Prospect theory Nash bargaining solution and its stochastic stability*

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Abstract We consider stochastic stability analysis with players obeying prospect theory. We extend Young's evolutionary bargaining model to a two-stage Nash demand game where two players simultaneously choose whether to exercise an outside option in the first stage, and they play the Nash demand game in the second stage, which will be reached only if no player exercises their option. In this setting, the value of the option naturally serves as a reference point for the players. We address the dependence of stochastically stable divisions on reference points, and show that those divisions constantly differ from the Nash bargaining solution with expected utility theory. Inspired by this, we propose *prospect theory Nash bargaining solution*, which coincides with the stochastically stable division.

Keywords: Stochastic stability; Prospect theory; Nash demand game; Loss aversion.

JEL Classification Numbers: C72, C73, C78.

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