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Integration of inventory and pricing decisions with costly price adjustments. (English)

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Summary: Motivated by the widespread adoption of dynamic pricing in industry and the empirical evidence of costly price adjustments, in this paper we consider a periodic-review inventory model with price adjustment costs that consist of both fixed and variable components. In each period, demand is stochastic and price-dependent. The firm needs to coordinate the pricing and inventory replenishment decisions in each period to maximize its total discounted profit over a finite planning horizon. We develop the general model and characterize the optimal policies for two special scenarios, namely, a model with inventory carryover and no fixed price-change costs and a model with fixed price-change costs and no inventory carryover. Finally, we propose an intuitive heuristic policy to tackle the general system whose optimal policy is expected to be very complicated. Our numerical studies show that this heuristic policy performs well.

MSC:

[90B05](#) Inventory, storage, reservoirs

[91B24](#) Microeconomic theory (price theory and economic markets)

Cited in **12** Documents

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[inventory system](#); [pricing](#); [price adjustment costs](#); [fixed costs](#); [base-stock](#)

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