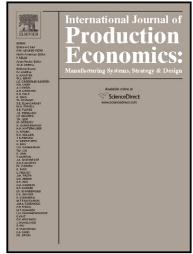
Author's Accepted Manuscript

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Nils Lohndorf, Manuel Riel, Stefan Minner



www.elsevier.com/locate/ijpe

PII: S0925-5273(14)00162-5

DOI: http://dx.doi.org/10.1016/j.ijpe.2014.05.006

Reference: PROECO5771

To appear in: Int. J. Production Economics

Received date: 29 September 2012

Accepted date: 8 May 2014

Cite this article as: Nils Lohndorf, Manuel Riel, Stefan Minner, Simulation Optimization for the Stochastic Economic Lot Scheduling Problem with Sequence-Dependent Setup Times, *Int. J. Production Economics*, http://dx.doi.org/10.1016/j.ijpe.2014.05.006

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ACCEPTED MANUSCRIPT

Simulation Optimization for the Stochastic Economic Lot Scheduling Problem with Sequence-Dependent Setup Times

Nils Löhndorf¹, Manuel Riel, Stefan Minner²

¹Vienna University of Economics and Business, Vienna, Austria

²Technische Universität München, Munich, Germany
{nils.loehndorf@wu.ac.at, m@nuelriel.com, stefan.minner@tum.de}

We consider the stochastic economic lot scheduling problem (SELSP) with lost sales and random demand, where switching between products is subject to sequence-dependent setup times. We propose a solution based on simulation optimization using an iterative two-step procedure which combines global policy search with local search heuristics for the traveling salesman sequencing subproblem. To optimize the production cycle, we compare two criteria: minimizing total setup times and evenly distributing setups to obtain a more regular production cycle. Based on a numerical study, we find that a policy with a balanced production cycleleads to lower cost than other policies with unbalanced cycles.

Keywords: Inventory, Multi-Product, Lot-Sizing and Scheduling, Stochastic Demand, Sequence-Dependent Setups, Simulation Optimization

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