

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?

Exercise 5

- ① - medium of exchange
- store of value
- unit of account

gold can be medium of exchange in some country.

gold is store of value

gold is unit of account because we can measure gold in unit.

- ② $M1 = \text{currency in circulation} + \text{demand deposits}$

$$M1 = \$1000 + \$1000 = \$2000$$

$$M2 = M1 + \text{saving and time deposits}$$

$$= \$2000 + \$1000 = \$3000$$

\therefore Money supply in the economy is $M1$ or $\$2000$

- ③ FRS is the banking system used by goldsmiths and banks.

In the past, people used gold as money but it wasn't convenient, so they stored gold at goldsmiths for safety. Then goldsmiths issued receipts that could be exchanged for gold. These receipts became a new form of money.

- ④ a) the bank must keep 20% of total deposit at the central bank.

b) 0

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

d) $\$200$

e) $\$500$

f) $\$300$

- ⑤ - to control the money supply i.e. monetary policy.

- performs several important functions for banks

- provides funds to troubled banks that cannot find any other sources of funds.

- ⑥ Liquidity refers to how easily assets can be converted into a mean of exchange.

Cash is the most liquid asset.

- Transaction Demand (for daily use)

- Precautionary Demand (for unexpected use)

- Speculative Demand (for future investment)

speculative Demand causes the money demand curve to be downward-sloping.

- ⑦
- shift the curve because people want to buy less goods and thus need less cash
 - shift the curve because people will want to spend less to save cash.
 - shift the curve because this is personal factor.
 - movement along the curve because this is change in interest rate.

- ⑧ The money supply is determined by the Central Bank and doesn't depend on interest rate, so the curve is vertical.
- The curve will shift up because money in Central Bank increase.
 - The curve will shift up because CB will have more money.
 - The curve will shift up because decreases discount rate means that CB will have more money.
 - The curve will be the same because interest rate does not affect this curve.

⑨ CB have to use expansionary monetary policy to reduce interest rate.

⑩ Use contractionary monetary policy to raise interest rate and reduce inflation.

⑪ $MV = PY$

v is constant

Y is at the full-employment level and hence is constant

An increase in money supply \rightarrow increase in price level. That is, printing money creates inflation.

⑫ a) $M_D = M_S$

$$200 - 1000i = 100$$

$$100 = 1000i$$

$$i^* = 0.1 \text{ \textcircled{*}}$$

b) transaction and precautionary demand increase.