Chapter 27: The Monetary System
[Chapter 15: The Monetary System]

Questions for Review: Answers

1. Money is different from other assets in the economy because it is the most liquid asset available. Other assets vary widely in their liquidity.

2. Commodity money is money with intrinsic value, like gold, which can be used for purposes other than as a medium of exchange. Fiat money is money without intrinsic value; it has no value other than its use as a medium of exchange. Our economy today uses fiat money.

3. Current ~~Demand~~ deposits are balances in bank accounts that depositors can access on demand simply by writing a check. They should be included in the stock of money because they can be used to buy goods and services.

4. If the RBA ~~Fed~~ wants to increase the supply of money with open-market operations, it purchases ~~U.S.~~ government bonds on the open market. The purchase increases the number of dollars in the hands of the public, thus raising the money supply.

5. The discount rate is the interest rate on loans that the RBA ~~Federal Reserve~~ makes to banks. If the RBA ~~Fed~~ raises the discount rate, fewer banks will borrow from the RBA ~~Fed~~, so banks' reserves will be lower, and thus the money supply will be lower.

6. Reserve requirements are regulations on the minimum amount of reserves that banks must hold against deposits. An increase in reserve requirements raises the reserve ratio, lowers the money multiplier, and decreases the money supply.

7. The RBA ~~Fed~~ can't control the money supply perfectly because: (1) the RBA ~~Fed~~ doesn't control the amount of money that households choose to hold as deposits in banks; and (2) the Fed does not control the amount that bankers choose to lend. The actions of households and banks affect the money supply in ways the Fed can't perfectly control or predict.

Problems and Applications: Answers

1. a. A Aus $1 ~~U.S. penny~~ is money in the Aus ~~U.S.~~ economy because it is used as a medium of exchange to buy goods or services, it serves as a unit of account because prices in

stores are listed in terms of dollars and cents, and it serves as a store of value for anyone who holds it over time.

b. A Mexican Indian rupee peso is not money in the ~~U.S.~~ AUS economy, because it is not used as a medium of exchange, and prices aren't given in terms of pesos, so it isn't a unit of account. It could serve as a store of value, though.

c. A Picasso painting isn't money, because you can't exchange it for goods or services, and prices aren't given in terms of Picasso paintings. It does, however, serve as a store of value.

d. A plastic credit card is similar to money, but represents deferred payment, rather that immediate payment. So credit cards don't fully represent the medium of exchange function of money. Nor are they really stores of value, since they represent short-term loans rather than being an asset like currency.

2. a. It would be difficult to run the economy using the "Sw~~o~~apper's Column" instead of money because it requires finding a double coincidence of wants. Money works efficiently because it requires satisfying people's needs on just one side of each transaction; you buy something for money and sell something else for money. With money, you don't have to buy something from someone who wants something you're selling.

b. The "Sw~~o~~apper's Column" probably exists so that people can avoid paying taxes on things they buy and sell.

3. For an asset to be useful as a medium of exchange, it must be widely accepted (so all transactions can be made in terms of it), recognized easily as money (so people can perform transactions easily and quickly), divisible (so people can provide change), and difficult to counterfeit (so people won't print their own money). That's why nearly all countries use paper money with fancy designs and coins for smaller denominations.

For an asset to be useful as a store of value, it must be something that maintains its value over time and something that can be sold when money is needed. In addition to currency, financial assets (like stocks and bonds) and physical assets (like real estate and art) make good stores of value.

4. a. If there were an easy way to make limestone wheels, the people on Yap would make additional wheels as long as the monetary value of the wheels was greater than the cost of producing the wheels. The result would be that people would make their own money, so there would be too much money produced. Most

likely, people would stop accepting the wheels as money and switch to some other asset as a medium of exchange.

b. If someone in the United States discovered an easy way to counterfeit hundred-dollar bills, they could flood the country with counterfeit currency, thus reducing its value. The result might be a switch to a different type of currency that could prevent the counterfeiting.

5. When your uncle repays a $100 loan from Tenth National Bank (TNB) by writing a check from his TNB checking account, the result is a change in the assets and liabilities of both your uncle and TNB, as shown in these T-accounts:

Your uncle

Assets	Liabilities
Before:	
Checking account $100	Loans $100
**	
After:	
Checking account $ 0	Loans $ 0

Tenth National Bank

Assets	Liabilities
Before:	
Loans $100	Deposits $100
**	
After:	
Loans $0	Deposits $ 0

By paying off the loan, your uncle simply eliminated the outstanding loans using the assets in his checking account. Your uncle's wealth hasn't changed; he simply has fewer assets and fewer liabilities.

6. a. Here is BSB's T-account:

Beleaguered State Bank

Assets	Liabilities
Reserves $25 million Loans $225 million	Deposits $250 million

b. When BSB's largest depositor withdraws $10 million in cash and BSB reduces its loans outstanding to maintain the same reserve ratio, its T-account is now:

Beleaguered State Bank

Assets	Liabilities
Reserves $24 million Loans $216 million	Deposits $240 million

c. Since BSB is cutting back on its loans, other banks will find themselves short of reserves and they may also cut back on their loans as well.

d. BSB may find it difficult to cut back on its loans immediately, since it can't force people to pay off loans. Instead, it can stop making new loans. But for a time it might find itself with more loans than it wants. It could try to attract additional deposits to get additional reserves, or borrow from another bank or from the Fed.

7. If you take $100 that you held as currency and put it into the banking system, then the total amount of deposits in the banking system increases by $1,000, since a reserve ratio of 10 percent means the money multiplier is 1/.10 = 10. Thus the money supply increases by $900, since deposits increase by $1,000 but currency declines by $100.

8. With a required reserve ratio of 10 percent, the money multiplier could be as high as 1/.10 = 10, if banks held no excess reserves and people don't keep some additional currency. So the maximum increase in the money supply from a $10 million open-market purchase is $100 million. The smallest possible increase is $0, if all the money was held by banks as excess reserves.

9. a. If the required reserve ratio is 5 percent, then First National Bank's required reserves are $500,000 x .05 = $25,000. Since their total reserves are $100,000, they have excess reserves of $75,000.

   b. With a required reserve ratio of 5 percent, the money multiplier is 1/.05 = 20. If First National lends out its excess reserves of $75,000, the money supply will eventually increase by $75,000 x 20 = $1,500,000.

10. a. With a required reserve ratio of 10 percent and no excess reserves, the money multiplier is 1/.10 = 10. If the Fed sells $1 million of bonds, reserves will decline by $1 million and the money supply will contract by 10 x $1 million = $10 million.

    b. Banks might wish to hold excess reserves if they need to hold the reserves for their day-to-day operations, such as paying other banks for customers' transactions, making change, cashing paychecks, and so on. If banks increase excess reserves such that there's no overall change in the total reserve ratio, then the money multiplier doesn't change and there's no effect on the money stock.

11. a. With banks holding only required reserves of 10 percent, the money multiplier is 1/.10 = 10. Since reserves are $100 billion, the money stock is 10 x $100 billion = $1,000 billion.

    b. If the required reserve ratio is raised to 20 percent, the money multiplier declines to 1/.20 = 5. With reserves of $100 billion, the money stock would decline to $500 billion. Reserves would be unchanged, since all available currency would be held by banks as reserves.

12. a. If people hold all money as currency, the quantity of money is $2,000.

    b. If people hold all money as demand deposits at banks with 100 percent reserves, the quantity of money is $2,000.

    c. If people have $1,000 in currency and $1,000 in demand deposits, the quantity of money is $2,000.

d. If banks have a reserve ratio of 10 percent, the money multiplier is 1/.10 = 10. So if people hold all money as demand deposits, the quantity of money is 10 x \$2,000 = \$20,000.

e. If people hold equal amounts of currency (C) and demand deposits (D) and the money multiplier for reserves is 10, then two equations must be satisfied:
(1) C = D, so that people have equal amounts of currency and demand deposits; and (2) 10 x (\$2,000 - C) = D, so that the money multiplier (10) times the number of dollar bills that aren't being held by people (\$2,000 - C) equals the amount of demand deposits (D). Using the first equation in the second gives 10 x (\$2,000 - D) = D, or \$20,000 - 10 D = D, or \$20,000 = 11 D, so D = \$1,818.18. Then C = \$1,818.18. The quantity of money is C + D = \$3,636.36.