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Dynamic Mechanism without Money: the Limited Commitment Case
(with OSub Kwon)

Abstract

We study optimal dynamic mechanism design when transfer is not allowed and the principal cannot commit to future mechanisms. Specially, the principal (she) decides in each period whether to allocate a good to the agent (he), whose value for the good evolves over time according to a two-state Markov chain. The principal bears a cost of allocation that generates the basic conflict of interests: the principal wants to allocate the good only when the agent has a high value, whereas the agent wants the good in both states. The optimal mechanism in the two period model has two main features. First, the principal induces delayed consumption of the low type agent by promising him one unit in the subsequent period. Second, to full this promise in the absence of inter-temporal commitment, the principal strategically garbles without observing the agent's initial report and makes allocation decisions only based on the output message. As the time horizon expands, the efficiency loss from both the noisy communication and the distortion of future allocation is back-loaded and vanishes in the infinite horizon limit.

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