**Problem Set for Lecture 4a: Outside Financing Capacity**

**Problem 1:** Assume a project has a probability of success of *pH=0.8* if the borrower behaves and *pL=0* if the borrower misbehaves. The size of the investment is *I = $1,000,000*. If successful, the project earns $1,300,000. Selling off the equipment after it has been purchased would earn the borrower $500,000. The risk-free interest rate is zero.

a) How much income can the borrower maximally pledge?

b) State the zero-profit condition for the lender! How much could the lender maximally finance and still meet the zero profit condition if the borrower provides zero equity?

c) How much of her own wealth does the borrower need to invest?

d) Verify that the borrower actually wants to behave and that the investor fulfils its participation constraint!

e) How small would the scrap value need to be to allow for a contract where no own wealth of the borrower is invested?