

# Two-sided Matching with Type-specific Maximal and Minimal Quotas in a Student-Supervisor Assignment\*

Toshiji Kawagoe<sup>†</sup> and Taisuke Matsubae<sup>‡</sup>

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## Abstract

In this paper, two-sided matching problem with type-specific maximal and minimal quotas in a student-supervisor matching is studied. For the matching mechanism between students and supervisors in the university, a mechanism based on the deferred acceptance (DA) is examined in this study. In this mechanism, both students and supervisors are classified as one of the types, depending on their affiliations. Then, supervisors set type-specific maximal and minimal quotas. For fulfilling minimal quotas, maximal quotas are dynamically adjusted. It is proved that the mechanism may not satisfy strategy-proofness, but it eliminates justified envy among the same “type” of students and feasibility is attained with a certain distributional constraint. Moreover, if the sum of ranks of the student and supervisor in the final assignment is viewed as a measure of welfare, there is no domination relationship between this mechanism and the DA mechanism. Finally, a case study of the proposed mechanism in a Japanese university is presented.

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<sup>†</sup> Department of Complex and Intelligent Systems, Future University Hakodate, kawagoe@fun.ac.jp.

<sup>‡</sup> Faculty of Economics, Chuo University, matsubae@tamacc.chuo-u.ac.jp