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Partial monitoring, adverse selection, and the internal efficiency of the firm

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Abstract

The paper investigates an adverse selection model with monitoring of managerial effort. In contrast to the literature, we assume that the manager can be punished only if his effort is below a certain level that is monitored by the principal. Surprisingly, the optimal labor contract may induce an equilibrium effort which is *lower* than in the standard model without monitoring. This result holds for any discrete distribution of managerial types. In the continuous type case, the optimal contracts for high-quality (low-quality) managers are purely output-dependent (effort-dependent).

JEL classification: H57; L51

Keywords: Monitoring; Productive efficiency; Adverse selection

1. Introduction

The determinants of the internal (or productive) efficiency of the firm rank high on the research agenda of economic theory. Information theoretical approaches have succeeded in opening the black box of production in the neoclassical paradigm. While one branch of the literature has investigated the moral-hazard problem and its consequences for productive efficiency and optimal compensation

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schemes, a different line of research has concentrated on principal–agent models with adverse selection: in these models, the agent knows more about a parameter that is relevant for production (e.g. his intrinsic ability or the firm's production cost) than the principal. As one of the key insights, it was found that informational asymmetries between owner (principal) and manager (agent) diminish the productive efficiency of the firm relative to a first best situation.[1] Moreover, the agent's optimal compensation scheme is an incentive contract which allows the principal to elicit the agent's private information and discriminates among agents of different 'types'.

The present article studies the implications of monitoring in such a situation. We follow Laffont and Tirole (1992, 1993) and Kofman and Lawarrée (1993) who investigate the effect of audits on managerial effort. To this end, we consider an adverse selection model where the agent is privately informed on his ability to perform a particular task. In addition, he can exert an idiosyncratic investment (effort) that improves the productive efficiency of the firm. We introduce a monitoring technology which differs from those considered in the previous literature. Specifically, the principal can punish her agent if his actual effort is smaller than some critical level which is contractible and thus constitutes a lower boundary on the manager's effort. However, the contract cannot directly force the manager to work more, and the principal has to use an output-contingency to implement larger effort levels if desired.

This monitoring technology can be motivated as follows. In many real-life situations, the principal can discover whether an agent's activities are at least as large as some observable and verifiable minimum level or not. For example, a contract between a shopkeeper and a security guard can prescribe the latter's physical presence in the store, which will already deter some shoplifters from stealing. However, the shopkeeper cannot verifiably monitor the agent's engagement to work, i.e. his effort to oversee carefully the behavior of suspicious customers.[2]

In our setting, the principal's monitoring abilities do not depend on the labor contract that is initially signed by both parties. If the agent's effort weakly exceeds the verifiable level and if he also meets the precontracted output goal, he cannot be punished whatever effort his labor contract may implicitly prescribe. In other words, the agent can always shirk in a way that is not detected by the principal. This important feature distinguishes our setting from the monitoring technology

[1] See, e.g., Baron and Myerson (1982) or Laffont and Tirole (1986).

[2] Note also that courts are often reluctant to punish an employee as long as the latter did not fail to provide some contractible effort components, while it can be hard for a principal to prove that some valuable excess effort has not been expended. These problems are exaggerated when the labor contract comprises an output goal as an additional component, and the agent can prove that he met this goal (which is the standard assumption in screening contracts). As the other side of the same coin, the agent may have difficulties in having an effort-contingent contract enforced when the principal claims that his effort falls short of some level above which the agent, e.g., becomes eligible for some bonus payment.