followed by the profit sharing or the holding cost sharing mechanism to further improve the vendors profit from the vendor leading mode. The analysis procedure is complicated by non zero fixed costs in the system such that the profit functions are non concave. The analysis is complete such that the optimal quantities and their sensitivities, the optimal ordering quantities, the optimal wholesale prices, etc., are given under IDD. The tradeoff between the profit sharing and the holding cost sharing mechanisms are given under the influence of the zero and non zero fixed costs in the system.