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Managing capacity and inventory jointly in manufacturing systems. (English) Zbl 1232.90026
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Summary: We develop approximations that yield insight into the joint optimization of capacity and inventory, and how the optimal inventory policy varies with capacity investment in a single-product, single-station, make-to-stock manufacturing system in which inventory is managed through a base-stock policy. We allow for a correlated demand stream as we analyze our models in an asymptotic regime, in which the penalty and holding costs are small relative to the cost of capacity. Although our approximations are asymptotically correct, our Brownian approximation is accurate even under moderate traffic intensity.

MSC:

90B05 Inventory, storage, reservoirs
90B30 Production models

Cited in **12** Documents

Keywords:

capacity decisions; inventory management

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