

Author's Accepted Manuscript

Product and Sales Contract Design in Remanufacturing

Baris Yalabik, Dilip Chhajed, Nicholas C. Petruzzi



www.elsevier.com/locate/ijpe

PII: S0925-5273(13)00412-X
DOI: <http://dx.doi.org/10.1016/j.ijpe.2013.09.008>
Reference: PROECO5573

To appear in: *Int. J. Production Economics*

Received date: 29 June 2012
Accepted date: 16 September 2013

Cite this article as: Baris Yalabik, Dilip Chhajed, Nicholas C. Petruzzi, Product and Sales Contract Design in Remanufacturing, *Int. J. Production Economics*, <http://dx.doi.org/10.1016/j.ijpe.2013.09.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

PRODUCT AND SALES CONTRACT DESIGN IN REMANUFACTURING

Baris Yalabik^{1,*} · Dilip Chhajed² · Nicholas C. Petruzzi²

¹School of Management, University of Bath, Bath, BA2 7AY, United Kingdom

²College of Business, University of Illinois at Urbana-Champaign, Champaign, IL, 61820, USA

ABSTRACT

We develop and analyze an economic model of remanufacturing to address two main research questions. First, we explore which market, cost, and product type conditions induce a profit-maximizing firm to be a remanufacturer, given a separate (secondary) remanufactured goods market. Such markets exist for consumer goods, where “newness” is a differentiating factor. Second, we describe what effect profitable remanufacturing has on the environment. Our stylized modeling framework for analyzing these issues incorporates three components: lease contracting, product design, and remanufacturing volume. To operationalize this framework, we model and solve for the optimal decisions of two firm types: a non-remanufacturer, which we call a traditional firm, and a remanufacturer, which we call a green firm. We describe conditions under which remanufacturing is (and is not) profitable, and demonstrate that under certain cost and market conditions remanufacturing has negative consequences for the environment. Our results have implications for firms and policy makers who would like to choose remanufacturing as a strategy to improve profitability and environmental performance, given the existence of conditions under which neither might occur.

Keywords: product design; remanufacturing; green consumerism; durable goods; economic modeling

* Corresponding author. Tel: +44 1225 383130

Email addresses: B.Yalabik@bath.ac.uk; chhajed@illinois.edu; petruzzi@illinois.edu

Download English Version:

<https://daneshyari.com/en/article/5079994>

Download Persian Version:

<https://daneshyari.com/article/5079994>

[Daneshyari.com](https://daneshyari.com)