Dynamic Agency and the q Theory of Investment

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Abstract

We introduce dynamic agency into the neoclassical q theory of investment. Costly external financing arises endogenously from dynamic agency, and affects firm value and investment. Agency conflicts drive a history-dependent wedge between average q and marginal q, and make the firm's investment dependent on realized profits. Higher profits lead to higher investment, though there is always underinvestment relative to the first best. Also, optimal investment is decreasing in firm-specific risk and positively serially correlated over time. The agent's optimal compensation is deferred when past profits are low, whereas cash compensation is optimal when past profits are high. Moreover, the higher the firm-specific risk, the more the optimal contract relies on deferred compensation. In deriving the optimal contract, the key state variable is the agent's continuation payoff, which depends (positively) on the firm's profit history. We show how this state variable can be interpreted as a measure of financial slack, allowing us to relate the results to the firm's financial slack. To study the effect of persistent shocks on investment, we extend our model to allow the firm's output price to be stochastic. In contrast to static agency models, the agent's compensation in the optimal dynamic contract depends not only on the firm's past performance, but also on the output price, even though the output price is observable, contractible, and beyond the agent's control. Agent compensation increases (decreases) when the output price increases (decreases). Moreover, the optimal contract may call for the agent to be fired in the event of an output price decrease. In this context of persistent shocks, we also show that holding average q fixed, investment is increasing in financial slack.

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