

## Accepted Manuscript

Probabilistic assignment problem with multi-unit demands: A generalization of the serial rule and its characterization

Eun Jeong Heo

PII: S0304-4068(14)00105-0

DOI: <http://dx.doi.org/10.1016/j.jmateco.2014.08.003>

Reference: MATECO 1913

To appear in: *Journal of Mathematical Economics*

Received date: 17 April 2013

Revised date: 6 May 2014

Accepted date: 15 August 2014



Please cite this article as: Heo, E.J., Probabilistic assignment problem with multi-unit demands: A generalization of the serial rule and its characterization. *Journal of Mathematical Economics* (2014), <http://dx.doi.org/10.1016/j.jmateco.2014.08.003>

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 proof before it is published in its final 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.

# Probabilistic Assignment Problem with Multi-unit Demands: A Generalization of the Serial Rule and its Characterization

Eun Jeong Heo<sup>\*†</sup>

First draft: November 6, 2009

This version: August 21, 2014

## Abstract

We study a probabilistic assignment problem when agents have multi-unit demands for objects. We first introduce two fairness requirements to accommodate different demands across agents. We show that each of these requirements is incompatible with stochastic dominance efficiency (henceforth, we use the prefix “sd” for stochastic dominance) and weak sd-strategy-proofness, unless all agents have unitary demands. We next introduce a new incentive requirement which we call limited invariance. We explore implications of these requirements in combination of consistency or converse consistency.

Our main result is that the generalized serial rule, which we propose as an adaptation of the serial rule to our setting, is the only rule satisfying sd-efficiency, the sd proportional-division lower-bound, limited invariance, and consistency. Uniqueness persists if we replace the sd proportional-division lower-bound by sd normalized-no-envy, or consistency by converse consistency, or both. The serial rule in Bogomolnaia and Moulin (2001) is characterized as a special case of our generalized serial rule.

*JEL* classification: C70, D61, D63.

Keywords: the generalized serial rule; sd-efficiency; sd proportional-division lower-bound; sd normalized-no-envy; limited invariance; consistency; converse consistency; weak sd-strategy-proofness.

---

<sup>\*</sup>Department of Economics, University of Rochester, Rochester NY 14627, USA and Department of Economics, University of Bonn, Lennéstr. 37, Bonn 53113, Germany, E-mail: heoeunjeong@gmail.com

<sup>†</sup>I am grateful to William Thomson for his support and guidance. I have also benefited from useful comments by Daisuke Hirata, Yoichi Kasajima, Bettina Klaus, Fuhito Kojima, Vikram Manjunath, Benny Moldovanu, John Weymark, and the participants of the WCU/BK Summer Economics Program at Yonsei University in 2009, the participants of the seminar at the University of Rochester in 2010, and the participants of the 10th Meeting of the Society for Social Choice and Welfare in 2010. All errors are my own responsibility.

Download English Version:

<https://daneshyari.com/en/article/966050>

Download Persian Version:

<https://daneshyari.com/article/966050>

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