

# **Performance of class aggregation in a multiple class inventory rationing problem**

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## **Abstract**

Researchers have shown that inventory rationing is possibly the best technique to deal with inventory systems with multiple demand classes, ordering the same product. The classes are prioritized based on the penalty cost of not fulfilling a demand immediately upon arrival. In order to fulfil the demand from different classes, the system rations inventory using a critical level policy in which each class has a critical inventory level associated with it. Under this policy, when the inventory is below the critical level for that class, the demand for this class and all the lower classes is backordered. Deshpande et al. (2003) showed that inventory rationing performs better than other policies for 2 demand classes. What happens when there is more than 2 classes? Do we really need to consider multiple classes? In this presentation, we, numerically, investigate the impact of collapsing a 5-demand class system into a 2-class system by aggregating several demand classes together and present our findings.