

**Exercise 5**  
**Money Market**

1. What are the three functions of money? Evaluate whether “gold” can effectively serve these three functions.
  - Three functions of money are
    1. A medium of exchange
    2. A store of value
    3. A unit of account
  - From now gold cannot be an evaluator for the three functions due to many people not generally accept it, lack 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?
  - $M1 = \text{currency in circulation} + \text{demand deposits}$   
 $M1 = 1000\$ + 1000\$ = 2000\$$   
  
 $M2 = M1 + \text{saving and time deposits}$   
 $M2 = 2000\$ + 1000\$ = 3000\$$
  
3. What is Fractional Reserve System (FRS)? Explain how money can be created through this system.
  - FRS is a faction of deposits are backed by actual cash on hand and are available for withdrawal.
  - Money can be created by through this system by when the banks put out our money for others to lend and get the interest.

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?

- 20% of the total deposits must be kept by the bank at the central bank as a reserve.

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

- 300\$

c) Calculate the money multiplier.

- money multiplier =  $1 \div RR$

$$1 \div 0.2 = 5$$

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

- total deposit = primary deposit x  $(1 \div RR) = 1000\$$

e) How much deposit is created from the FRS?

-  $1000 - 200 = 800\$$

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

-  $100 + 1000 = 1100$

5. Explain three roles of central banks.

- 1. Control the money supply (monetary policy, control interest rate) and also assisting banks that are in difficult financial positions.
- 2. Lender of last resort, provides funds to troubled banks
- 3. Managing exchange rates and the nation's foreign exchange 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.
- Cash is the most liquid asset.

- People prefer to have liquidity because of:
  - transaction demand (for daily use)
  - Precautionary Demand (unexpected use)
  - Speculative demand (future investment)
- Speculative demand caused the money demand curve to be downward sloping (People prefer to hold cash when the interest rate is low)

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.

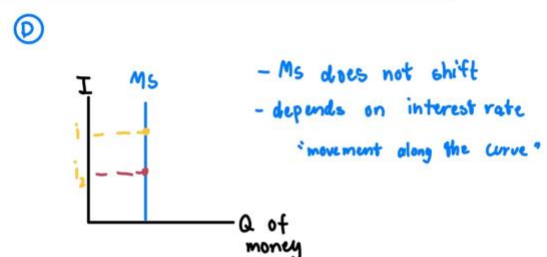
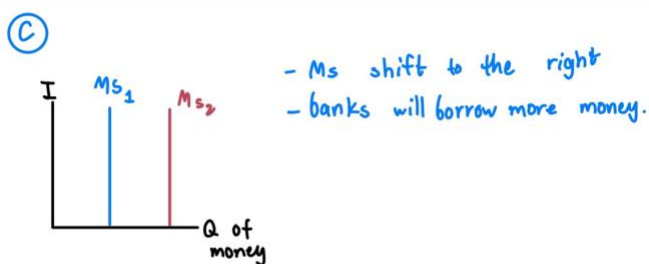
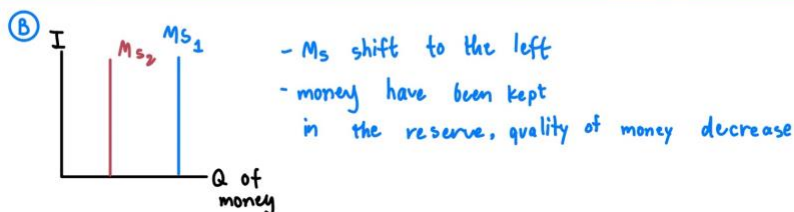
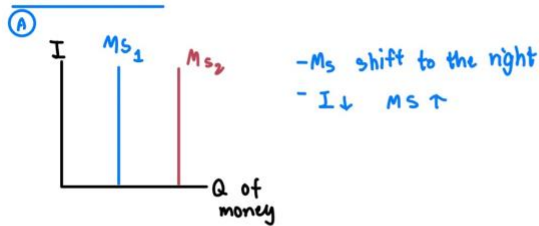
- a) People become poorer.
- b) Goods become more expensive.
- c) People prefer to hold less cash due to debit/credit cards
- d) The central bank decreases interest rate.

Question 7!



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.

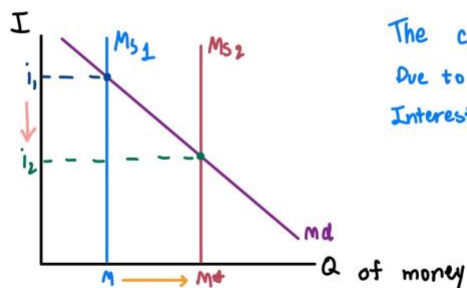
Question 8



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
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.

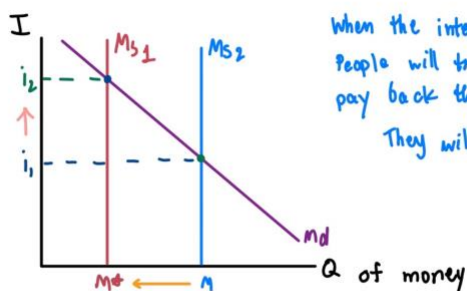
ANSWER ON THE NEXT PAGE

### Question 9



The central bank going to buy government's securities.  
Due to the increase of the quantity of money in the market.  
Interest rate must be fall to meet the equilibrium.

### Question 20



When the interest rate is high there will be an excess supply.  
People will try to invest on a bond, bank won't be able to pay back the interest due to the high amount of bond.  
They will choose to low the interest rate.

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

ANSWER ON THE NEXT PAGE

### Question 21

$$MV = PY$$

M = money supply  
V = velocity  
P = price level  
Y = real output

If V is constant, Y at full employment rate, constant as well.  
The increase in money supply leads to increase in price level.  
Printing money creates inflation.

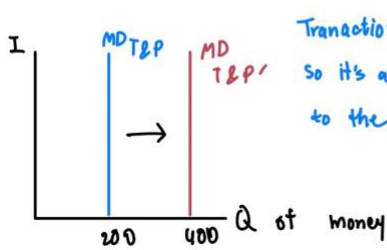
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### Question 22

(a)  $M_s = M_d$   
 $100 = 200 - 1000i$   
 $1000i = 100$   
 $i = \frac{100}{1000} = 0.1$

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(b)



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