A Two Commodity Inventory Problem

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Abstract

A two commodity inventory problem, with Markov shift in demand for the type of commodity, is considered. Each arrival demands either one unit of commodity 1 or one unit of commodity two or one unit each of commodity 1 and 2. Time dependent and steady state system state probabilities are computed. An optimization problem is examined and numerical results provided.

Keywords: Markov Renewal Process, Two-commodity Inventory, Markov Shift, Optimization.