

Written Exam at the Department of Economics summer 2023

**Economics of Banking**  
Ordinary Exam, May 30, 2023  
Outline of solution

1. The textbook background is in Chapters 1, 14 and 15 on liquidity insurance, bank runs and deposit insurance. The problem of unexpected withdrawals of deposits should be placed in the context of liquidity insurance and bank runs, which can be prevented in several ways, most commonly by deposit insurance. In the context of deposit insurance a new problem arises, as the depositors cease to care about the risk profile of the bank, and to prevent this form of moral hazard an upper bound on reimbursement of individual deposits is usually established. In the case considered, the large deposits will be covered only partially by the deposit insurance, so that bank runs may indeed occur. Increasing the coverage will reduce the risk of such runs but on the other hand it may well increase risks through the bank's choices of assets, so the argument cannot be upheld.

If the large deposits are transferred to shadow banking, then deposits take the form of repo trades in securities. Bank runs can occur here as well, meaning that depositors choose not to renew their repo contracts, so that the bank must buy back the securities. The shadow banking may however be in a somewhat better position since if the bank run is initiated by mistrust of the securities underlying the repo trades, since the bank still has the possibility of acquiring new funds from other repo trades.

2. The main theoretical background for this problem is Chapter 11 on competition and risk-taking in the financial sector. The situation is one of oligopoly, where the banks compete for depositors. If banks themselves are deciding upon the risk profile of investments, then more banks will result in higher deposit rates, and banks will compensate by choosing investments with higher outcome and risk. But in the case outlined investment is chosen by entrepreneurs borrowing the funds from the banks, and more banks will reduce the loan rates, so that the effect on risk will be the opposite one.

Increasing the capital ratio means that banks a larger part of loans are funded by the bank itself rather than by depositors or other creditors, and the bank will be more robust against defaults, since its own capital can absorb greater losses. Therefore a higher capital ratio will reduce the risk of bank defaults, but its effects on the overall risks in business are less clearcut. Indeed, as equity is considered as a costly way of funding the bank, then this may in the present case give rise to an increase in loan rates with the consequent effects on risk.

3. The problem deals loan contracts which are treated in Chapter 5 of the textbook. The credits considered as such that the bank has full information about the results of the investment, and in such cases the efficient loan contracts are determined only by the attitudes towards risk of lender and borrower respectively. Since borrowers are known to be risk averse, the contract should be such that the borrower receives a net gain which is almost constant, independent of actual payoff of the securities, and the bank would take on all risk.

When the borrowers manage the security portfolios themselves, the bank cannot control their actual payoffs, and this changes the situation to one of incomplete, and indeed asymmetric, information. The loan contract relevant in this case may depend on the circumstances. Since the loans are still used for investment in portfolios of specific securities, it may well be within the possibilities of the bank to verify their actual payoffs, even if at a cost, and the appropriate contract would be the standard contract. If the abilities and devotion of the borrowers as portfolio managers matter much for the outcome of the investment, then the bank might even contemplate a contract providing incentives for effort, such as the one where the bank gets the full investment payoff if it is below a given (high) threshold and nothing if above.