

“Quantal Response Equilibrium with Symmetry: Theory and Political Economy Applications”

We study an axiomatic variant of quantal response equilibrium (QRE) for normal form games that augments the regularity axioms (Goeree et al., 2005) with various forms of symmetry: player symmetry, translation invariance, and label independence. In terms of flexibility, the model sits between logit and regular QRE. For binary-action games, we provide a representation theorem showing that the model's set-predictions equal the intersection of two sets: (1) the set of regular QRE and (2) the set of action profiles that result in the same rankings of players by “stakes” (absolute expected payoff differences) and “extremeness” (the maximum probability some action is played). We completely characterize the predictions for (almost) all 2×2 games, a corollary of which is to show, in coordination games, which Nash equilibrium is selected by the principal branch of the logit correspondence. As applications, we consider three classic N -player games: a participation game with heterogeneous costs of entry, a jury voting game with unanimity, and a canonical strategic voting game.