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EE431 Economics of Financial Markets and Institutions, 2/2016

Problem Sets 6 : Theory of Financial Intermediation

Please submit at the BE office, 5th floor department of Economics building.

Deadline of submission: May 2, 2016 before 15.00 hrs.

Late submission will not be accepted.

1. Financial Intermediation as Delegated Monitoring in Diamond (1996)

- Consider an economy in which n identical firms seek to finance projects.
- Each entrepreneur owns a firm and each firm requires an investment of $m = 100$ units of capital.
- The returns of each firm are identically independently distributed.
- Each entrepreneur does not have any initial funds. They have to borrow from lenders.
- The total number of lenders is $100n$, each lender owns 1 unit of capital to lend out.
- The project's realized value is a random variable with realization denoted by Y . $Y = 160$ with probability 0.9 and 80 with probability 0.1.
- All entrepreneurs and all lenders know the distribution of Y .
- The entrepreneur observes the realization of actual Y freely.
- The other cannot observe the total output of the project without paying a cost.
- f denotes total loan repayment (principal + interest) promised by each firm for a loan of 100.

- (a) Is an entrepreneur willing to speak the truth about the output of his/her project? Describe the moral hazard problem in this economy.

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- (b) If we impose a punishment system such that the entrepreneur will be forced liquidation if he/she pays lower than a specified amount, f . Assume that liquidating gives no proceeds to the lenders and the entrepreneurs. Calculate the specified amount, which will lead to payments with an expected value of 106 on a loan of 100. Describe how the punishment system in this question helps solving the moral hazard problem.

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