

## The Value of a Reputation under Imperfect Monitoring

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**Extended abstract:** We study commitment and reputation (in the sense of Kreps and Wilson (1982), Milgrom and Roberts (1982) and Fudenberg and Levine (1989,1992)) in two-player repeated games with *equally patient players* and *imperfect public monitoring*. Previous research has shown that, unlike the case when the informed player is infinitely more patient than the uninformed player, reputation effects are elusive when the players discount the future at comparable rates. Indeed, Cripps and Thomas (1997, 2003) have shown that in a wide range of repeated games with *perfect monitoring* reputation effects have no power whatsoever: if the prior probability on the commitment type is sufficiently small and the players are sufficiently patient, then there are sequential equilibria that yield the (normal type of the) informed player a payoff arbitrarily close to his minmax payoff.

We show that such negative reputation results hinge on the knife-edge of perfect monitoring, so that even small amounts of noise in the observation of the informed player's actions can lead to powerful reputation effects: If the (public) signals of the informed player's actions have full support and the repeated game is perturbed by a positive probability that player 1 may be a type committed to playing the Stackelberg action in every period, then there is a lower bound on the set of sequential equilibrium payoffs of the normal type of player 1 that converges, as the discount factor tends to 1, to the Stackelberg payoff.

Reputation effects under equal discounting and imperfect monitoring have also been examined by Atakan and Ekmekci (2012), who have shown that if the uninformed player is imperfectly monitored while the informed player is perfectly monitored then reputation effects emerge in a wide class of repeated games. By

contrast, we assume that the informed player is imperfectly monitored, while the uninformed player can be perfectly or imperfectly monitored. (We only assume that the public signals have a product structure and that the signals of the informed player's actions have full support and identify the Stackelberg action.)

**Note:** While we do not as yet have a paper to circulate, all the main results are in place and a working paper should be complete in a few months. Please let me know if you would like to be informed when it is available.

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