

Markov Renewal Process of a Two Commodity Inventory Model

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Abstract

A two commodity inventory model with zero lead time and without shortages, which operates under (s, S) policies, is investigated. Formulating its inventory level process as a Markov renewal process (MRP) and applying the filtering procedure due to Cinlar (1969), the present analysis is discussed. Explicit expressions are obtained for stationary probabilities of all possible embedded inventory processes and objective cost function. Lastly optimization problems are illustrated by a graph.

Keywords: Markov Renewal Process, Embedded Process, Stationary Fuzzy Ra Probabilities and Expected Total Cost.