

Exercise 5 Money Market

1. What are the three functions of money? Evaluate whether "gold" can effectively serve these three functions.

three functions

- ① a medium of exchange
- ② a store of value
- ③ a unit of account

gold cannot serve these three functions in lack of a unit of account

2. Suppose that people hold 1000\$ as cash, 1000\$ as demand deposits, and 1000\$ as savings; calculate narrow money and broad money. How much is the "money supply" in the economy?

$$m_1 = \text{currency in circular} + \text{demand deposits} \\ = 1000 + 1000 = 2000$$

$$m_2 = m_1 + \text{savings} \\ = 2000 + 1000 = 3,000$$

3. What is Fractional Reserve System (FRS)? Explain how money can be created through this system.

a fraction of deposits will be reserved by central bank and the rest will be loaned out.

4. Suppose that the reserve ratio is 20% and that Mr. Bean has 100\$ CASH and 200\$ DEPOSIT. Assume that people deposits all their money, and that the banks lend all their deposits; answer the following questions.

- a) What does the reserve ratio of 20% means?
- b) WITHOUT the fractional reserve system (FRS), how much is the money supply?
- c) Calculate the money multiplier.
- d) WITH the FRS, how much is the TOTAL DEPOSIT within the economy?
- e) How much deposit is created from the FRS?
- f) WITH the FRS, how much is the money supply?

a) 20% of total deposits from bank will be reserve at central bank

b) 300

$$e) 1000 - 200 = 800$$

$$c) \frac{1}{RR} = \frac{1}{0.2} = 5$$

$$f) M_2 = \text{cash} + \text{total deposit} \\ = 100 + 1,000 = 1,100$$

$$d) \text{total deposit} = \text{primary deposit} \times \frac{1}{RR} \\ = 200 \times 5 = 1,000$$

5. Explain three roles of central banks.

- ① set the interest rate by control money supply
- ② provide fund to troubled bank that can't find sources of funds
- ③ managing exchange rate and nation's foreign reserve

6. What is Liquidity? What is the most liquid asset? Explain the three reasons (according to Keynes) why people prefer to have liquidity. Which of these three reasons causes the money demand curve to be downward-sloping?

liquidity refers to how easily assets can be converted into a mean of exchange. the most liquid asset is cash.

- 3 reasons why people prefer to have liquidity are
- transaction demand (for daily use)
 - precautionary use (for unexpected use)
 - speculative demand (for future investment)

speculative demand causes M_d curve to be downward-sloping

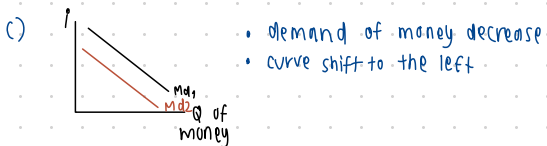
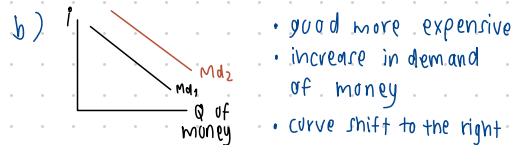
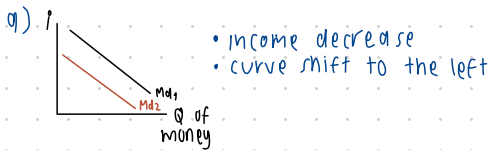
7. How does each of the followings affect the money demand curve? (That is, will it shift the curve, or is it movement along the curve?) Also, explain your reasoning.

a) People become poorer.

b) Goods become more expensive.

c) People prefer to hold less cash due to debit/credit cards

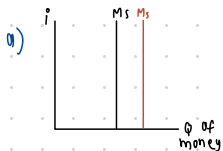
d) The central bank decreases interest rate.



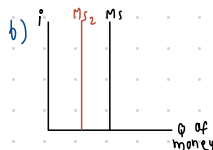
8. Why is the money supply curve a vertical line? How does each of the followings affect the money supply curve? Also, explain your reasoning.

- People deposit more money.
- The central bank increases reserve ratio.
- The central bank decreases discount rate.
- The central bank decreases interest rate.

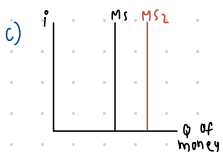
• money supply is a vertical because it is fixed by central bank and it doesn't depend on i



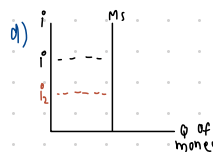
more people deposit money,
more money supply



more money are reserved lead to
a lower quantity of money

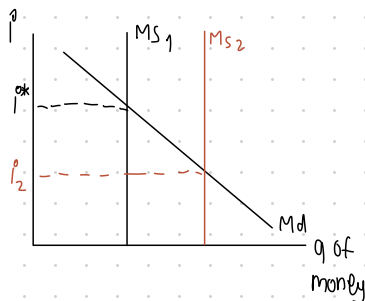


bank will borrow money lead to
higher quantity of money



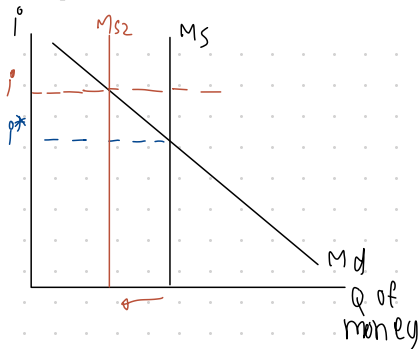
decreasing i doesn't affect
money supply curve

9. Suppose that the central bank wants to lower interest rate to boost the economy. Explain, together with the money market diagram, how the central bank can achieve this through an open market operation.



central bank will buy securities

10. Suppose that the money market is NOT in equilibrium because the current interest rate is higher than the equilibrium rate, $i > i^*$. Explain how the money market adjusts to reach the equilibrium.



when i is too high people will buy bonds.
bank cannot give high interest rate to many
saver. Therefore, they will reduce i .

11. Write down the equation for the Quantity Theory of Money. Explain how this equation can be used to explain inflation.

$mv = PY$; The increase in money supply leads to an increase in price level. That is, printing money creates inflation

12. Let the money demand function be $M_D = 200 - (1000)i$ and the money supply function be $M_S = 100$.

- a) Calculate the equilibrium interest rate, i^* . (Hint: set $M_D = M_S$ and solve for i^*)
b) Suppose that new money demand function becomes $M_D = 400 - (1000)i$. What can be inferred about the transaction and precautionary demand?

a) $M_S = M_D$
 $100 = 200 - (1000i)$
 $1000i = 100$
 $i = 0.1$

- b) the transaction and precautionary demand are not depend on i . Therefore, it is a vertical. But the curve will shift to the right due to increase in initial demand.