ECON 4245 Corporate Governance – Fall 2016

Seminar VIII

Problem 1 (Exam spring 2009)

Consider the fixed-investment model with three dates: 0, 1, and 2. An entrepreneur has own assets $A \geq 0$ and an idea requiring an investment $I > A$ at date 0. Success of the project provides a return $R > I$ at date 2, while failure gives zero return. The probability p of success depends on the entrepreneur's effort, with $p = p_H$ if effort is high and $p = p_L$ if it is low, where $0 < p_L < p_H < 1$. Low effort provides the entrepreneur with a benefit $B > 0$. Assume that the capital market is competitive, that the entrepreneur is risk neutral, that limited liability prevails, and that efforts are not observable.

Suppose first that, at the intermediate date 1, there is a chance that the entrepreneur has liquidity needs. In particular, suppose that, with probability λ, an opportunity arises at that date for an investment that with certainty turns an investment of x into a return μx, where $0 < \lambda < 1$, and $\mu > 1$.

a) Assume that the liquidity need at date 1 is observable and verifiable. Discuss how the entrepreneur should deal with this potential liquidity need at date 1 in the contracts he signs with investors at date 0.

b) Discuss next the implication of the liquidity need at date 1 being non-observable and non-verifiable.

Suppose next that there is no liquidity need at date 1. Instead, at that date, there is an action that may or may not be undertaken, which would increase the success probability uniformly by τ, to either $p_H + \tau$, if the entrepreneur puts in effort, or $p_L + \tau$, if not, where $0 < \tau < 1 - p_H$, and which would incur a cost $\gamma > \tau R$ on the entrepreneur. This intermediate action cannot be contracted upon at the initial stage. The entrepreneur and the investors may, however, agree on who should have control over whether or not to carry it out.

c) Discuss how the allocation of control rights over the intermediate action may affect the entrepreneur's chances of getting funding.

Suppose now that, instead of a single intermediate action available, there are a large number of possible actions to choose from. The entrepreneur knows which action is relevant and what its characteristics – its parameters $\{\tau, \gamma\}$ – are, while outside investors do not know. [The conditions $\tau > 0$ and $\gamma > \tau R$ imposed above do not necessarily hold here.]

d) Use this setting to discuss the distinction between real and formal control, and to explain why entrepreneurs with more own assets (higher A) tend to have more real control.

Problem 2

Review Problem 7 in Tirole, p. 630.