Abstract:
Recent advances in IT and big data enable firms to adopt an increasing variety of monitoring technologies at a reduced and yet significant cost. We examine the effect of such cost and flexibility on employee productivity and the internal organization of firms. In an otherwise standard principal-agent model with moral hazard, we allow the principal to adopt any monitoring technology that constitutes a finite partition of the agent’s performance state space, at a cost that increases as the induced performance measure becomes more fine-grained. In various classical settings, we examine the optimal incentive contract through trade-off between the compensation cost and the monitoring cost, obtaining characterizations, such as information aggregation, strict MLRP, the fine-tuning of monitoring intensity across tasks according to the agent’s tendency to shirk, and the use of group incentive systems among technologically independent agents. We apply these results to human resource management and suggest new explanations for long-lasting puzzles.