Course in Macroeconomics and Global Economics
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Practice 2

Exercise 1

Suppose that a person's yearly income is Y=€60,000. Also, suppose that this person's money demand function is given by

$$M^d = Y(0.30 - i)$$

1. What is this person's demand for money when the interest rate is 5%? 10%?
2. Explain how interest rate affects money demand.
3. Suppose that the interest rate is 10%. In percentage terms, what happens to this person's demand for money if her yearly income is reduced by 50%?
4. Repeat point 3. when the interest rate is 5%.
5. Summarize the effect of income on money demand. In percentage terms, how does this effect depend on the interest rate?

Exercise 2

Consider a bond that promises to pay €100 in one year.

1. What is the interest rate on the bond if its price today is €75? €85? €95?
2. What is the relation between the price of the bond and the interest rate?

Exercise 3

Suppose that a person's wealth is €50,000 and that her yearly income is €60,000. Also suppose that her money demand function is given by:

$$M^d = €Y(0.35 - i)$$

1. Derive the demand for bonds. Suppose the interest rate increases by 10 percentage points. What is the effect on the demand for bonds?
2. What are the effects of an increase in wealth on the demand for money and the demand for bonds? Explain in words.
3. What are the effects of an increase in income on the demand for money and the demand for bonds? Explain in words.

Exercise 4

Assume the following:

- The public holds no currency.
- The ratio of reserves to deposits is 0.1.
- The demand for money is given by:

$$M^d = €Y(0.8 - 4i)$$

Initially, the monetary base is €100 billion, and nominal income is €5 trillion.

1. What is the demand for central bank money?
2. Find the equilibrium interest rate by setting the demand for central bank money equal to the supply of central bank money.
3. What is the overall supply of money? Is it lower, equal or greater than the supply of central bank money (Explain)? Is it equal to the overall demand for money at the interest rate you found in point 2.?
4. What is the impact on the interest rate if central bank money is increased to €300 billion?

Exercise 5

Let the monetary base H be equal to 100. Assume that the reserve to deposit ratio θ is equal to 0.05 and that the currency to deposit ratio c=0.1.

1. Compute the money multiplier and money supply M.
2. What happens to M if θ increases to 0.1? Why?