Random Assignment Games

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Abstract

Assignment games model two-sided markets in which indivisible units are traded for money, and such that all participants have exactly one unit demand or supply and (possibly) heterogeneous preferences over the products. Shapley and Shubik (1974) showed via linear programming methods that the core of the game is non-empty, elongated and there are side-optimal core outcomes. We study the probable behavior of assignment games between firms and workers, where each firm-worker productivity is randomly determined. We show that if productivities are i.i.d and have bounded support, then in balanced markets side-optimal stable matchings give almost 100% percent of the surplus to the "proposing" side. In unbalanced markets, however, the short side gets close to 100% of the surplus in all core outcomes. These results are driven by a surprisingly small variation in profits among workers and among firms.