

Money and Financial Markets

– Exercise Questions –

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1. Explain briefly the asset characteristics: expected return, risk, liquidity.
2. What are the main differences between debt and equity contracts?
3. Explain the inverse relationship between bonds price and bonds interest rate/return.
4. Draw a figure of the bonds market in a (i, B) -diagram. Analyse graphically and verbally the impact of
 - ▶ an increasing bond risk
 - ▶ increasing expected inflation
 - ▶ expansion of economic activity
 - ▶ increasing dividends for stock shareson the equilibrium interest rate.
5. What does “risk premium” mean? Explain the risk structure of bonds.
6. Explain the slope of a “normal” yield curve.

7. Describe briefly the functions of money.
8. Define the monetary aggregates M1, M2, M3. How are these aggregates affected by the following transactions:
 - ▶ A bank customer transfers 1000 Euro from his overnight deposit account to a time deposit (maturity < 2 years).
 - ▶ A bank customer draws 1000 Euro from his overnight deposit account to buy bonds.
9. Describe the economic functions of financial intermediates. What does “asset transformation” mean in this context?
10. Describe the asset and the liability side of the (simplified) balance sheet of a commercial bank.
11. Explain verbally the bank’s main management tasks.

12. Assume there is a risk-free asset E with $r_E = 0$, and two risky assets with $r_B = 0.1$, $r_L = 0.15$, $\sigma_B^2 = 0.1$, $\sigma_L^2 = 0.2$. The covariance is zero, and the risk aversion parameter is $\theta = 1$.
- ▶ Calculate the optimal portfolio consisting only of the risky assets B and L . Discuss also the graphical solution of the problem.
 - ▶ Determine the graphical solution of the problem how to construct an optimal portfolio of risky and the risk-free asset. (no mathematical solution required!)
 - ▶ In practice the portfolio approach faces several additional constraints coming from other management fields and by the needs of refinancing the activities by central bank loans (borrowed reserves). Explain this statement.

12. Explain the Value at Risk approach to solve the problem of staying solvent.
13. Assume a balance sheet with $A = D + BC$ (Assets, Deposits, Bank Capital). The expected rate of return from assets is r and the interest rate for deposits is i . Assume a cost function $c(A) = \frac{1}{2}cA^2$. Calculate the optimal portfolio volume and the optimal debt/equity ratio in case of a given Value at Risk constraint.
14. Discuss how the Value at Risk approach is also applicable to the bank's problem of staying liquid in case of deposit outflows.
15. When making a contract between a provider and a receiver of a financial fund, the problem of adverse selection arises. Explain briefly how this may affect the choice between debt and equity contracts.

16. Assume that the bank has to decide between the two assets “riskless bond” with an interest rate i_B and a risky loan with an interest rate i_L and a probability p of total debt failure. Calculate the risk premium. Argue, why “good” (=low risk) debtors may be a victim of adverse selection effects on the credit market.
17. Explain the basic idea of the credit rationing effect (Stiglitz/Weiss) by means of appropriate graphics. Why could this cause inefficiency?
18. Discuss different ways how the adverse selection problem could (partially) be solved. Emphasize the role of collaterals in this context.
19. Which empirical stylized facts could be explained by adverse selection effects?
20. Explain the problem of Moral Hazard in a principal-agent relationship. Distinguish two types of Moral Hazard problems in financial contracts (debt vs. equity contracts).

21. How could the Moral Hazard problem be alleviated (or solved) in debt and equity contracts? Discuss briefly some possibilities.
22. Describe two ways how central bank money M_0 is created (with examples of accounting records).
23. Describe the main characteristics of central bank loans (main open market operations, standing facilities).
24. Draw a figure of the market for borrowed reserves where the central bank's discount rate is adjusted close to the market interest rate. Assume that the demand for reserves increases. Analyse graphically and verbally the effects of different responses of the central bank.
25. Assume a fixed cash/deposit ratio $c = C/D$ and a ratio $e = E/D$ for the excess reserves (e.g. determined by liquidity considerations). Derive analytically the money multiplier dM_1/dM_0 . Explain briefly the determinants of the multiplier. What are the shortcomings of a static multiplier analysis?

26. Discuss analytically, graphically, and verbally the price-theoretic model of money supply by Bofinger (neglecting currency). Analyse graphically the effects of an increasing loans demand. How could the central bank respond to this demand shift?
27. Derive the endogenous money multiplier in the Bernanke/Blinder model. Assume an increase of the loans demand and hence an increase in the loans interest rate. How could this affect the money multiplier?
28. Describe briefly Post-Keynesian views on money supply.
29. Explain the motives of holding money according to Keynes theory of liquidity preference. Derive analytically and graphically the demand for money as an asset ("critical interest rate"). Discuss the relation between liquidity preference theory and the Cambridge form of quantity theory.

30. Explain verbally and graphically the portfolio theory of money demand. Analyse the effect of an increasing interest rate on the portfolio structure. Argue, whether the result is unambiguous or not.
31. Explain briefly Friedman Neo Quantity approach to money demand.
32. Why do the central bank need operational targets and intermediate targets to achieve their goals?
33. Discuss some reasons why most central banks focus on the inflation goal instead of “social welfare”.
34. What are the “social costs” of inflation which give reason to avoid inflation (and deflation)?

35. Why does the ECB operationalize their goal “close below 2% of HCPI increase” rather than zero inflation?
36. Explain different interest rate channels of transmission of monetary policy.
37. Explain the credit channels of transmission of monetary policy.
38. Discuss the Bundesbank concept of targeting the money volume (M3).
39. What does “inflation targeting” mean?
40. Describe formally and verbally the Taylor rule of monetary policy, including smoothing interest rates. What are the main advantages of the Taylor rule?

41. Consider Bofinger's price-theoretic model of money creation (see exercise 26). Derive graphically the "LM curves" for the cases of (i) monetary targeting, (ii) targeting the money market interest rate (ρ_c).
42. Develop a Keynesian macromodel with wage setting rule $w = \hat{P}^e f(u)$ and price setting rule $P = (1 + \mu)w$. Analyze the short-run and long-run effects of an expansive monetary policy in this framework.