

# Reference Dependent Mechanism Design

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## **ABSTRACT**

**Abstract:** I study revenue maximizing mechanisms in the presence of agents who are loss averse in the sense of Köszegi and Rabin (2007). Since the reference point is formed endogenously as an equilibrium object, the principal can influence the agents' reference points by announcing a particular mechanism. Two specifications of reference dependence are considered. If the agents narrowly bracket gains and losses in the good and in the money dimension separately, any optimal mechanism is all pay, and an optimal auction is an all pay auction with minimum bid; with wide bracketing of gains and losses over the entire risk neutral pay off, an optimal auction is a first price auction with minimum bid. Compared to the same environment with risk neutral agents, the minimum bid is always weakly higher with narrow bracketing and always weakly lower with wide bracketing of gains and losses. In case loss aversion is very pronounced, differentiability of the value function fails, and no familiar characterization of incentive compatibility involving the envelope theorem is available. The driving force behind these results is that agents with reference dependent preferences as in Köszegi and Rabin (2007) dislike fluctuations in their ex post pay offs. Depending on whether agents bracket gains and losses narrowly or widely, the principal reduces these fluctuations in the ex post pay offs in a different manner and extracts the additional surplus.