Dynamic Many-to-One Matching under Constraints*

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January 30, 2025

Abstract: We consider the constrained dynamic many-to-one matching problem for students and colleges, where (i) matching rises over time, (ii) matching is irreversible, (iii) each college faces physical capacity and type-specific quota, (iv) patient students and colleges enter the market over time, and (v) their entry is both exogenous and deterministic. Then, observing that the dynamically stable matching process proposed by recent studies need not exist, we propose a new solution concept: dynamically fair matching process. Based on Kamada and Kojima (2024)'s work, we show that a dynamically fair matching process always exists. Moreover, the result also holds under a general upper-bound proposed by Kamada and Kojima (2024).

Keywords: Dynamic matching, Constraints, Fairness, School choice, Tarski's fixed point theorem.

JEL Classification: C78, D47, D61, D63

*We are grateful to Tadashi Sekiguchi, Tomoya Kazumura, Ryosuke Sakai, Shigeki Isogai, Kenzo Imamura, Chiaki Hara, and Jonathan Newton for their continuing guidance and helpful comments. We also thank participants at Workshop on Microeconomics and Game Theory (Kyoto), and Meiji Economics Workshop (Tokyo) for their helpful comments. Of course, all remaining errors are our own.

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