

CHAPTER 2

Principles of Money

Learning Objectives

- How money is defined by its functions
- How to apply the definition in measuring what money is and what it is not
- Why the Federal Reserve publishes numerous measures of monetary aggregates including M_1 , M_2 , and M_3
- The meaning of domestic nonfinancial debt (DNFD)
- The role of technology in the evolution of the payments system
- How the existence of money facilitates the development of an economy

Chapter Outline/Lecture Notes

I. Defining money

A. **Money** is anything that functions as a medium of exchange, a unit of account, and a store of value.

B. Money is unique among financial assets because it is acceptable as a **means of payment (medium of exchange)**. A **unit of account** is a standardized accounting unit such as the dollar that provides a consistent measure of value. A **store of value** retains its value over time.

C. Money eliminates the need of a **double coincidence of wants** in a **barter economy**.

D. Money will spontaneously develop in an exchange economy because it reduces the transactions costs of making exchanges.

II. The monetary aggregates

A. The Fed monitors, collects, and publishes information on several different **monetary aggregates** including M_1 , M_2 , and M_3 . One of the reasons the Fed does so is because what functions as money has changed overtime.

B. **M_1** (transactions money) includes currency in the hands of the public, **checkable deposits**, and Travelers checks. Checkable deposits include **demand deposits** and **Negotiable Order of Withdrawal (NOW) Accounts**.

C. **M_2** includes everything in M_1 plus other highly liquid assets (**near monies**) including small savings and time deposits (<\$100,000), including **money market deposit accounts** plus individual money market mutual funds.

D. **M_3** is everything in M_2 plus some less liquid assets including large time deposits, term repurchase agreement and term Eurodollars plus institutional money market mutual funds.

III. Domestic nonfinancial debt

In addition to the monetary aggregates, the Fed keeps track of **domestic nonfinancial debt (DNFD)** which is a measure of outstanding loans and debts accumulated by domestic nonfinancial sectors including the U.S. government, state and local governments, private nonfinancial firms, and households

in the present and past years. The debt of financial institutions that borrow for the purpose of relending is not included to prevent double counting.

IV. The economy and the aggregates

A. Sometimes a given aggregate has been more highly correlated with the level of economic activity than at other times.

B. In the early and mid-1980s, M1 was the primary measure of money that the Fed watched. M2 gained importance in the late 1980s because there was a more stable relationship between changes in M2 and economic activity than between M1 and economic activity. In the early 1990s, changes in DNFD were most highly correlated with changes in economic activity. If credit is increasing, economic activity is increasing and vice versa. However, correlation does not imply causation.

C. In the mid 2000s, the Fed has looked to other indicators to aid in the execution of policy and used the monetary aggregates and DNFD as informational variables only.

V. The evolution of the payments system

A. The **payments mechanism** is the means by which transactions are completed.

B. Because of technological innovations, a larger percent of payments are made using an **electronic funds transfer system** which is the transfer of funds to third parties in response to electronic instruction rather than instructions written on a paper check.

C. Such innovations include **debit cards, stored-value cards, smart cards, point-of-sale terminals, and ATMs.**

Answers to Review Questions

- 1. Discuss or define briefly the following terms and concepts: means of payment, store of value, unit of account, barter, monetary aggregates, liquidity, domestic nonfinancial debt, electronic funds transfer system, and risk.**

Means of payment: Something that is generally accepted and used to make payments.

Store of value: Something that retains its value over time.

Unit of account: A standardized accounting unit, such as the dollar, which is the standard measure of value.

Barter: Trading goods for goods in an exchange economy.

Monetary Aggregates: The measures of money, including M1, M2, M3, and L, which the Fed keeps track of and monitors.

Liquidity: The ease with which a non-monetary asset can be converted to money without loss of value.

Domestic Nonfinancial Debt: Total credit market debt owed by the nonfinancial sector and accumulated in the past and present years; includes the debt owed by the household, nonfinancial business, government, and rest of the world (foreign) sectors.

EFTS (Electronic Funds Transfer System): The transfer of funds to third parties in response to electronic instructions rather than instructions written on paper checks.

Risk: The possibility of financial assets losing value.

2. What are the functions of money? Which function do you think is most important?

The functions of money are to serve as a means of payment (medium of exchange), a unit of account, and a store of value.

The most important function of money is to serve as a means of payment (medium of exchange). Thus, it is critical that money is generally accepted to make payments. Without a generally accepted means of payment, exchange is very costly. For an exchange to take place, there would have to be a double coincidence of wants where the person you wished to buy from wanted what you were offering in exchange.

3. Suppose we define *money* as that which serves as a store of value. Explain why this is a poor definition.

Defining money as something that serves as a store of value is a poor or incomplete definition of money. Many items such as diamonds, gold, bank accounts, or houses can store value, but are not generally accepted as means of payment. For example, you cannot buy a hamburger with a rare oil painting even though it may be an excellent store of value.

4. Suppose something is functioning as money within an economy. What could cause the population to lose confidence in the value of the means of payment? What do you think would happen as a result?

People would lose confidence in “money” if it failed to hold its value (to serve as a store of value). “Money” would not retain its value if there was high inflation. In such a situation, the population would stop accepting it as a means of payment. Thus, what was functioning as money would stop functioning as money because it would no longer be accepted to make payments.

5. How does the Fed calculate M1, M2, M3, and DNF? Are these aggregates all money? Why or why not? Which contains the most liquid assets? Which is smallest? Which is largest?

To calculate M1, M2, M3, and DNF, we merely add up the items included in the aggregate as follows:

$M1 = \text{currency in the hands of the public} + \text{demand deposits at commercial banks} + \text{other checkable deposits} + \text{travelers' checks}$

$M2 = M1 + \text{small savings and time deposits (less than \$100,000), including money market deposit accounts} + \text{individual money market mutual funds}$

$M3 = M2 + \text{large time deposits} + \text{term repurchase agreements and term Eurodollars} + \text{institutional money market mutual funds}$

$DNF = \text{credit market debt of the U.S. Government and state and local governments} + \text{corporate bonds} + \text{mortgages} + \text{consumer credit (including bank loans)} + \text{other bank loans} + \text{commercial paper} + \text{other debt instruments}$

All of these aggregates except DNFD are a measure of money. M1 is the narrowest measure of money and the smallest aggregate. M1 is generally used for transactions and contains the most liquid assets—assets that are money per se. M2 and M3 are progressively broader measures of money that include M1 and other near money assets. For example, M2 contains everything in M1 plus some other highly liquid near monies. M3 contains everything in M2 plus other less liquid near money substitutes. DNFD is the largest aggregate but many of the items in DNFD are not money or near monies. DNFD is the broadest measure of nonfinancial credit in the domestic economy.

6. Why does the Fed have so many monetary measures? Which monetary aggregate is most closely associated with transactions balances?

The Fed has so many monetary measures for two reasons: First, what functions as money changes over time so the Fed monitors several monetary aggregates. Second, during different time periods, some measures of money are more highly correlated with the level of economic activity than at others times. If changes in an aggregate were highly correlated with economic activity, then it could be used to implement monetary policy. For example, in the 1970s and early 1980s, M1 was the aggregate that was most highly correlated with the level of economic activity and was thus most commonly used in the execution of monetary policy. In the 1980s, the relationship between M1 and the level of economic activity broke down and M2 was more closely correlated with the level of economic activity. During this time period, M2 was given more importance in monetary policy decisions. In the early 1990s, changes in DNFD were most highly correlated with changes in economic activity and DNFD was closely monitored in policy implementation. In the mid 2000s, the Fed looks to other economic variables rather than the monetary aggregates or DNFD because the other variables were thought to be more relevant as barometers of economic activity.

M1 is the monetary aggregate that is generally used in transactions to make payments.

7. What is the current role of the monetary aggregates in the formulation and implementation of monetary policy? How and why has that role changed over time?

In the mid 2000s, the Fed uses the monetary aggregates as informational variables only, and not in the direct implementation and formulation of monetary policy. The role has changed over time because the relationship between the aggregates and the level of economic activity has broken down and hence the use of the aggregates as barometers of economic activity is not reliable.

8. Why is the debt of financial institutions excluded from DNFD?

Financial institutions borrow funds from net lenders for the purpose of relending the funds to net borrowers. The reason why DNFD excludes the debt of financial institutions is that including such debt would be double counting. For example, suppose Bank X borrows surplus funds from small passbook savers and relends them to Jack to buy his first home. If the debt of the financial institution is counted, both the mortgage debt of Jack and the debt of Bank X to the passbook saver would be included in the aggregate.

9. What is the payments mechanism? What changes are occurring in this mechanism? Why are they occurring? How do smart cards differ from stored value cards?

The “payments mechanism” is the means by which transactions are consummated: that is, how money is transferred in an exchange. With technological advances, the means by which payments are made is dramatically changing. More and more payments are now being made electronically rather than with cash or instructions written on a paper check. For example, the use of debit cards, smart cards, stored-value cards, point-of-sale terminals, and other electronic transfers are all ways to make payments electronically. These changes are occurring because technological advances have made it cheaper to make payments electronically rather than using cash or checks.

Stored-value cards are plastic cards that have a certain amount of funds embedded on a magnetic strip. Smart cards are much more sophisticated in that they have a microprocessor chip embedded in them that stores information and usually includes a digital signature. Like stored-value cards, they are used to make payments.

10. Zoto is a remote island that has experienced rapid economic growth. In contrast, Zaha is an island where growth has been sluggish and the level of economic activity remains low. How could the existence of money have affected these two outcomes?

Since money facilitates economic development, one would suspect that Zoto has a sophisticated and advanced “money,” while Zaha relies mainly on barter. The existence of money could explain the differing growth rates.

11. Is it necessary for the collection of assets called money to perform all of the functions described in the chapter? Why or why not?

What distinguishes money from all else in the financial system is that it serves as a generally acceptable means of payment. It is necessary for the collection of assets called money to perform all of the functions described in this chapter, more or less. For example, if an asset does not function as a means of payment (medium of exchange) then it definitely is not acceptable in trade and is not money. Something that becomes generally acceptable as a means of payment will necessarily also function as a store of value. However, in a mild inflationary environment, narrowly defined money (M1) may not be a good store of value but may still be used as a means of payment. If inflation becomes very high, then the collection of assets called money will stop functioning as money. They will not be acceptable to make payments since they will lose their value very quickly due to inflation. For monetary exchange to proceed in an orderly fashion, the collection of assets called money must also serve as a unit of account.

12. In what ways is money similar to other financial assets? How can money be distinguished from other financial assets?

Money is similar to other financial assets because it is a store of value and has value. Money is different because it is the only financial asset that also serves as a means of payment and unit of account.

13. Your friend took a class in money and banking two years ago and recalls that currency in the hands of the public is in M1. Explain to your friend why currency in the hands of the public is also included in M2 and M3.

M2 and M3 include everything in M1 plus other less liquid, near money assets. Since currency in the hands of the public is in M1, it is therefore in M2 and M3 also.

Answers to Analytical Questions

14. Would each of the following assets be good “money”? Why or why not?

- a. **Gold**
- b. **Dirt**
- c. **Corn**
- d. **Oil (often called liquid gold)**

- a. Even though it is scarce and durable, gold would not be good “money” because it is too heavy to carry around to be conveniently used as a means of payment.
- b. Dirt would not be good “money” because it is not scarce.
- c. Corn would not be good “money” because it is not scarce and can be easily reproduced. Also, after a while corn rots, so it would not serve as a good store of value.
- d. Even though it is scarce, oil would not be good “money” because it would be inconvenient to carry around as a means of payment.

15. In which monetary aggregate(s) is each of the following assets included?

- a. **Small savings and time deposits (,\$100,000)**
- b. **Money market deposit accounts**
- c. **Currency in the hands of the public**
- d. **Checkable deposits**
- e. **Individual money market mutual funds**
- f. **Institutional money market mutual funds**
- g. **Large time deposits**
- h. **Travelers’ checks**

- a. M2 and M3
- b. M2 and M3
- c. M1, M2, and M3
- d. M1, M2, and M3
- e. M2 and M3
- f. M3
- g. M3
- h. M1, M2 and M3