WORKING PAPERS

The Strong Effects of Weak Externalities on School Choice
Eduardo Duque and Juan Pablo Torres-Martínez (2022)

Abstract. In classical school choice contexts there exists a centralized assignment procedure that is stable and strategy-proof: the Gale-Shapley student-optimal stable mechanism. We show that this property is not satisfied when externalities are incorporated into the model, even in scenarios in which students are primarily concerned about their own placement (weak externalities). Indeed, although weak externalities have no effects on stability, there are school choice contexts in which no stable mechanism is strategy-proof. Furthermore, we show that stability and strategy-proofness are compatible if and only if schools' priorities are Ergin-acyclic. This strong effect of weak externalities on incentives is related to the incompatibility between stability, strategy-proofness, and non-bossiness in classical school choice problems.

Incentives in Three-Sided Markets
Jorge Arenas and Juan Pablo Torres-Martínez (2022)

Abstract. In a class of three-sided matching problems in which the core is non-empty, we show that no stable mechanism is strategy-proof for those who internalize the trilateral structure of the market in their preferences. This impossibility is related to the incompatibility between stability, one-sided strategy-proofness, and one-sided non-bossiness in two-sided markets. Furthermore, unlike what happens in marriage markets, strong restrictions on preferences are needed to ensure that stability and one-sided strategy-proofness are compatible for each market side.

Coalitional Stability in Matching Problems with Externalities and Random Preferences
Adriana Piazza and Juan Pablo Torres-Martínez (2021)

Abstract. We study coalitional stability in matching problems with externalities, including marriage markets, roommate problems, and Shapley-Scarf housing markets as particular cases. When preferences are randomly determined, the probability of having a coalitionally stable solution is positively affected by three factors: the prudence of coalitions when evaluating a deviation, the social connectedness of those that can react to it, and the incidence of externalities in preferences. At the same time, this probability is negatively affected by the number of agreements that agents can implement to block a matching. In this context, if agents have a limited capacity to organize themselves into large coalitions, then coalitional stability holds asymptotically even when individuals become less and less prudent as the population grows.