

Seminar V

*Problem 1* (Postponed exam 2012)

- i) Set up a variable-investment moral-hazard model of an entrepreneur in need of external funding for his project. Show, using this model, that the shadow value of (own) equity is greater than one and decreasing in the extent of the moral-hazard problem.
- ii) Extend the model in (i), if necessary, to discuss whether the entrepreneur's external funding should be debt, equity, or a combination of the two.
- iii) Suppose the entrepreneur may come across an outside investment opportunity after the project has been started up but before it is completed. Again, extend the model in (i), if necessary, to discuss how his contract with external investors can be modified to take account of this potential need of liquidity. In particular, what is the effect of the investment opportunity, if it arises, not being observable and verifiable to the external investors?
- iv) Discuss how the insights from (iii) can be viewed as showing the need to trade off liquidity and accountability.

*Problem 2*

- (i) Exercise 8.1 in Tirole, p. 353.
- (ii) Compare with the analysis in Sec. 8.2.2 in Tirole, pp. 340-341.