

Chapter 2

Money and the Payments System

■ Overview

Students generally find a discussion of the definition and measurement of money to be very useful. The chapter carefully describes the fundamental role that money plays in facilitating exchange and, thereby, allowing for specialization. Students often find it interesting to consider why an economy needs to use money at all. A careful discussion of the disadvantages of barter and advantages of specialization is worthwhile. The chapter also includes a thorough discussion of the definitions of money, which are then applied in the remainder of the chapter when the measurement of money is discussed.

Students are often surprised to learn that there is no one definition of the money supply. An important point to highlight is that the financial innovations of the 1970s, 1980s and 1990s have made it very difficult to come up with a narrow definition of the medium of exchange. The problems that this difficulty poses for policy should be mentioned at this point. The modification of what's included in *M2* and the elimination of *M3* in 2006 further illustrates how the measurement of money continues to be refined.

Also introduced in this chapter is the idea of the payments system—the mechanism for conducting transactions. The chapter discusses the evolution of the payments system from precious metals to currency and checks to electronic funds transfer services—such as automated teller machines (ATMs) and debit cards. A point worth emphasizing is that the efficiency of payments system—as measured by the cost of settling transactions—is important for the economy.

■ Outline

I. Meeting the Needs of Exchange with Money

- A) Money makes exchange more efficient and allows for **specialization**.
- B) The type of exchange known as **barter**, where goods and services are exchanged directly for other goods and services is inefficient because it incurs high **transactions costs**.
- C) Voluntary trade may be sidestepped by using **government allocation** to distribute goods and services, but this is unlikely to be successful because it ignores market forces.
- D) Money has four key functions that make it the most efficient means of trade:
 - 1. Money acts as a **medium of exchange**, which is anything that is generally accepted as payment for goods and services or in the settlement of debts.
 - 2. Money is a **unit of account**, which is a way of measuring value in the economy in terms of money.
 - 3. Money is a **store of value**, in that it is an **asset** or a thing of value that can be owned and is, therefore, a component of **wealth**.
 - 4. Money offers a **standard of deferred value** in credit transactions.

- E) The value of money depends on its **purchasing power**.
 - 1. A decline in the purchasing power of money is known as **inflation** and an increase in the purchasing power of money is known as **deflation**.
 - 2. Changes in the value of money over time can be computed using a **price index**, which is a summary statistic that reflects changes in the price of a group of goods and services relative to the price in a base year.
- F) There are five criteria a good must meet to be suitable as a medium of exchange:
 - 1. The good must be acceptable to most traders.
 - 2. It should be of standardized quality.
 - 3. It should be durable.
 - 4. It should be valuable relative to its weight.
 - 5. It should be divisible.

II. The Payments System

- A) The mechanism for conducting transactions in an economy is known as a **payments system**.
- B) **Definitive money** is money that does not have to be converted into a more basic medium of exchange.
- C) Physical goods, such as gold and silver, when used to accomplish trade are called **commodity money**.
- D) A system in which the definitive money is money authorized by a **central bank** or governmental body as **legal tender**—that is, the money must be accepted to discharge debts and tax payments must be in cash or checks denominated in that money—is known as a **fiat money** system.
- E) In the United States, Federal Reserve Notes are fiat money.
- F) **Checks** are promises to pay definitive money on demand and are drawn on money deposited with a financial institution.
 - 1. Settling transactions with checks requires more steps than settling transactions with cash.
 - 2. Checks are less liquid than cash and there is a cost to using checks.
- G) Settling and clearing transactions can now be done with computers in **electronic funds transfer systems**.
 - 1. Debit cards and automated teller machines are examples of electronic funds transfer devices.
 - 2. Eighty percent of the dollar value of transactions among financial institutions is conducted electronically.
- H) The efficiency of the payments system reduces the cost of settling transactions.

III. Measuring the Money Supply

- A) Economists have developed different definitions of the money supply based on the differences in the assets included as money.
- B) During the 1980s the Federal Reserve adapted its definitions of money—known as **monetary aggregates**—in response to financial innovation.
- C) The narrowest definition of the money supply is **M1**, which includes currency, traveler's checks, and checking account deposits.
- D) **M2** includes the assets in **M1** plus short-term investment accounts.

- E) The Fed ceased collecting data on **M3**, a broader measure of money, in 2006.
- F) In addition to monetary aggregates, the Fed reports information on debt as a store of value.
- G) Since the 1980s, economists and policymakers have considered **M2** the best measure of the money supply, though developments in the financial system have complicated the attempt to accurately define money.
- H) The monetary aggregates move broadly together over long periods of time, although there have been significant differences in their movements during certain periods.

■ Answers to End-of-Chapter Questions

Review Questions

1. To serve as money, they must generally be accepted as means of payment. Your acceptance of dollar bills and checks as money is based on your belief that others will accept them.
2. Specialization increases productivity.
3. In a barter system, there are too many prices, and nonstandard goods complicate pricing. Trade requires a double coincidence of wants.
4. The main functions of money are to serve as a medium of exchange (generally accepted means of payment), unit of account (all prices expressed in monetary terms), store of value (transferring purchasing power over time), and standard of deferred payment (unit of account for credit arrangements).
5. Commodity money has real uses (e.g., gold, silver); fiat money has no intrinsic value.
6. Money facilitates a credit system by serving as a standard of deferred payment. No, legal money should also be useful as a medium of exchange for credit contracts to be established in monetary terms.
7. A payments system is a mechanism for conducting transactions. If the payments system became less efficient, the costs to the economy would be fewer and more costly transactions, that is, losing gains from specialization.
8. Inflation reduces the value of money; fewer transactions using money may occur if inflation is high; at very high rates of inflation, households and firms might return to barter.
9. No. Houses, bonds, and stocks are also stores of value. There is an advantage to money's being a store of value, because after trading for it, a person can hold it; otherwise, something else that is also a store of value is likely to become money.

10. The “store of value” and “standard of deferred payment” roles of money are adversely affected by inflation.
11. The definitions of the money supply range from narrow, *M1*, to the broader, *M2*. The definitions of the money supply can be used for different purposes and have varied over time in their usefulness for predicting future movements in prices and output.
12. Credit cards do not represent a medium of exchange or a short-term store of value.

Analytical Problems

13. Whether caused by inflation or deflation, changes in the purchasing power of money affect money’s usefulness as a store of value and as a standard of deferred payment.
14. From the point of view of an individual, a \$20 Federal Reserve Note is more convenient than a \$20 gold coin—it has a higher value relative to its weight. From the point of view of the government, a \$20 Federal Reserve Note has a low cost to produce relative to its face value.
15. The reason is convenience; transactions costs of running to the bank all the time are avoided.
16. The *M1* aggregate falls by \$500, and *M2* is unchanged. (Note: You might guess that *M1* falls by \$500 and *M2* rises by \$500, but this response ignores the fact that *M1* is part of *M2*).
17. Not necessarily; if prices rose more than 10%, your real income has fallen.
18. Owing to deflation, the value of stones rises. Owing to inflation, the value of stones rises.
19. In Friedmanian, bad money drives out the good; people will spend the new crowns and hoard the old crowns.
20. The value of money in Germany relative to the value of money in Italy should rise. If exchange rates are fixed, the purchasing power of Germans buying Italian goods should increase, and the purchasing power of Italians buying German goods should decline. Flexible exchange rates are flexible should have no effect on purchasing power.
21. Liquidity indicates the ease with which an asset can be converted to definitive money. Ranking from most to least liquid: dollar bill, checking account, money-market mutual fund, passbook savings account, corporate stock, gold, house.
22. *M2*, *M1*, (U.S. savings bonds are part of *debt*, but not part of any of the monetary aggregates), *M1*, *M2*, *M1*.
23. Solve the equation $195.3/100 = 100/x$; $x = \text{new CPI for 1982-84} = 51.3$.
24. The value of 2003 real GDP in terms of 1993 dollars is $(12,480/112)(100) = \$11,142.9$ billion.

Data Questions

25. (a) 1992: \$6,318.9 billion; 2002: \$10,446.2 billion. (b) 1992: 91.84; 2002: 110.66. (c) 1992: \$6,880.3 billion; 2002: \$9,439.9 billion. (d) real GDP rose by 37.2%.
26. CPI values: 1950 = 24.1, 1960 = 29.6, 1970 = 38.8, 1980 = 82.4, 1990 = 130.7; Inflation: 1950s = 23%, 1960s = 31%, 1970s = 112%, 1980s = 59%.
27. GDP deflator values: 1950 = n.a., 1960 = 23.3, 1970 = 30.6, 1980 = 60.4, 1990 = 93.6; Inflation: 1950s = n.a., 1960s = 31%, 1970s = 97%, 1980s = 55%.

PPI values: 1950 = 28.2, 1960 = 33.4, 1970 = 39.3, 1980 = 88.0, 1990 = 119.2. Inflation: 1950s = 18%, 1960s = 18%, 1970s = 124%, 1980s = 35%.
28. Possible reasons for the large currency holdings include currency held abroad, underground activity, and destroyed money.

■ Additional Essay and Discussion Questions

1. For many years prior to 1933, the paper money of the United States was redeemable for gold. What are some of the advantages and some of the disadvantages of having a paper currency that is convertible into gold?
2. During the late nineteenth century many farmers in the United States pressed for the federal government to mint coins out of silver as well as out of gold. Why would farmers take this position? (Hint: Are farmers more likely to be borrowers or lenders?)
3. Arguably, payments systems have become less costly over time. Explain how each of the following transitions from one type of payment system to another reduced costs: from barter to commodity money; from commodity money to fiat money; from fiat money to checks; from checks to electronic funds.
4. If inflation has the negative effect of reducing the purchasing power of money, why do governments allow inflation to occur?
5. Why is the Fed experimenting with hybrid definitions of the money supply? If a definition of the money supply is to be useful for policy purposes, what characteristics should it have?
6. Many economists believe that the consumer price index overstates the true inflation rate. Why might some groups be in favor of adjusting the CPI to make it a more accurate reflection of inflation, while other groups might favor retaining it as it is?