

Chapter 33 Study Guide

Chapter 32 explained the institutional structure of banking in the United States today, the functions that banks and the other depository institutions and money perform, and the composition of the money supply. Chapter 33 explains how banks create money—**checkable deposits**—and the factors that determine and limit the money-creating ability of commercial banks. The other depository institutions, such as thrift institutions, also create checkable deposits, but this chapter focuses on the commercial banks to simplify the discussion.

The convenient and simple device used to explain commercial banking operations and money creation is the **balance sheet**. Shown within it are the **assets, liabilities, and net worth** of commercial banks. All banking transactions affect this balance sheet. The first step to understanding how money is created is to understand how various simple and typical transactions affect the commercial bank balance sheet.

In reading this chapter, you must analyze for yourself the effect of each and every banking transaction discussed on the balance sheet. The important items in the balance sheet are checkable deposits and reserves because **checkable deposits are money**. The ability of a bank to create new checkable deposits is determined by the amount of reserves the bank has. Expansion of the money supply depends on the possession by commercial banks of excess reserves. They do not appear explicitly in the balance sheet but do appear there implicitly because **excess reserves** are the difference between the **actual reserves** and the **required reserves** of commercial banks.

Two cases—the single commercial bank and the banking system—are presented to help you build an understanding of banking and money creation. It is important to understand that the money-creating potential of a single commercial bank differs from the money-creating potential of the entire banking system. It is equally important to understand how the money-creating ability of many single commercial banks is **multiplied** and influences the **money-creating ability** of the banking system as a whole.

■ CHECKLIST

When you have studied this chapter you should be able to

- Recount the story of how goldsmiths came to issue paper money and became bankers who created money and held fractional reserves.
- Cite two significant characteristics of the fractional reserve banking system today.
- Define the basic items in a bank's balance sheet.
- Describe what happens to a bank's balance sheet when the bank is created, it buys property and equipment, and it accepts deposits.
- Explain the effects of the deposit of currency in a checking account on the composition and size of the money supply.
- Define the reserve ratio. u Compute a bank's required and excess reserves when you are given the needed balance-sheet figures.
- Explain why a commercial bank is required to maintain a reserve and why a required reserve is not sufficient to protect the depositors from losses.
- Indicate whether required reserves are assets or liabilities for commercial banks and the Federal Reserve.
- Describe how the deposit of a check drawn on one commercial bank and deposited into another will affect the reserves and excess reserves of the two banks.
- Show what happens to the money supply when a commercial bank makes a loan.

- Show what happens to the money supply when a commercial bank buys government securities.
 - Describe what would happen to a commercial bank's reserves if it made loans (or bought government securities) in an amount greater than its excess reserves.
 - State the money-creating potential of a commercial bank (the amount of money a commercial bank can safely create by lending or buying securities).
 - Explain how a commercial bank's balance sheet reflects the banker's pursuit of the two conflicting goals of profit and liquidity.
 - Explain how the federal funds market helps reconcile the goals of profits and liquidity for commercial banks.
 - State the money-creating potential of the banking system. u Explain how it is possible for the banking system to create an amount of money that is a multiple of its excess reserves when no individual commercial bank ever creates money in an amount greater than its excess reserves.
 - Define the monetary multiplier.
 - Use the monetary multiplier and the amount of excess reserves to compute the money-creating potential of the banking system.
 - Illustrate with an example using the monetary multiplier how money can be destroyed in the banking system.
 - Discuss how leverage boosts banking profits but makes the banking system less stable (*Last Word*).
-

■ CHAPTER OUTLINE

1. The United States has a ***fractional reserve banking system***. This term means that banks keep only a part or a fraction of their checkable deposits backed by cash reserves.
 - a. The history of the early goldsmiths illustrates how paper money came into use in the economy and how banks create money. The goldsmiths accepted gold as deposits and began making loans and issuing money in excess of their gold holdings.
 - b. The goldsmiths' fractional reserve system is similar to today's fractional reserve banking system, which has two significant characteristics: banks can create money in such a system and banks are subject to "panics" or "runs," and thus need government regulation.

2. The ***balance sheet*** of a single commercial bank is a statement of the *assets*, *liabilities*, and *net worth* (stock shares) of the bank at a specific time; and in the balance sheet, the bank's assets equal its liabilities plus its net worth. This balance sheet changes with various transactions.
 - a. *Transaction 1: Creating a bank.* A commercial bank is founded by selling shares of stock and obtaining cash in return. Stock is a liability and cash is an asset.
 - b. *Transaction 2: Acquiring property and equipment.* A commercial bank needs property and equipment to carry on the banking business. They are assets of the bank.
 - c. *Transaction 3: Accepting deposits.* When a bank accepts deposits of cash, the cash becomes an asset to the bank, and checkable deposit accounts that are created are a liability. The deposit of cash in the bank does not affect the total money supply. It changes only its composition by substituting checkable deposits for currency (cash) in circulation.
 - d. *Transaction 4: Depositing reserves in the Federal Reserve Bank.*
 1. Three reserve concepts are vital to an understanding of the money-creating potential of a commercial bank.
 - a. The ***required reserves***, which a bank *must* maintain at its Federal Reserve Bank (or as ***vault cash*** at the bank—which can be ignored in

- this textbook example), equal the reserve ratio multiplied by the checkable deposit liabilities of the commercial bank.
- b. The **actual reserves** of a commercial bank are its deposits at the Federal Reserve Bank (plus the vault cash, which is ignored in this textbook example).
 - c. The **excess reserves** are equal to the actual reserves less the required reserves.
2. The **reserve ratio** is the ratio of required reserves to a bank's own checkable deposit liabilities. The Fed has the authority to establish and change the ratio within limits set by Congress.
- e. *Transaction 5: Clearing a check drawn against the bank.* The writing of a check on the bank and its deposit in a second bank results in a loss of reserves (assets) and checkable deposits (liabilities) for the first bank and a gain in reserves and deposits for the second bank.
3. A **single commercial bank** in a multibank system can create money as the following two additional transactions show.
 - a. *Transaction 6: Granting a loan.* When a single commercial bank grants a loan to a borrower, its balance sheet changes. Checkable deposit liabilities are increased by the amount of the loan and the loan value is entered as an asset. In essence, the borrower gives an IOU (a promise to repay the loan) to the bank, and in return the bank creates money by giving the borrower checkable deposits. The bank has "monetized" the IOU and created money. When the borrower writes a check for the amount of the loan to pay for something and that check clears, then the checkable deposits are reduced by the amount of that check. A bank lends its funds only in an amount equal to its pre-loan excess reserves because it fears the loss of reserves to other commercial banks in the economy.
 - b. *Transaction 7: Buying government securities.* When a bank buys government securities, it increases its own checkable deposit liabilities and therefore the supply of money by the amount of the securities purchase. The bank assets increase by the amount of the securities it now holds. The bank buys securities only in an amount equal to its excess reserves because it fears the loss of reserves to other commercial banks in the economy.
 - c. An individual commercial bank balances its desire for profits (which result from the making of loans and the purchase of securities) with its desire for liquidity or safety (which it achieves by having excess reserves or vault cash). The federal funds market allows banks with excess reserves to lend funds overnight to banks that are short of required reserves. The interest rate paid on the overnight loans is the **federal funds rate**.
 4. The ability of a **banking system** composed of many individual commercial banks to lend and create money is a multiple (greater than 1) of its excess reserves and is equal to the excess reserves of the banking system multiplied by the checkable-deposit (or monetary) multiplier.
 - a. The banking system as a whole can do this even though no single commercial bank ever lends an amount greater than its excess reserves because the banking system, unlike a single commercial bank, does not lose reserves. If a bank receives a deposit of currency, it increases its checkable deposits. This change increases the amount of excess reserves the bank has available for loan. If a loan is made on these excess reserves, then it creates additional checkable deposits that, when spent, may be deposited in another bank. That other bank now has additional excess reserves and can increase its lending, and so the process continues.

5. The **monetary multiplier** is equal to the reciprocal of the required reserve ratio for checkable deposits. The maximum expansion of checkable deposits is equal to the initial excess reserves in the banking system times the monetary multiplier. To illustrate, if the required reserve ratio were 20 percent, then the monetary multiplier would be 5 (or 1 divided by 0.20). If excess reserves in the banking system were \$80 million, then a maximum of \$400 million in money could be created (or 5 times \$80 million).
 - a. The money-creating process of the banking system can also be reversed. When loans are paid off, money is destroyed.

 6. *Last Word* (Banking, Leverage, and Financial Instability). Leverage is the use of borrowed money for a financial investment to increase the potential return. It can work both ways. While it can increase the amount of profits earned, it also can increase the amount of losses incurred. The losses can contribute to financial instability. Banks use leverage when they invest the money from depositors or the money they obtained from issuing bonds. The reasons banks make such risky investments with depositors' money is that they can earn greater profits. When the investments go bad, however, the losses are greatly increased and threaten the solvency of a bank. Large banks also are willing to accept this risk because they know that they are likely to be bailed out if they run into trouble. Attempts to restrict bank leverage have been thwarted by lobbying government officials, so that leaves it up to bank regulators to monitor and control bank risk-taking, which too can produce uncertain outcomes.
-

■ HINTS AND TIPS

1. Note that several terms are used interchangeably in this chapter: "commercial bank" (or "bank") is sometimes called "thrift institution" or "depository institution."

2. A bank's balance sheet must balance. The bank's assets are claimed either by owners (net worth) or by non-owners (liabilities). $Assets = Liabilities + Net\ worth$.

3. Make a running balance sheet in writing for yourself as you read about each of the eight transactions in the text for the Wahoo Bank. Then determine if you understand the material by telling yourself (or a friend) the story for each transaction without using the text.

4. The **maximum amount of checkable-deposit expansion** is determined by multiplying two factors: the excess reserves by the monetary multiplier. Each factor, however, is affected by the required reserve ratio. The monetary multiplier is calculated by dividing 1 by the required reserve ratio. Excess reserves are determined by multiplying the required reserve ratio by the amount of new deposits. Thus, a change in the required reserve ratio will change the monetary multiplier and the amount of excess reserves. For example, a required reserve ratio of 25% gives a monetary multiplier of 4. For \$100 in new money deposited, required reserves are \$25 and excess reserves are \$75. The maximum checkable-deposit expansion is \$300 ($4 \times \75). If the reserve ratio drops to 20%, the monetary multiplier is 5 and excess reserves are \$80, so the maximum checkable-deposit expansion is \$400. Both factors have changed.

5. Be aware that the monetary multiplier can result in *money destruction* as well as money creation in the banking system. You should know how the monetary multiplier reinforces effects in one direction or the other.

■ **IMPORTANT TERMS**

fractional reserve banking system

balance sheet

required reserves

vault cash

actual reserves

excess reserves

reserve ratio

federal funds rate

monetary multiplier