

# Incentives in Matching Markets: Some Comparative Statics Results

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## Abstract

In order to accommodate the imbalance between the numbers of residents accepted by hospitals across regions, Japanese Residential Matching Program introduced upper bounds over the total numbers of seats offered in major cities like Tokyo, Kyoto, Osaka and others in 2010. As a result, the acceptance rate in rural cities sharply increased but the fulfillment rate of doctors' first best choice decreased. This suggests that the outcome may not be stable. Kamada and Kojima (2015) show by examples that the JRMP outcome may be not only unstable but also suboptimal for all doctors. They propose a weaker notion of stability, which is compatible with exogenously given upper bound and Pareto dominates the current JRMP outcome. However, it is also true that the weak stable matching may not be the first-best optimal for doctors without any restrictions.

In this paper, we restrict our attention to the stable matching and give incentives to doctors to apply to vacant positions of local hospitals by financial aids, scholarship, improvement of job conditions and others. More specifically, we ask the following question: if each doctors' ranking of a hospital whose quota is unfilled is increased or at least unchanged, what happens to the doctors-optimal stable matching? In one-to-one matching markets, a simple comparative statics result is obtained as a consequence of the famous blocking lemma. All doctors are made better off and all hospitals but the vacant one are made worse off. We also prove that it is equivalent to the comparative static result when adding a new hospital which is well-known in the literature.

The result in one-to-one matchings does not simply extend to one-to-many matchings. If the position of a hospital whose quota is partially filled is increased in the rankings of some doctors, there may exist a doctor who is made worse off. We discuss how to generalize our result in this case.