**Title:  Two-Sided Matching, Private Information, and the Impossibility of Ex Post Efficient Trade**

Abstract:
Call buyers and sellers in a two-sided allocation problem complements (C) if their pairwise marginal social products exceeds the sum of the individual social marginal products, and call social surplus pairwise subadditive (PS) if the sum of the pairwise marginal social products exceeds social surplus. Assuming that least efficient types never trade, we show that under conditions C and PS no efficient dominant strategy mechanism that respects agents’ individual rationality constraints can induce efficient trade and generate a budget surplus. If either C or PS holds with strict inequality, every such mechanism incurs a budget deficit. Using a generalization of Shapley (1962), we show that a sufficient condition for these conditions is that the problem is decomposable into a one-to-one matching problem. We use this result to extend the impossibility theorem of Myerson and Satterthwaite (1983a) to (i) all one-to-one assignment problems, (ii) many-to-many exchange environments with
homogeneous goods and decreasing marginal valuations, and an additively separable heterogenous commodity model (ASHC) similar to the one developed in Ausubel (2006).