

# **Optimal firm growth under the threat of entry**

**Stefan Wrzaczek, Peter M. Kort**

Firm 1 operates under threat of entry. The question is whether entry threat stimulates firm growth. We analyze the problem in a two-stage framework. In Stage 1 only Firm 1 is active so that we have an optimal control model. Stage 2 begins at the moment that Firm 2 enters. Then a differential game results. Open-loop and feedback information frameworks are analyzed.

# **Inventory model with pricing and inventory-dependent demand**

**Richard F. Hartl, Peter M. Kort, Andreas Novak**

We consider a firm facing a demand function where demand positively depends on inventory. Production takes place in lots, where setup costs have to be incurred. The profit-maximizing firm has to determine product price, the time in between moments of production, and the corresponding production amount. A trade off is faced in the sense that a large inventory gives huge inventory costs, while at the same time it stimulates demand.