ECON4335 Questions for seminar 3. Week 14

1 Question 1

1. A bank faces a group of potential borrowers. Each of them has an investment project that they want to finance with a loan. The projects cost the same and have the same expected return, but some are more risky than the others. The borrowers have no other bank to go to. The bank is unable to distinguish between borrowers according to the risk they face. Discuss how the interest rate charged by the bank affects which investors that will want to go ahead with the project. Take care to define what you mean by one project being more risky than another.

2. Show with an example that the bank may lose from increasing the interest rate beyond a certain point.

3. Let R be the gross interest on a loan and $E(\rho)$ the expected gross rate of return on the loan when the possibility of default is taken account of. $E(\rho)$ will be a function of R, $E(\rho) = f(R)$. Assume that this function is first increasing, then decreasing with a maximum at R^*. Assume also that the number of investors who will want to go ahead with their projects, L, is a declining function of R, $L = g(R)$. The bank's marginal cost of funds is a constant $\bar{R} < R^*$ (measured as a gross interest rate).

   (a) Write down an expression for the bank's profits.

   (b) What interest rate will the bank choose to charge from the borrowers? How does it relate to $\bar{R}$ and R^*?

   (c) Is credit rationing a possible outcome?

   (d) Discuss the effect of an increase in $\bar{R}$ on R and on the number of loans granted?

4. Suppose now that maximum amount of funds that the bank can acquire for lending is $\bar{L}$, and that the marginal cost of funds $\bar{R}$ only applies for total lending below $\bar{L}$. When and how does the ceiling affect the interest setting and the loan volume?

5. Suppose now there are many competing banks that the borrowers can go to and that all banks can acquire additional funds at the cost $\bar{R}$ in unlimited amounts. What is the equilibrium interest rate in this case, and how does it relate to $\bar{R}$ and R^*? How many loans will be given to the group and how does that relate to the outcome in the monopoly case? Is credit rationing a possibility?

2 Question 2

Many authors claim that the effect of an increase in the central bank's policy interest rate will be enhanced by an increase in the margin that banks add to their lending rates. Discuss the mechanisms that may lead to this. (No formal model expected).