

## EX.5 MONEY MARKET

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

1. store of value : Be able to transfer PoP overtime
2. Medium of exchange : Generally accepted
3. Unit of account : Allow people to compare value

Gold cannot effectively serve these 3 functions in lack of 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?

$$M_1 = \text{currency in circular} + \text{demand deposits} = 1000 + 1000 = 2000$$

$$M_2 = M_1 + \text{Money and time deposit} = 2000 + 1000$$

$$\therefore \text{Money supply} = 2000 + 1000 = 3000\$$$

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

FRS is a system where a fraction of money deposit will be reserved by CB and others available for withdraw. Money can be created by banks put money out for lend.

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? CB will reserve 20% of total deposits from banks.

b) WITHOUT the fractional reserve system (FRS), how much is the money supply? 300

c) Calculate the money multiplier.  $\text{money multiplier} = \frac{1}{RR} = \frac{1}{0.2} = 5$

d) WITH the FRS, how much is the TOTAL DEPOSIT within the economy?

e) How much deposit is created from the FRS?  $1000 - 200 = 800$

f) WITH the FRS, how much is the money supply?

$$M_2 = \text{Cash} + \text{deposit (FRS)} = 100 + 1000 = 1100$$

$$\begin{aligned} \text{Total deposit} &= \text{Primary deposit} \times \frac{1}{RR} \\ &= 200 \times \frac{1}{0.2} = 1000\$ \end{aligned}$$

5. Explain three roles of central banks.

1. control money supply by setting interest rate
2. provide funds for banks when they're in trouble or don't have other resource
3. managing exchange rate and the nation's foreign reserve

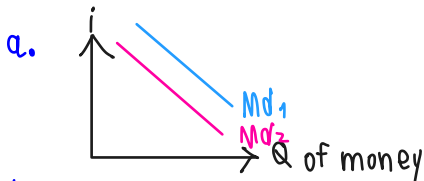
6. What is Liquidity? What is the most liquid asset? Explain the three reasons (according to Keynes) why people prefer to have liquidity. Which of these three reasons causes the money demand curve to be downward-sloping?

Liquidity refers to how easily assets can be converted into means of exchange. Cash is the most liquid asset. People prefer to have because  
 1. Transaction demand 2. precautionary use 3. speculative use

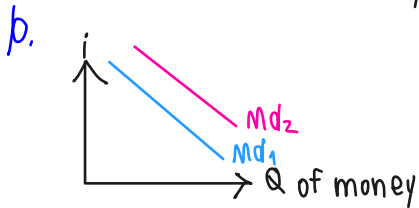
The speculative demand causes the money demand curve to be downward-sloping

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.

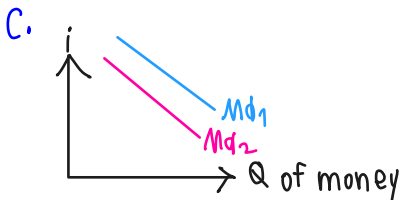
- a) People become poorer.  
 b) Goods become more expensive.  
 c) People prefer to hold less cash due to debit/credit cards  
 d) The central bank decreases interest rate.



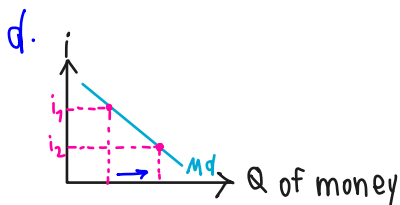
- income decrease
- Md shifts to the left



- Goods become more expensive & ppl demand for more money
- Md shifts to the right



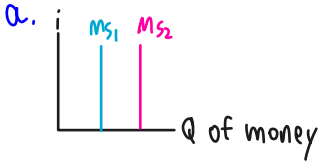
- people demand less cash
- Md shifts to the left



- movement along the curve due to change in 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.



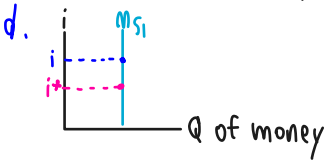
$MS$  curve shifts to the right because it deposits the cash, the quantity of money increases.



$MS$  curve shifts to the left because the money is kept in the reserve make the quantity of money decreases.

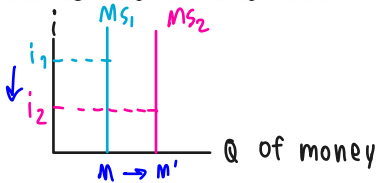


$MS$  curve shifts to the right because the banks will borrow more money, increasing the Q of money.



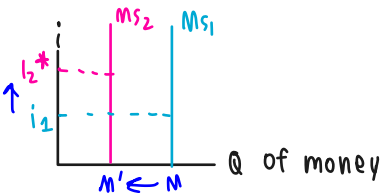
$MS$  curve does not shift because money determined by central bank, but it doesn't depend on interest rate  
↳ "movement along the curve"

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.



The central will buy government securities.  
Hence, increase the quantity of money in the market.  
To adjust it to the equilibrium the interest rate will fall.

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.



If the interest rate is too high, it will create excess supply. People will try to convert cash into bond. The bank won't be able to pay interest due to high demand for bond. so, they will low interest rate.

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

$$MV = PY$$

$M$  = money supply

$V$  = velocity

$P$  = price level

$Y$  = real output

Assume that  $V$  is constant, and  $Y$  is at full employment rate, constant as well. So the increase in money supply leads to increase in price level. Therefore, printing money create inflation.

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

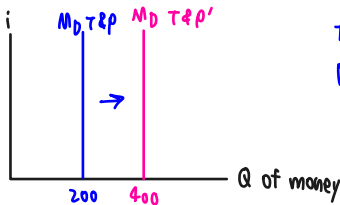
- a) Calculate the equilibrium interest rate,  $i^*$ . (Hint: set  $M_D = M_S$  and solve for  $i^*$ )

$$M_S = M_D$$

$$100 = 200 - 1000i$$

$$i = \frac{100}{1000} = 0.1$$

- b) Suppose that new money demand function becomes  $M_D = 400 - (1000)i$ . What can be inferred about the transaction and precautionary demand?



Transaction and precautionary Demand do not depend on interest rate, so it's a vertical line. Then, the initial money demand raises. It will shift the curve rightward.