Market Design for Priority-Based Assignment with Distributional Objectives

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Abstract:
Scarce resources are commonly rationed based on priorities. Equity is achieved by imposing distributional constraints. In this paper, we provide an axiomatic approach for meeting distributional objectives and respecting priorities. First, we look at a single school's problem of admitting a subset of applicants. We characterize a general class of choice rules where distributional objectives are met through type-specific reserves and quotas. We show that a particular rule, which we call the regular reserves-and-quotas rule, uniquely minimizes priority violations in this class. Then, we analyze a general setup with multiple schools. We show that when all schools apply the regular reserves-and-quotas rule, the outcome of the Deferred Acceptance mechanism minimizes priority violations in a large class of assignments that satisfy the distributional constraints. We establish that Deferred Acceptance with regular reserves-and-quotas rule is the unique such rule that satisfied strategyproofness and weak Maskin monotonicity.