

Exercise 5 Money Market

1. What are the three functions of money? Evaluate whether “gold” can effectively serve these three functions.
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?
3. What is Fractional Reserve System (FRS)? Explain how money can be created through this system.
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?
5. Explain three roles of central banks.
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?
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.
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.
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 $M_S = 100$.
- Calculate the equilibrium interest rate, i^* . (Hint: set $M_D = M_S$ and solve for i^*)
 - Suppose that new money demand function becomes $M_D = 400 - (1000)i$. What can be inferred about the transaction and precautionary demand?

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

1) medium of exchange : people willing to accept

2) store of value : can substitute with purchasing power

3) unit of account : compare to the value of things.

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 : Narrow money M_2 : Broad money

$M_1 =$ currency in circulation + demand deposit

$$= 1000 + 1000 = 2000 \text{ \$}$$

$M_2 = M_1 +$ saving and time deposits

$$= 2000 + 1000 = 3000 \text{ \$}$$

\therefore money supply = 2000

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

- Bank charge interest on loans.
- The Banks keep money reserves on hand so the money available whenever depositors want to make withdrawals.

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? *Banks have to keep 20% for reserve of deposit.*
- b) WITHOUT the fractional reserve system (FRS), how much is the money supply? *MS will be 200 in deposit and 100 in cash*
- c) Calculate the money multiplier. $\frac{1}{RR} = \frac{1}{0.2} = 5$
- d) WITH the FRS, how much is the TOTAL DEPOSIT within the economy? *deposit \times MM = 200 \times 5*
- e) How much deposit is created from the FRS? *1200*
- f) WITH the FRS, how much is the money supply? *MS is 600*

5. Explain three roles of central banks.

1) Responsible for managing exchange rate
whenever to buy or sell Dollar and Baht

2) Control the money supply (ex. when using monetary policy)

contractionary = $i \downarrow$ $I \uparrow$ $AE \uparrow$ $Y \uparrow$

expansionary = $i \uparrow$ $I \downarrow$ $AE \downarrow$ $Y \downarrow$

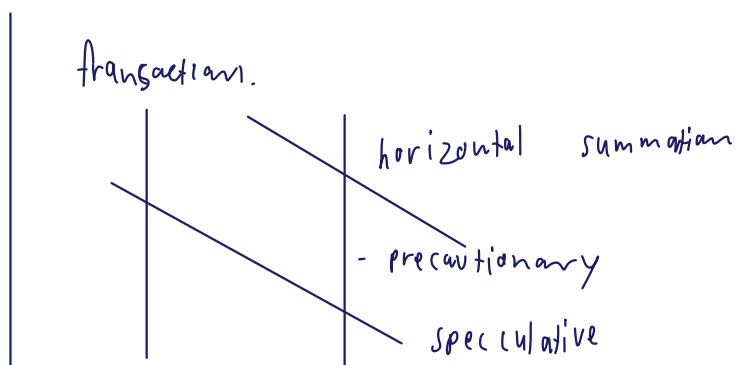
6. What is Liquidity? What is the most liquid asset? Explain the three reasons (according to Keynes) why people prefer to have liquidity. Which of these three reasons causes the money demand curve to be downward-sloping?

Liquidity refer to the ease with which an asset, or security can be converted into ready cash.

most liquid asset is cash.

Three key points that can cause money demand to be downward sloping

1. Transaction demand
2. Precautionary demand
3. speculative demand



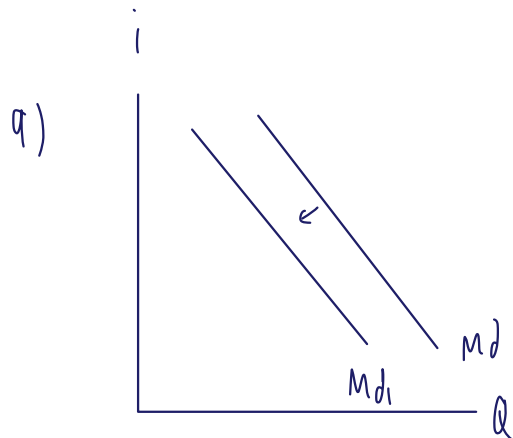
7. How does each of the followings affect the money demand curve? (That is, will it shift the curve, or is it movement along the curve?) Also, explain your reasoning.

a) People become poorer.

b) Goods become more expensive.

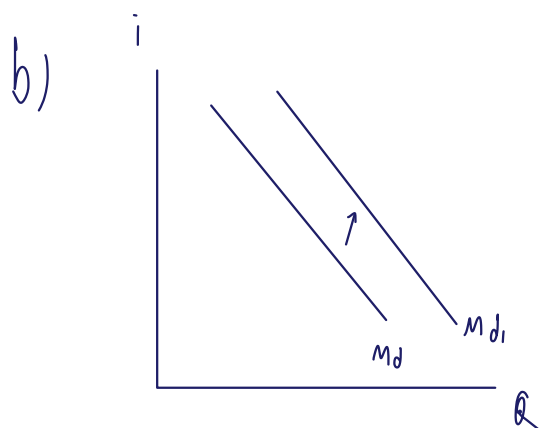
c) People prefer to hold less cash due to debit/credit cards

d) The central bank decreases interest rate.



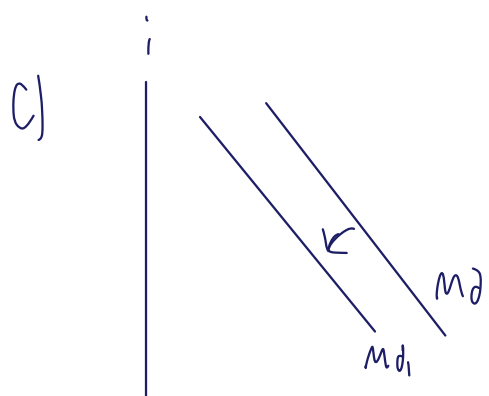
people become poorer

- Less wealthy due to the income factor making individuals to buy less goods and service.
- people will holding less causing M_d shift left.



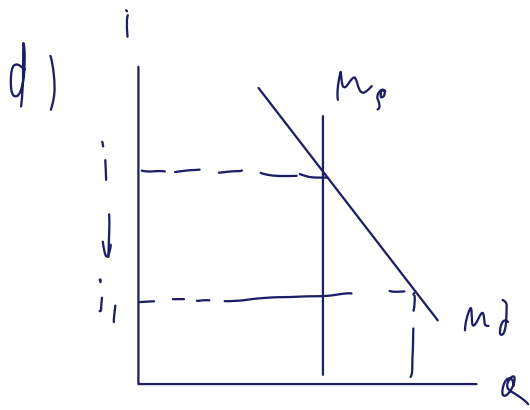
Goods become more expensive

- people don't have their hard life before, so they will demand more to spend goods and services.



people prefer to hold less cash due to debit / credit cards.

- Money demand curve shift left hand from M_d to M_{d1} , because the preference that make people holding less cash from their personal factors.



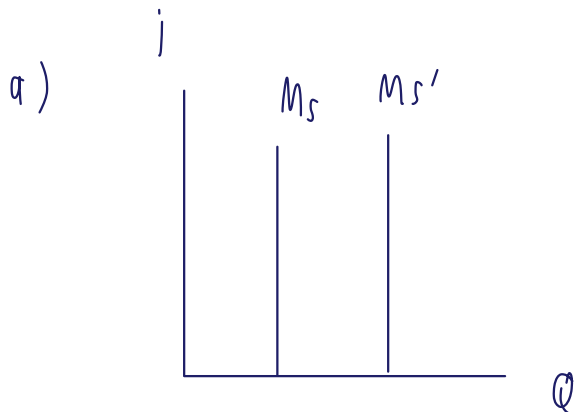
Central Bank decrease interest rate.

- people want more m_d because when i decreasing, people will hold less due to the interest rate
- speculative demand.

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

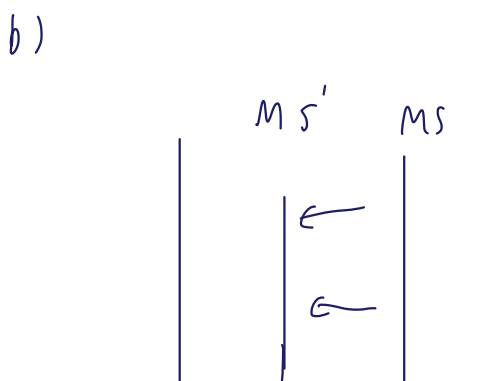
- People deposit more money.
- The central bank increases reserve ratio.
- The central bank decreases discount rate.
- The central bank decreases interest rate.

Money supply controlled by the central bank
 M_s curve does not depend on interest rate.



People deposit more money

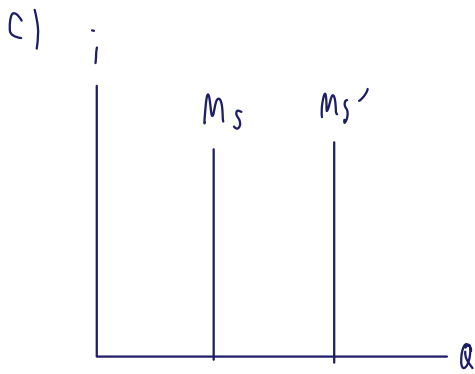
- when people deposit more money means that M_s curve shift rightward due to fractional reserve system
- when deposit more \rightarrow the reserve system will rise



control bank increase reserve ratio

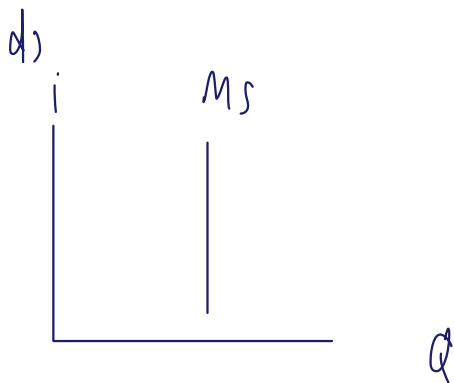
- there'll be more deposit being kept it will be lower currency in economy and then lower M_s .

Central bank decrease discount rate



- MS shift rightward. when CB decrease discount rate will causing commercial bank borrow more reserve money CB so MS will rise.

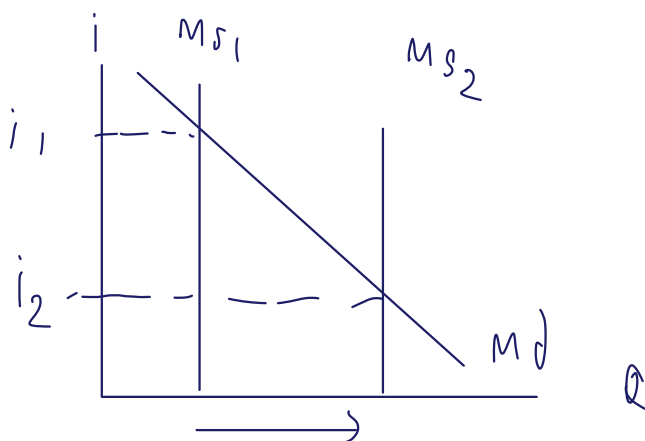
CB decrease interest rate



- MS curve doesn't shift because MS
- MS determined by CB it doesn't depend on interest rate.

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.

To boost the economy bank has to increase MS and reduce interest rate. The CB buy securities, the CB pay to the public this will increase MS.



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.

there will be excess money supply, people try to convert money to bond to reach money market equilibrium. Bond issue will respond by lower interest rate.

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

$$MV = PY$$

therefore M = money supply

P = price level

V = How much money change hand

Y = real output

given V, Y constant if $M \uparrow$ $Y \uparrow$ that's

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

$$a) \quad 100 = 200 - 1000i$$

$$i = 0.1$$

b) they are increase in baht demand, so both of their graph will shift right