

Student Number.....
Student ID.....

EE431 Economics of Financial Markets and Institutions, 1/2015

Problem Sets 8 : Convexity, Excessive Risk and Bank Regulation

Please submit at the BE office, 5th floor department of Economics building.
Deadline of submission : Tuesday 1 December 2015, before 15.00 hrs.
Late submission will not be accepted.

1. Suppose that there are two investment projects, A and B. Each requires initial investment of 1,000.

Project A returns 2,000 with probability 0.5 and 200 with probability 0.5.

Project B returns 1,400 with probability 0.5 and 800 with probability 0.5.

Answer all parts of this question.

- (a) Suppose that the project is financed by 100% equity. If the owner is risk neutral, which project the owner of the project will prefer? Why? Explain.

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- (b) Now suppose that the owner (shareholder) of the investment project does not have any initial capital. Therefore, it has to borrow from a lender (bondholder) and repay 1100. Limited liability is assumed. Suppose that the lenders and the owner are risk-neutral. Which project the owner would prefer? Which project the lender would prefer?

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- (c) Discuss moral hazard and asset substitution problem in the model.

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(d) Suggest one way to design a loan contract that reduces asset substitution problem.

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