Optimal Test Design: Investment Incentives and Discrimination

Victor AUGIAS

Abstract :
We study how to optimally design testing devices taking into account the productive investment incentives they induce. A test is fed by an agent's unidimensional type and produces an informative signal that guides a designer's decision to approve or not the agent. The designer wishes to approve agents with types above a certain threshold. The agents want to be approved and can covertly transform their types at some cost. We show that simple pass-fail tests with an appropriate approval threshold are optimal when the initial distribution of agents' types is decreasing. Our model also sheds light on the issue of discrimination by predictive algorithms, ratings and standardized tests.