

Chapter 1

Money

Learning Objectives:

- Define money
- Illustrate types of money
- Describe functions of money
- Understand interest and interest rate
- Describe money supply
- Introduce China's monetary system

When talking about money, people usually feel familiar but sometimes confused. We are familiar with it because it is everywhere in life, and we feel confused when we think about the true nature of it. What is money? What are the functions of money? And how many types of money are there in history? Questions like these will be explored in this chapter.

1.1 Definition of Money

Money can be defined as any object that is generally accepted in the payment for goods and services or in the repayment of debts. Currency, which is banknotes and coins, clearly fits this definition and is one type of money.

However, to define money merely as currency is too narrow today for people because practically all payments are made not only by the exchange of currency but also by the transfer of deposit balance via checks or electronic transfer wire. So checks are also accepted as the payments for purchases and checking account deposits are considered money as well. Sometimes, an even broader definition of



money is needed because other items such as savings deposits can in effect function as money if they can be quickly and easily converted into currency. This is also true with time deposits. They are all items that are “generally acceptable” in making payments.

1.2 Types of Money

Before the development of a medium of exchange, people would barter to obtain the goods and services they needed. This is basically how it worked: two individuals each possessing a commodity the other wanted or needed would enter into an agreement to trade their goods. So barter is the process of directly exchanging one good or service for another, and only when “a double coincidence of wants” exists the trade could take place. For instance, if you have cows but need bananas, you must find someone who not only has bananas but also has the desire for meat. If you happen to find a right person, the next question will be how much meat you will exchange for the bananas you want. What if you find someone who has the need for meat but no bananas and can only offer you bunnies? Apparently the barter system is not convenient and to solve the problem commodity money appeared.

1.2.1 Commodity Money

Commodity money or money in kind is money whose value comes from a commodity out of which it is made. They are objects that have value in themselves as well as for use as money. Examples of commodities that have been used as mediums of exchange include gold, silver, copper, salt, large stones, decorated belts, shells, alcohol, cigarettes, barley, etc. In practice, over the past 4,000 years, the predominant commodity money has been precious metals: mostly silver and gold, also called full-bodied money¹, which is one of the stages of commodity money. Almost all countries have passed the stage of precious metal money which used to be a perfect form of money.

1. 2. 2 Representative Money

Representative money or representative full-bodied money refers to paper money fully backed by a precious metal. The value of representative money stands in direct and fixed relation to the commodity that backs it, while not itself being composed of that commodity. In 1930s when the economic and financial crisis stopped the exchange of paper money for metals, the gold standard or the silver standard collapsed. The major western countries had to break away from the metal standard, thus paper money could not be converted into gold any more. Since then representative money exited from circulation and credit money emerged.

1. 2. 3 Credit Money

Credit money is the money which does not consist of or represent a specific valuable commodity. The value of credit money depends on its general acceptance based on the credit of its issuer and it is created through credit process. Credit money has two features; one is its relation with precious metals; the other is that it is based on the credit of national governments and banks. Although precious metals are not needed to back the issuance of credit money, it does not mean that modern credit money has not any reserves to back its issuance. In fact, most countries in the world that adopt the system of credit money have a fairly big amount of reserves, such as gold, foreign exchange, for issuance of credit money.

The money issued is based only on the general credit of a government and on the provision that such money is a legal tender, acceptable to pay taxes and to fulfill contracts calling for payment in the lawful money.² This is the case today in most countries in the world. Since this money is proclaimed to be the money by law or a decree known as a fiat, it is sometimes called fiat money. Almost all money circulating in the world today is some form of credit money.

1. 2. 4 Electronic Money

The form of money changes as the science and technology develops. Today,

although much of the money used by individuals in their everyday transactions is still in the form of notes and coins, its quantity is small in comparison with the intangible money that exists only as entries in bank records. Perhaps coins and banknotes will become as obsolete as cowries shells. Electronic money refers to depository money that is stored and processed through computer system or electronic payment system. It has many different forms, for example, credit cards, smart cards and funds held in online accounts that can be transferred over the internet and so on.

1.3 Functions of Money

As far as the functions of money are concerned, economists have many historical disputes over the combination of the functions. The most commonly distinguished functions of money are as a medium of exchange, a unit of account, a store of value, and, sometimes, a standard of deferred payment.

1.3.1 Medium of Exchange

When money is used to intermediate the exchange of goods and services, it is performing the function of a medium of exchange. This effectively eliminates the requirement of double coincidence of wants and overcomes the difficulty of barter system.

1.3.2 Unit of Account

Money also functions as a unit of account, providing a common numerical measure of the value of goods and services exchanged. Knowing the value or price of a good, in terms of money, enables both the supplier and the purchaser of the good to make decisions about how much of the good to supply and how much of the good to purchase. A unit of account is also a necessary prerequisite for the formulation of commercial agreements that involve debt.

1.3.3 Store of Value

A store of value is used to save purchasing power from the time when income is received until the time when it is spent. That means money is used to defer the time of exchange of goods and services. This function of money is useful because most of us do not want to spend our income immediately upon receiving it but rather to wait until we have the time or the desire to shop.

As a store of value, it should be noted that, money is not unique; many other stores of value exist, such as land, works of art, and even stamps. Money may not even be the best store of value because it depreciates with inflation. However, money is more liquid than most other stores of value because as a medium of exchange, it is readily accepted everywhere. Furthermore, money is an easily transported store of value that is available in a number of convenient denominations.

In addition to the above three functions, some economists also regard “a standard of deferred payment” as one of the functions of money. A standard of deferred payment is the accepted way, in a given market, to settle a debt—a unit in which debts are denominated.³ But now many newer texts do not distinguish this, subsuming it in other functions. They argue that using money as a standard of deferred payment is a direct consequence of the unit of account and store of value functions of money. Since money is the standard for current prices, it is also the standard for future payments based on these prices. Besides, for money to function as a deferred payment standard, it must retain value, so it must also store value. In view of the aforesaid reasons, here we define money in terms of three functions: a medium of exchange, a unit of account, and a store of value.

1.4 Interest and Interest Rate

Interest is a fee paid on borrowed assets. It is the price paid for the use of borrowed money, or, money earned by deposited funds. Assets that are sometimes

lent with interest include money, shares, consumer goods through hire purchase⁴, major assets such as aircraft, and even entire factories in finance lease arrangements. The interest is calculated upon the value of the assets in the same manner as upon money. Interest can be thought of as “rent of money”. When money is deposited in a bank, interest is typically paid to the depositor as a percentage of the amount deposited; when money is borrowed, interest is typically paid to the lender as a percentage of the amount owed. Interest rate refers to the ratio of the interest formed during the period of borrowing and lending to the principal of the granted loan.

Interest is compensation to the lender, and for forgoing other useful investments that could have been made with the loaned asset. These forgone investments are known as the opportunity cost⁵. Instead of the lender using the assets directly, they are advanced to the borrower. The borrower then enjoys the benefit of using the assets ahead of the effort required to obtain them, while the lender enjoys the benefit of the fee paid by the borrower for the privilege. Interest also compensates the lender for the risk of losing the principal, called credit risk. In economics, interest is considered the price of credit.

Interest rates have an impact on the overall health of the economy because they affect not only consumers' willingness to spend or save, but also businesses' investment decisions. High interest rates, for example, may cause a corporation to postpone building a new plant that would ensure more jobs.

Interest rates form a very complicated system of economic variables and have various forms since people observe interest rates from different perspectives. The following part focuses on three types of interest rates.

1.4.1 Simple Interest and Compound Interest

Simple interest refers to interest earned only on the principal of the initial investment. It is given by the following formula:

$$I = PRn$$

$$S = P + I = P(1 + Rn)$$

Where I stands for the interest earned, P is the principal (the initial amount of money), R is the interest rate per year, n is the time in years, and S is the sum of principal and interest. For instance, if you borrow ¥2000 at 6% interest rate for 2 years, you have to pay the following simple interest:

$$I = PRn = 2000 \times 6\% \times 2 = \text{¥}240$$

With regard to compound interest, interests for previous periods are added to principal for the calculation of interest. With the annual compounding, the interest that accumulates during a year is added to the principal at the end of the year, so that in the following year your money earns interest in interest. If you borrow the same amount of money (¥2000), at the same rate (6%), and for the same length of time (2 years), this is how you can find the compound interest:

At the end of the first year, the interest will be:

$$\text{Interest year 1} = 2000 \times 6\% \times 1 = \text{¥}120$$

Add ¥120 to the initial principal (¥2000), so the new principal for the second year is ¥2120.

The interest at the end of the second year will be:

$$\text{Interest year 2} = 2120 \times 6\% \times 1 = \text{¥}127.20$$

Therefore, the total compound interest at the end of the two years is ¥120 + ¥127.20 = ¥247.20.

The formula concerning compound interest can be stated as follows:

$$S = P(1 + R)^n$$

$$I = S - P$$

1.4.2 Nominal and Real Interest Rates

Nominal interest rate is the promised amount of money you receive per unit you lend. It is unadjusted for inflation.

Real interest rate is approximately the nominal interest rate minus the inflation rate. It is the rate of interest an investor expects to receive after subtracting inflation. This is not a single number, as different investors have different expectations

of future inflation.⁶ If, for example, an investor were able to lock in a 5% interest rate for the coming year and anticipated a 2% rise in prices, it would expect to earn a real interest rate of 3%. Since inflation rate over the course of a loan is not known initially, volatility in inflation represents a risk to both the lender and the borrower.

1.4.3 Official and Market Interest Rates

The former is the rate set by the central banks or monetary authorities. The interest rate is one of the levers used by governments to regulate economy. In order to let the interest rate reflect the policy intention of a government, the central bank should control the level of some interest rates. One of the most commonly known rates of the kind is the rate of refinancing provided by the central bank for commercial banks and other financial institutions, including discount rate and lending interest rate.

Market interest rate is the rate wholly determined by the demand and supply of funds in the financial markets at a certain period. It is an indicator of the state of the demand and supply of funds in the markets. The inter-bank interest rates are the typical market interest rates, among which the LIBOR⁷ is the most influential in the international financial market.

1.5 Money Supply

Money supply refers to the collection of all kinds of money in an economy, including the volume of currency in circulation and the volume of deposits at any point of time. Typically, distinct measures of money are reported, differentiated by the types of deposits (and close substitute for deposits) they include. One measure of money is known as narrow measure including currency and demand deposits used for everyday expenditures. The other is broad measure of money that adds time deposits and savings accounts and certain other financial assets. It is the liquidity of money that is most helpful in dividing the measures of the money supply.

Each country publishes several different measures of money supply to show the effects on economy. Generally speaking, money supply is defined as follows:

- a. The narrow measure of money: M_0 and M_1

$$M_0 = \text{Currency}$$

M_0 is the currency or cash in circulation including banknotes and coins. M_0 is also called monetary base⁸ that measures the quantity of currency issued by the central bank.

$$M_1 = M_0 + Dd$$

M_1 comprises those assets which are themselves acceptable in exchange and normally held with the intention of spending them in the immediate future. M_1 includes M_0 , checkable or demand deposits at banks. M_1 measures transaction balances.

- b. The broad measure of money: M_2 and M_3

$$M_2 = M_1 + Ds + Dt$$

M_2 is a broader measure of purchasing power than M_1 . It includes all of M_1 plus savings deposits and time deposits at bank. They are of highly liquid financial assets. Most of these components of M_2 are assets that provide their owners with a higher rate of return than M_1 components would. If the store-of-value function rather than the medium-of-exchange function of money is emphasized, broader measures are appropriate.

$M_3 = M_2 + \text{short-term government securities} + \text{commercial paper} + \text{life insurance policies}$

M_3 here is the broadest measure of money that is available to the public. It adds to M_2 a variety of liquid assets, including the public's holding of short-term government securities, commercial paper, etc. All of these represent stored purchasing power of their owners and are thus potentially related to economic activities.

The reason why so many measures of money are defined is that economists have different opinions as to which measure is most consistently related to spending and other economic activity and that the central banks can monitor the operation of

macro-economy and conduct monetary policy. Since the middle of 1970s, when the quantity of money supply instead of interest rates was seen as intermediate policy target in some countries the measuring of different levels of money supply has had special meaning for policy operation. For example, when monetary authorities discuss how to control the target of money supply, they should be clear about controlling which level of money supply and the difference between this level and other levels of money supply.

In China there are clear distinctions among different levels of money supply because of strict financial regulations and fewer financial instruments with little changes. So it is more convenient for the People's Bank of China to monitor and regulate the macro-economy to some extent. Presently in China money is measured in a more concise way according to the bank survey of the PBC.

M_0 = Currency in circulation including banknotes and coins

M_1 = M_0 + demand deposits

M_2 = M_1 + quasi-money including household deposits, time deposits and other deposits

1.6 China's Monetary System

The issuance of Renminbi on Dec. 1, 1948 marked the establishment of China's Renminbi system. The main contents of our monetary system are as follows. Firstly, Renminbi is the legal tender. Yuan is its unit. Renminbi has no relation to gold, nor any foreign currencies. It is inconvertible credit money. Secondly, Renminbi is the sole legal money in China. Our country prohibits gold, silver and foreign exchange from being used in accounting and circulation in our domestic market. Thirdly, the issuance of Renminbi is highly concentrated and the People's Bank of China holds the right of issuance of Renminbi. The issuance of Renminbi is backed by the goods and materials held by the government. Renminbi is issued through the channel of purchasing gold, silver, foreign exchange and granting loans by the

PBC. Gold and foreign exchange are used as the reserves for international payments.

Since the beginning of China's economic reform and opening-up more than three decades ago, China's Renminbi system has had a stable economic and social foundation though serious inflation occurred at different periods and stages. Renminbi is regarded as a hard currency in our neighboring countries. In 1996 Renminbi became convertible under the current account of international balance of payments, which shows the high degree of China's opening to the outside world and the strong economic strength of China's monetary system.

With the continuous deepening of our economic reform and further advancement of opening to the outside world, our monetary system needs further perfection. We have resumed the exercise of sovereignty over Hong Kong and Macao. But there exists the system of Currency Board⁹; Hong Kong dollars and Macao dollars are regarded as foreign exchange according to the regulations of China's foreign exchange administration and can not circulate in the mainland; Hong Kong dollars and Macao dollars are issued together by several commercial banks and linked to the U. S. dollars. How to coordinate the circulation of the three currencies and build up a modern monetary system with Chinese characteristics needs our attention and further study.

New Words

currency [ˈkʌrənsi] n. 通货, 货币

barter [ˈbɑ:tə] n. 物物交换

intangible [inˈtændʒəbl] adj. 无形的

entry [ˈentri] n. 会计分录

numerical [nju:ˈmerikəl] adj 数字的, 用数字表示的

depreciate [diˈpri:ʃieit] v. (使) 贬值; 折旧

inflation [inˈfleɪʃən] n. 通货膨胀

denomination [di,nəmiˈneiʃən] n. 计值单位; 面值

- subsume [sʌb'sju:m] v. 包容, 包含
forgo [fɔ:'gəu] vt. 放弃
volatility [ˌvɒlə'tiliti] n. 易变性, 不稳定性
lever ['li:və, 'levə] n. 杠杆
expenditure [iks'penditʃə] n. 支出, 花费; 支出额
security [sikjuəriti] n. 证券
policy ['pɒlisi] n. 保险单
convertible [kən'veɪtəbl] adj. 可兑换的, 可转换的
sovereignty ['sɔ:vrinti] n. 主权; 主权国家

Terms and Expressions

- money in kind 实物货币
representative money 代用货币
gold standard 金本位
silver standard 银本位
legal tender 法偿货币
fiat money 法定货币
medium of exchange 交换媒介
a unit of account 价值尺度
a store of value 价值储藏
a standard of deferred payment 延期支付
simple interest 单利
compound interest 复利
nominal interest rate 名义利率
real interest rate 实际利率
discount rate 贴现率
demand deposits 活期存款
time deposits 定期存款
savings account 储蓄账户

commercial paper 商业票据

current account 经常项目；活期账户

balance of payments 国际收支

Notes

1. full-bodied money 足值货币，指含有与其面值相同价值的铸币。

2. The money issued is based only on the general credit of a government and on the provision that such money is a legal tender, acceptable to pay taxes and to fulfill contracts calling for payment in the lawful money.

发行的货币仅基于政府信用和以该货币作为法偿货币的规定。法偿货币即纳税、履行合同时用于支付的合法货币。

3. A standard of deferred payment is the accepted way, in a given market, to settle a debt—a unit in which debts are denominated.

延期支付是指货币在特定的市场中结算债务时被普遍接受的方式——货币是债务的计值单位。

4. hire purchase (HP) 租购，分期付款购买。指消费者先买下商品使用，然后每月定期付款的信用制度。

5. opportunity cost 机会成本。指在选择投资方案中，选择一种方案，就必须放弃其他投资方案，而放弃的其他投资方案可能产生的最大投资收益，就是选定此项投资方案的机会成本。

6. This is not a single number, as different investors have different expectations of future inflation.

这不是一个统一的数字，因为不同的投资者对未来的通货膨胀预期不同。

7. LIBOR (London Interbank Offered Rate) 伦敦银行同业拆借利率。指伦敦银行同业英镑或欧洲美元存放款交易的利率，是国际金融市场中大多数浮动利率的基础利率。

8. monetary base 基础货币。也称货币基数、强力货币、始初货币，因其具有使货币供应总量成倍放大或收缩的能力，又被称为高能货币 (High-

powered Money)。它是中央银行发行的债务凭证，表现为商业银行的存款准备金和公众持有的通货。

9. Currency Board 货币局制度。指某个国家或地区首先确定本币与某种外汇的法定汇率，然后按照这个法定汇率以 100% 的外汇储备作为保证来发行本币，并且保持本币与该外汇的法定汇率不变。香港的联系汇率制是从货币局制度派生出来的。其物质基础是外汇储备。

Exercises

I. Decide whether each of the following statements is true or false.

1. Strictly speaking, money is currency.
2. By barter, it means people use goods to trade for other goods made by other people.
3. Some items are accepted not because they are useful or portable but because they can be used to trade for other things, which we call a medium of exchange.
4. Money is the unique form in which wealth can be held.
5. Credit money, as commodity money, has value in itself.
6. Interest rates move in the same direction with that of the stock index.
7. Nominal interest rate is unadjusted for inflation.

II. Fill in the blanks with the words given below.

function goods trading devoted specialize difficulty division process

Very early in the history of civilization, people discovered the advantages of _____ 1 _____ of labor and specialization. It was apparent even to primitive tribes that some of people _____ 2 _____ themselves to making weapons, others to hunting, and still others to farming, the tribe as a whole would end up with more weapons and more food than if everyone attempted to do everything for himself.

The _____ 3 _____ inherent in this specialization was that no one would _____ 4 _____ in making arrows unless he could exchange his arrow production for food. Provision for _____ 5 _____ is essential if specialization is to be successful.

The primary _____ 6 _____ of money is to facilitate the _____ 7 _____ of exchange.

Exchange, of course, could take place without money, but it would be extremely complicated. In primitive societies, direct bartering of goods for other ___ 8 ___ is common, but there are obvious difficulties. A butcher who wants shoes must find a shoemaker who wants meat. If the shoemaker is a vegetarian, the butcher must either make a preliminary trade or go barefoot. The difficulty of finding the other party to a desired exchange would mean that little exchange could actually take place.

III. Choose the best answer.

1. A rise of interest rates will cause _____.
 - A. an increase in borrowing and a slowing-down of credit creation
 - B. a decrease in borrowing and an increase in credit creation
 - C. an increase in borrowing and an increase in credit creation
 - D. a decrease in borrowing and a decrease in credit creation
2. Which of the following is not one of the functions of money?
 - A. medium of exchange
 - B. store of value
 - C. financial assets
 - D. standard for payment
3. What is the factor that led to the invention of money?
 - A. market places
 - B. double coincidence of wants
 - C. difficulties and inefficiency of the barter system
 - D. rate of exchange
4. Suppose you deposit 1,000 yuan in a bank for two years with the interest rate 3% per annum, then you will have _____ yuan under a simple interest arrangement, and _____ yuan under a compound interest rate arrangement at the end of the second year.
 - A. 1,030 1,060
 - B. 1,060 1,090
 - C. 1,030 1,030.9
 - D. 1,060 1,060.9

Chapter 2

Foreign Exchange

Learning Objectives:

- The definition of foreign exchange
- The quotations of the foreign exchange rate
- Spot, forward and swap foreign exchange transactions
- Foreign exchange futures
- Foreign exchange options

2.1 Definitions and Quotations

2.1.1 Definition of Foreign Exchange

The term “foreign exchange” has three principal meanings. In the first place, it means the system utilized in financing international payment. In the second place, it means the media used to discharge international obligations. For the purpose of international finance and exchange, the principal kinds of media are telegraphic transfers, mail transfer, bills, demand drafts, cheques, banker’s draft, foreign bonds, etc. The third meaning of the term “foreign exchange” is that it covers, in a general way, the rates at which foreign exchange is quoted.

World trade and the cross-border money and capital movements resulting from financial transactions are the basis of foreign exchange dealings. Take a simple example; if a Swiss exporter sells a machine to a Japanese buyer, to conclude the transaction the yen which the Japanese businessman has available will have to be changed into Swiss francs, the currency sought by the supplier of the machine. Or if continental banks want to place excess funds in the Eurodollar market rather than in