ECON 4245 Corporate Governance – Fall 2012

Seminar IV

Problem 1.

Exercise 6.1 in Tirole, pp. 273-274.

Problem 2.

This problem is a continuation of Problem 1 in Seminar III.

Paul finds out that the liquidity problem raised by the prospects of a cost over-run could be mitigated if there would be a way to secure short-term returns from the project, which could be used to cover in part the cost over-run. In particular, he could sell part of the property before completion of the project, providing verifiable short-term returns rI, where again I is the initial investment, and the distribution of r is subject to a second moral-hazard problem, in addition to the one affecting the success probability of the completed project: If Paul works hard on getting high short-term returns, he would suffer a loss B_0I and r would be distributed according to the probability distribution $G(r)$, with density $g(r)$. If not, then r is distributed according to the probability distribution $\widetilde{G}(r)$, with density $\widetilde{g}(r)$. Assume that the likelihood ratio, $l(r) = [g(r) - \widetilde{g}(r)]/ g(r)$, is (weakly) increasing in r. Define a contract as a pair of functions $\{\rho^*(r), \Delta(r)\}$, where $\rho^*(r)$ is the cutoff reinvestment need when short-term returns are r, such that the project is abandoned if $\rho > \rho^*(r)$, and $\Delta(r)$ is Paul's per-unit-of-investment extra rent, for each realization of r, over and above what is required by the other moral-hazard problem if the project is completed, and a per-unit-of-investment cash compensation if it is abandoned.

i. Explain the meaning of $l'(r) \geq 0$. Also, explain why we need the restriction $\Delta(r) \geq 0$.

ii. Explain why the equilibrium contract has the property that $\rho^*(r)$ is (weakly) increasing in r, and discuss features of the project that

determine whether the variation in the cutoff ρ^*, as the level of short-term return r varies, is large or small.

iii. In cases where r is low, the cutoff ρ^* may be so low that a credibility problem arises, leading to a scope for renegotiation of the initial contract. This is called the problem of the *soft budget constraint*. Explain the nature of the problem and discuss how the contract needs to be amended in order to cope with this problem.

Problem 3.

Review Problem 9 in Tirole, p. 632.