

Reviewer #1: Review of MS 23-01112

Summary: The authors propose a model of investment under uncertainty that leads to bang-bang solutions in the case of a binomial stochastic process: if investment affects the probability of success that solutions might not be interior, while they are when investment affects the amount of the reward in case of success. They then devise an experimental game that has players decide on investments towards changing the probability vs the reward and find results consistent with the theory.

Comments: My main comment has to do with the theory and what a different utility function implies when it comes to the interpretation of the experimental results.

1. I found the theoretical part very intriguing at first, although, after careful consideration, I wonder the extent to which the results are driven by the functional form for the cost function that is linear in the probability of success. Furthermore, as the authors suggested, the result in Proposition 1 is not generic, which becomes an issue when one wants to take theoretical predictions to the data.

In light of this observation, I strongly urge the authors to tone down the theoretical contribution they are making to the theory of poverty traps.

2. The experiment, as I understand it, does not really correspond to the model. There is no cost function  $c(p)$  in the experiment but rather an allocation problem. It is thus unclear whether the cost function is intrinsic to individuals, or it is related to a technology that increases  $p$ .

3. I am also not sure what to make of the experimental results. Unless the authors demonstrate that CARA is a good approximation of individual utility in this setting, why having results consistent with the theory any test? At the least, the authors should do some due diligence and offer various classes of models that would deliver similar empirical predictions (or, and that would be a theoretical contribution, argue that CARA is the unique class of rational utility functions that deliver the predictions that the authors test).

4. I have also a more fundamental question: is the proposed experiment the best way to get at the model? Why not offering players various bundles that would differ by reward or probability and determine the indifference curve? Wouldn't that be a better way to document the non-monotonic probability/reward tradeoff?