

**Banking and Finance (2688)**  
**Hanken School of Economics, Spring Semester 2014**  
**Rune Stenbacka**

**EXAM 12 March 2014**

Time limitation: 4 h      Help aid: Calculator

Answer the two questions below! Please equip your answer sheets with your name, university and student number!

1.a) Excessive risk-taking on behalf of banks could be seen to have significant external effects on the economy. What are the implications for bank regulation from such an externality perspective? (10 p )

b) Basel III was developed in response to the deficiencies in financial regulation revealed by the recent financial crisis. Which particular features were problematic in the earlier Basel I and Basel II standards? Characterize the main improvements incorporated in Basel III compared with Basel I and Basel II. ( 10 p )

2. A risk-neutral entrepreneur has access to a risky project, which can be implemented in different ways. Assume that the project yields a (gross) return  $\rho$  in case it succeeds, whereas it yields zero in case it fails. Assume that the entrepreneur can invest costly effort in order to increase the success probability of the project. More precisely, assume that the cost of effort to reach a success probability  $p$  is  $C(p) = \frac{1}{2} \kappa p^2$  with the feature that  $\kappa > \rho$ . It is assumed that the entrepreneur's effort is not observable, and that financial contracts cannot be written contingent on effort. Further, assume that the project requires  $\frac{1}{m}$  units of funding, where

$$m > \frac{4\kappa}{\rho}.$$

a) Assume that the entrepreneur finances the investment through a bank loan that specifies the repayment  $R$  in the event of success. Assume further that the entrepreneur has access to no capital and is unable to place any collateral. Characterize analytically the entrepreneur's optimal project choice for a given repayment  $R$  with  $0 < R < \rho$ . What is the effect of an

increase in the repayment ( $R$ ) on the riskiness of the entrepreneur's optimal project selection?  
Present an economic interpretation of your findings. ( 7 p )

b) Characterize analytically the bank's optimal repayment (lending rate). Provide economic interpretations of your calculations. (7 p)

c) Characterize the socially optimal project choice and calculate the agency cost of debt. Provide an economic interpretation of your result. ( 6 p)

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**Tom Berglund**

1. Most investors are risk-averse while business almost always is subject to risk.
  - a) What empirical evidence is there to support the view that investors tend to be risk-averse? (4p)
  - b) How is investor risk-aversion reflected in the cost of capital for risky investment projects (hint: use the capital asset pricing model)? (8p)
  - c) Explain why the risk that should impact the required rate of return in the form of an expected risk premium is so difficult to estimate in practice. (8p)
  
2. Corporate governance is about proper handling of potential conflicts of interest between the owners of the firm (its shareholders) and the top-management, personified by the CEO.
  - a) Explain why the managements' interests for risk-taking by the firm frequently tend to differ from the firm's shareholders' interests for risk taking. (10p)
  - b) What can shareholders do to reduce the potential agency problem that may arise due to this conflict of interest? (10p)