Seminar 4 ECON 4335

Question A

1.
The "charter value" of a bank is the value of the bank´s shareholders future net profits discounted. It is the value the owners are entitled to if the bank is able to continue doing business in the future and represent the banks private cost of failure.

Reduced competition will create charter value by increasing the potential for future profits. Hence, allowing for some market power will increase the charter value by decreasing competition.

Decreasing interest rate on deposits and decreasing capital requirements will increase profits and thus increase the charter value.

Deposit rate regulation will increase the charter value by decreasing the banks incentive to gamble.

2.

Since the expected return of project A is larger than the expected return of project B ($p_A R_A > p_B R_B$), while project B has the highest return given success ($R_B > R_A$).

➔ The success probability of project B is less than the success probability of project A ($p_B < p_A$).

Hence, Project B is the most risky.

3. $L=1$ ➔ $Deposits=1-k$

$\Pi A = p_A R_A - p_A R_D(1-k) - kR_E$
$\Pi B = p_B R_B - p_B R_D(1-k) - kR_E$

Project A will always be profitable if $p_A R_A > R_E > R_D$

$k=1$:

$\Pi A = p_A R_A - 0 - R_E$ ➔ $p_A R_A > R_E$ profitable

$k=0$:

$\Pi A = p_A R_A - p_A R_D - 0$ ➔ $p_A(R_A - R_D) > 0$ ➔ $R_A > R_D$ profitable

4. Project B may be more profitable for the bank because of shareholders limited liability and convex payoff function. The convex payoff gives the bank incentive to invest risky, at least if creditors do not demand compensation for the increased risk.

   The deposit insurance creates incentives for the bank to choose more risky projects. This is because if the project fails, part of the loss will be born by the deposit insurance fund, but in case of success the shareholders gain a lot. The lower equity (k), the more value the bank gets from deposit insurance. A higher RD will also make project B more profitable.

   If k➔0 and RA<Rd<RB, then project B may be profitable even if project A is not.

Question B

Discuss how solvency or liquidity problems in one bank or group of banks can create similar problems for other banks.

Banks have deposits in other banks. These crossholdings of deposits links the banks. If one bank has a liquidity problem, the bank will withdraw its deposits in other banks, which may cause liquidity problems for those banks.

How banks are affected by a liquidity problem in another bank is determined by the structure of the interbank market. Fewer interconnections is likely to cause contagion.

If the interbank network is complete each region is connected to all the others. If one region takes a hit, every region liquidates a small part of their long asset and reduces the threat of a crisis.

If the network is incomplete the banks are not all connected and therefore some banks are not required to liquidate the long assets, which may cause a crises.

Measures the authorities can take to prevent contagion:

- Capital regulation: regulate how much equity a bank must have relative to total liabilities.
- Liquidity requirement: requiring banks to invest more in the liquid asset.