**Faculty of Commerce**

**Accounting Department**

# Accounting Studies in English
# Second Year

**Edited By**

**Dr. Walaa Sayed Mohamed**

**2021/2022**

# Chapter (1)

# Accounting for Merchandising Activities

# Accounting for Merchandising Activities

## (1) Introduction:

A merchandising company earns net income by buying and selling merchandise, which consists of goods that the company acquires for the purpose of reselling them to customers. To achieve a net income, the revenue from selling the merchandise needs to exceed not only the cost of the merchandise sold to customers but also the company's other operating expenses for the reporting period.

A merchandising company's balance sheet includes a current asset called inventory and its income statement includes the item called cost of goods sold. Both of these items are affected by the company's merchandise transactions. The amount of the asset on the balance sheet equals the cost of the inventory on hand at the end of the fiscal year. The amount of the cost of goods sold is the cost of the merchandise that was sold to customers during the year. Two different inventory accounting systems may be used to collect information about the cost of the inventory on hand and the cost of goods sold. They are described in the following paragraphs.

## (2) Periodic and Perpetual Inventory Systems:

The two basic types of inventory accounting systems are called perpetual and periodic. As suggested by their name, perpetual inventory systems maintain a continuous record of the amount of inventory on hand. This perpetual record is maintained by adding the cost of each newly purchased item to the inventory account and subtracting the cost of each sold item from the account. When an item is sold, its cost is recorded in the Cost of Goods Sold account. Whenever posting is up to date during the period, users of perpetual systems

can determine the cost of merchandise on hand by looking at the balance of the inventory account. They can also determine the cost of goods sold thus far during the period by referring to the Cost of Goods Sold account.

Before computers were used widely, perpetual systems were generally applied only by businesses that made a limited number of sales each day, such as automobile dealers or major appliance stores. Because there were relatively few transactions, the perpetual accounting system could be operated efficiently. However, the availability of improved technology has greatly increased the number of companies that use perpetual systems.

Under periodic inventory systems, a company does not continuously update its records of the quantity and cost of goods that are on hand or sold. Instead, the company simply records the cost of new merchandise in a temporary Purchases account. When merchandise is sold, only the revenue is recorded. Then, when financial statements are prepared, the company takes a physical inventory by counting the quantities of merchandise on hand. The total cost is determined by relating the quantities to records that show each item's original cost. This total cost is then used to determine the cost of goods sold. Traditionally, periodic systems were used by companies such as drug and department stores that sold large quantities of low-valued items. Without computers and scanners, it was not feasible for accounting systems to track such small items as toothpaste, pain killers, clothing, and housewares through the inventory and into the customers' hands. Although perpetual systems are now more affordable, they are still not used by all merchandising companies. As a result, it will be helpful for you to understand how periodic systems work. In addition, studying periodic systems will help you visualize the flow of

goods through inventory without having to learn the more complicated sequence of journal entries used in perpetual systems.

To determine the cost of goods sold under a periodic inventory system, the following steps are necessary:

**1.** Determine the cost of goods on hand at the beginning of the accounting period.

**2.** Add to it the cost of goods purchased.

**3.** Subtract the cost of goods on hand at the end of the accounting period.

### 2.1. Advantages of the Perpetual System:

Companies that sell merchandise with high unit values, such as automobiles, furniture, and major home appliances, have traditionally used perpetual systems. The growing use of computers and electronic scanners has enabled many more companies to install perpetual inventory systems. The perpetual inventory system is so named because the accounting records continuously perpetually—show the quantity and cost of the inventory that should be on hand at any time.

A perpetual inventory system provides better control over inventories than a periodic system. Since the inventory records show the quantities that should be on hand, the company can count the goods at any time to see whether the amount of goods actually on hand agrees with the inventory records. If shortages are uncovered, the company can investigate immediately. Although a perpetual inventory system requires both additional clerical work and expense to maintain the subsidiary records, a computerized system can minimize this cost. Much of **Amazon.com**'s success is attributed to its sophisticated inventory system.

Some businesses find it either unnecessary or uneconomical to invest in a sophisticated, computerized perpetual inventory system such as Amazon's. Many small merchandising businesses find that basic accounting software provides some of the essential benefits of a perpetual inventory system. Also, managers of some small businesses still find that they can control their merchandise and manage day-to-day operations using a periodic inventory system.

## 2.2. Record purchases under a perpetual inventory system:

Companies purchase inventory using cash or credit (on account). They normally record purchases when they receive the goods from the seller. Every purchase should be supported by business documents that provide written evidence of the transaction. Each cash purchase should be supported by a canceled check or a cash register receipt indicating the items purchased and amounts paid. Companies record cash purchases by an increase in Inventory and a decrease in Cash.

A **purchase invoice** should support each credit purchase. This invoice indicates the total purchase price and other relevant information. However, the purchaser does not prepare a separate purchase invoice. Instead, the purchaser uses as a purchase invoice a copy of the sales invoice sent by the seller. To better understand the contents of this invoice, identify these items:

1. Seller
2. Invoice date
3. Purchaser
4. Salesperson
5. Credit terms
6. Freight terms
7. Goods sold: catalog number, description, quantity, price per unit
8. Total invoice amount

For example, Sauk Stereo (the buyer) uses as a purchase invoice and the sales invoice prepared by PW Audio Supply (the seller). Sauk Stereo makes the following journal entry to record its purchase by $ 3,800 from PW Audio Supply. The entry increases (debits) Inventory and increases (credits) Accounts Payable.

| | | | |
|---|---|---|---|
| May 4 | Inventory | 3,800 | |
| | Accounts Payable | | 3,800 |
| | (To record goods purchased on account from PW Audio Supply) | | |

Under the perpetual inventory system, companies record purchases of merchandise for sale in the Inventory account. Thus, **REI** would increase (debit) Inventory for clothing, sporting goods, and anything else purchased for resale to customers. Not all purchases are debited to Inventory, however. Companies record purchases of assets acquired for use and not for resale, such as supplies, equipment, and similar items, as increases to specific asset accounts rather than to Inventory. For example, to record the purchase of materials used to make shelf signs or for cash register receipt paper, REI would increase (debit) Supplies.

### 2.2.1. Freight Costs:

The sales agreement should indicate who—the seller or the buyer—is to pay for transporting the goods to the buyer's place of business. When a common carrier such as a railroad, trucking company, or airline transports the goods, the carrier prepares a freight bill in accord with the sales agreement.

Freight terms are expressed as either FOB shipping point or FOB destination.

The letters FOB mean **free on board**. Thus, **FOB shipping point** means that the seller places the goods free on board the carrier, and the buyer pays the freight costs. Conversely, **FOB destination** means that the seller places the goods free on board to the buyer's place of business, and the seller pays the freight.

### 2.2.1.1. Freight Costs Incurred by the Buyer:

When the buyer incurs the transportation costs, these costs are considered part of the cost of purchasing inventory. Therefore, the buyer debits (increases) the Inventory account. For example, if Sauk Stereo (the buyer) pays Public Carrier Co. $150 for freight charges on May 6, the entry on Sauk Stereo's books is:

| | | | |
|---|---|---|---|
| May 6 | Inventory | 150 | |
| | Cash | | 150 |
| | (To record payment of freight on goods purchased) | | |

Thus, any freight costs incurred by the buyer are part of the cost of merchandise purchased. The reason: Inventory cost should include all costs to acquire the inventory, including freight necessary to deliver the goods to the buyer. Companies recognize these costs as cost of goods sold when inventory is sold.

### 2.2.1.2. Freight Costs Incurred by the Seller:

In contrast, freight costs incurred by the seller on outgoing merchandise are an operating expense to the seller. These costs increase an expense account titled Freight-Out (sometimes called Delivery Expense). For example, if the

freight terms had required PW Audio Supply (the seller) to pay the freight charges, the entry by PW Audio Supply would be:

| | | | |
|---|---|---|---|
| May 4 | Freight-Out (or Delivery Expense) | 150 | |
| | Cash | | 150 |
| | (To record payment of freight on goods sold) | | |

When the seller pays the freight charges, the seller will usually establish a higher invoice price for the goods to cover the shipping expense.

### 2.2.2. Purchase Returns and Allowances:

A purchaser may be dissatisfied with the merchandise received because the goods are damaged or defective, of inferior quality, or do not meet the purchaser's specifications. In such cases, the purchaser may return the goods to the seller for credit if the sale was made on credit, or for a cash refund if the purchase was for cash. This transaction is known as a **purchase return**. Alternatively, the purchaser may choose to keep the merchandise if the seller is willing to grant an allowance (deduction) from the purchase price. This transaction is known as a **purchase allowance**.

Assume that Sauk Stereo returned goods costing $300 to PW Audio Supply on May 8. The following entry by Sauk Stereo for the returned merchandise decreases (debits) Accounts Payable and decreases (credits) Inventory.

| | | | |
|---|---|---|---|
| May 8 | Accounts Payable | 300 | |
| | Inventory | | 300 |
| | (To record return of goods purchased from PW Audio Supply) | | |

Because Sauk Stereo increased Inventory when the goods were received, Inventory is decreased when Sauk Stereo returns the goods. Suppose instead that Sauk Stereo chose to keep the goods after being granted a $50 allowance (reduction in price). It would reduce (debit) Accounts Payable and reduce (credit) Inventory for $50.

### 2.2.3. Purchase Discounts:

The credit terms of a purchase on account may permit the buyer to claim a cash discount for prompt payment. The buyer calls this cash discount a **purchase discount**. This incentive offers advantages to both parties. The purchaser saves money, and the seller is able to shorten the operating cycle by converting the accounts receivable into cash.

**Credit terms** specify the amount of the cash discount and time period in which it is offered. They also indicate the time period in which the purchaser is expected to pay the full invoice price. Credit terms 2/10, n/30 is read "two-ten, net thirty." This means that the buyer may take a 2% cash discount on the invoice price, less ("net of") any returns or allowances, if payment is made within 10 days of the invoice date (the **discount period**). Otherwise, the invoice price, less any returns or allowances, is due 30 days from the invoice date. Alternatively, the discount period may extend to a specified number of days following the month in which the sale occurs. For example, 1/10 EOM (end of month) means that a 1% discount is available if the invoice is paid

within the first 10 days of the next month. When the seller elects not to offer a cash discount for prompt payment, credit terms will specify only the maximum time period for paying the balance due. For example, the invoice may state the time period as n/30, n/60, or n/10 EOM. This means, respectively, that the buyer must pay the net amount in 30 days, 60 days, or within the first 10 days of the next month.

When the buyer pays an invoice within the discount period, the amount of the discount decreases Inventory. Why? Because companies record inventory at cost and, by paying within the discount period, the buyer has reduced its cost. To illustrate, assume Sauk Stereo pays the balance due of $3,500 (gross invoice price of $3,800 less purchase returns and allowances of $300) on May 14, the last day of the discount period. The cash discount is $70 ($3,500 x 2%), and Sauk Stereo pays $3,430 ($3,500 ─ $70). The entry Sauk Stereo makes to record its May 14 payment decreases (debits) Accounts Payable by the amount of the gross invoice price, reduces (credits) Inventory by the $70 discount, and reduces (credits) Cash by the net amount owed.

| | | | |
|---|---|---|---|
| May 14 | Accounts Payable | 3,500 | |
| | Cash | | 3,430 |
| | Inventory | | 70 |
| | (To record payment within discount period) | | |

If Sauk Stereo failed to take the discount and instead made full payment of $3,500 on June 3, it would debit Accounts Payable and credit Cash for $3,500 each.

| | | | |
|---|---|---|---|
| June 3 | Accounts Payable | 3,500 | |
| | Cash | | 3,500 |
| | (To record payment with no discount taken) | | |

A merchandising company usually should take all available discounts. Passing up the discount may be viewed as **paying interest** for use of the money. For example, passing up the discount offered by PW Audio Supply would be comparable to Sauk Stereo paying an interest rate of 2% for the use of $3,500 for 20 days. This is the equivalent of an annual interest rate of approximately 36.5% (2% x 365/20). Obviously, it would be better for Sauk Stereo to borrow at prevailing bank interest rates of 6% to 10% than to lose the discount.

**Example:**

On September 5, De La Hoya Company buys merchandise on account from Junot Diaz Company. The selling price of the goods is $1,500, and the cost to Diaz Company was $800. On September 8, De La Hoya returns defective goods with a selling price of $200.

Record the transactions on the books of De La Hoya Company.

**Solution:**

| | | | |
|---|---|---|---|
| Sept. 5 | Inventory | 1,500 | |
| | Accounts Payable | | 1,500 |
| | (To record goods purchased on account) | | |
| 8 | Accounts Payable | 200 | |
| | Inventory | | 200 |
| | (To record return of defective goods) | | |

## 2.3. Record sales under a perpetual inventory system:

In accordance with the revenue recognition principle, companies record sales revenue when the performance obligation is satisfied. Typically, the performance obligation is satisfied when the goods transfer from the seller to the buyer. At this point, the sales transaction is complete, and the sales price established.

Sales may be made on credit or for cash. A business document should support every sales transaction, to provide written evidence of the sale. Cash register documents provide evidence of cash sales. A **sales invoice** provides support for a credit sale. The original copy of the invoice goes to the customer, and the seller keeps a copy for use in recording the sale. The invoice shows the date of sale, customer name, total sales price, and other relevant information. The seller makes two entries for each sale. **The first entry records the sale**: The seller increases (debits) Cash (or Accounts Receivable if a credit sale) and also increases (credits) Sales Revenue. **The second entry records the cost of the merchandise sold**: The seller increases (debits) Cost of Goods Sold and also decreases (credits) Inventory for the cost of those goods. As a

result, the Inventory account will always show the amount of inventory that should be on hand.

To illustrate a credit sales transaction, PW Audio Supply records its May 4 sale of $3,800 to Sauk Stereo as follows (assume the merchandise cost PW Audio Supply $2,400).

| | | | |
|---|---|---|---|
| May 4 | Accounts Receivable | 3,800 | |
| | Sales Revenue | | 3,800 |
| | (To record credit sale to Sauk Stereo) | | |

| | | | |
|---|---|---|---|
| 4 | Cost of Goods Sold | 2,400 | |
| | Inventory | | 2,400 |
| | (To record cost of merchandise sold to Sauk Stereo) | | |

For internal decision-making purposes, merchandising companies may use more than one sales account. For example, PW Audio Supply may decide to keep separate sales accounts for its sales of TVs, Blu-ray players, and headsets. **REI** might use separate accounts for camping gear, children's clothing, and ski equipment—or it might have even more narrowly defined accounts. By using separate sales accounts for major product lines, rather than a single combined sales account, company management can more closely monitor sales trends and respond more strategically to changes in sales patterns. For example, if TV sales are increasing while Blu-ray player sales are decreasing, PW Audio Supply might reevaluate both its advertising and pricing policies on these items to ensure they are optimal. On its income

statement presented to outside investors, a merchandising company normally would provide only a single sales figure—the sum of all of its individual sales accounts. This is done for two reasons. First, providing detail on all of its individual sales accounts would add considerable length to its income statement. Second, companies do not want their competitors to know the details of their operating results. However, **Microsoft** recently expanded its disclosure of revenue from three to five types. The reason: The additional categories enabled financial statement users to better evaluate the growth of the company's consumer and Internet businesses.

### 2.3.1. Sales Returns and Allowances:

We now look at the "flip side" of purchase returns and allowances, which the seller records as **sales returns and allowances**. These are transactions where the seller either accepts goods back from the buyer (a return) or grants a reduction in the purchase price (an allowance) so the buyer will keep the goods. PW Audio Supply's entries to record credit for returned goods involve:
(1) an increase (debit) in Sales Returns and Allowances (a contra account to Sales Revenue) and a decrease (credit) in Accounts Receivable at the $300 selling price.
(2) an increase (debit) in Inventory (assume a $140 cost) and a decrease (credit) in Cost of Goods Sold, as shown below (assuming that the goods were not defective).

| | | | |
|---|---|---|---|
| May 8 | Sales Returns and Allowances | 300 | |
| | Accounts Receivable | | 300 |
| | (To record credit granted to Sauk Stereo for returned goods) | | |

| | | | |
|---|---|---|---|
| 8 | Inventory | 140 | |
| | Cost of Goods Sold | | 140 |
| | (To record cost of goods returned) | | |

If Sauk Stereo returns goods because they are damaged or defective, then PW Audio Supply's entry to Inventory and Cost of Goods Sold should be for the fair value of the returned goods, rather than their cost. For example, if the returned goods were defective and had a fair value of $50, PW Audio Supply would debit Inventory for $50 and credit Cost of Goods Sold for $50.

What happens if the goods are not returned but the seller grants the buyer an allowance by reducing the purchase price? In this case, the seller debits Sales Returns and Allowances and credits Accounts Receivable for the amount of the allowance. An allowance has no impact on Inventory or Cost of Goods Sold. Sales Returns and Allowances is a **contra revenue account** to Sales Revenue. This means that it is offset against a revenue account on the income statement. The normal balance of Sales Returns and Allowances is a debit. Companies use a contra account, instead of debiting Sales Revenue, to disclose in the accounts and in the income statement the amount of sales returns and allowances. Disclosure of this information is important to management. Excessive returns and allowances may suggest problems inferior merchandise, inefficiencies in filling orders, errors in billing customers, or delivery or shipment mistakes. Moreover, a decrease (debit) recorded directly to Sales Revenue would obscure the relative importance of sales returns and allowances as a percentage of sales. It also could distort comparisons between total sales in different accounting periods.

### 2.3.2. Sales Discounts:

As mentioned in our discussion of purchase transactions, the seller may offer the customer a cash discount—called by the seller a **sales discount**—for the prompt payment of the balance due. Like a purchase discount, a sales discount is based on the invoice price less returns and allowances, if any. The seller increases (debits) the Sales Discounts account for discounts that are taken. For example, PW Audio Supply makes the following entry to record the cash receipt on May 14 from Sauk Stereo within the discount period.

| | | | |
|---|---|---|---|
| May 14 | Cash | 3,430 | |
| | Sales Discounts | 70 | |
| | Accounts Receivable | | 3,500 |
| | (To record collection within 2/10, n/30 discount period from Sauk Stereo) | | |

Like Sales Returns and Allowances, Sales Discounts is a contra revenue account to Sales Revenue. Its normal balance is a debit. PW Audio Supply uses this account, instead of debiting Sales Revenue, to disclose the amount of cash discounts taken by customers. If Sauk Stereo does not take the discount, PW Audio Supply increases (debits) Cash for $3,500 and decreases (credits) Accounts Receivable for the same amount at the date of collection.

**Example:**

On September 5, De La Hoya Company buys merchandise on account from Junot Diaz Company. The selling price of the goods is $1,500, and the cost to Diaz Company was $800. On September 8, De La Hoya returns defective

goods with a selling price of $200 and a fair value of $30. Record the transactions on the books of Junot Diaz Company.

**Solution:**

| | | | |
|---|---|---|---|
| Sept. 5 | Accounts Receivable | 1,500 | |
| | Sales Revenue | | 1,500 |
| | (To record credit sale) | | |
| 5 | Cost of goods sold | 800 | |
| | Inventory | | 800 |
| | (To record cost of goods sold on account) | | |
| 8 | Sales Returns and Allowances | 200 | |
| | Accounts Receivable | | 200 |
| | (To record credit granted for receipt of returned goods) | | |
| 8 | Inventory | 30 | |
| | Cost of Goods Sold | | 30 |
| | (To record fair value of goods returned) | | |

**Notes:**

1- Seller records both the sale and the cost of goods sold at the time of the sale.

2- When goods are returned, the seller records the return in a contra account, Sales Returns and Allowances, and reduces Accounts Receivable.

3- Any goods returned increase Inventory and reduce Cost of Goods Sold. Defective or damaged inventory is recorded at fair value (scrap value).

## (3) Applying Steps of the Accounting Cycle to a Merchandising Company:

### 3.1. Adjusting Entries:

A merchandising company generally has the same types of adjusting entries as a service company. However, a merchandiser using a perpetual system will require one additional adjustment to make the records agree with the actual inventory on hand. Here's why. At the end of each period, for control purposes, a merchandising company that uses a perpetual system will take a physical count of its goods on hand. The company's unadjusted balance in Inventory usually does not agree with the actual amount of inventory on hand. The perpetual inventory records may be incorrect due to recording errors, theft, or waste. Thus, the company needs to adjust the perpetual records to make the recorded inventory amount agree with the inventory on hand. This involves adjusting Inventory and Cost of Goods Sold.

For example, suppose that PW Audio Supply has an unadjusted balance of $40,500 in Inventory. Through a physical count, PW Audio Supply determines that its actual merchandise inventory at December 31 is $40,000. The company would make an adjusting entry as follows.

| | | | |
|---|---|---|---|
| Dec.31 | Cost of Goods Sold | 500 | |
| | Inventory | | 500 |
| | (To adjust inventory to physical count) | | |

### 3.2. Closing Entries:

A merchandising company, like a service company, closes to Income Summary all accounts that affect net income. In journalizing, the company credits all temporary accounts with debit balances, and debits all temporary accounts with credit balances, as shown below for PW Audio Supply. Note that PW Audio Supply closes Cost of Goods Sold to Income Summary.

| | | | |
|---|---|---|---|
| Dec.31 | Sales Revenue | 480,000 | |
| | Income Summary | | 480,000 |
| | (To close income statement accounts with credit balances) | | |

| | | | |
|---|---|---|---|
| Dec.31 | Income Summary | 450,000 | |
| | Sales Returns and Allowances | | 12,000 |
| | Sales Discounts | | 8,000 |
| | Cost of Goods Sold | | 316,000 |
| | Salaries and Wages Expense | | 64,000 |
| | Freight-Out | | 7,000 |
| | Advertising Expense | | 16,000 |
| | Utilities Expense | | 17,000 |
| | Depreciation Expense | | 8,000 |
| | Insurance Expense | | 2,000 |
| | (To close income statement accounts with debit balances) | | |

| | | | |
|---|---|---|---|
| Dec.31 | Income Summary | 30,000 | |
| | Owner's Capital | | 30,000 |
| | (To close net income to capital) | | |

| | | | |
|---|---|---|---|
| Dec.31 | Owner's Capital | 15,000 | |
| | Owner's Drawings | | 15,000 |
| | (To close drawings to capital) | | |

After PW Audio Supply has posted the closing entries, all temporary accounts have zero balances. Also, Owner's Capital has a balance that is carried over to the next period.

**Example:**

The trial balance of Celine's Sports Wear Shop at December 31 shows Inventory $25,000, Sales Revenue $162,400, Sales Returns and Allowances $4,800, Sales Discounts $3,600, Cost of Goods Sold $110,000, Rent Revenue $6,000, Freight-Out $1,800, Rent Expense $8,800, and Salaries and Wages Expense $22,000. Prepare the closing entries for the above accounts.

**Solution:**

| | | | |
|---|---|---|---|
| Dec.31 | Sales Revenue | 162,400 | |
| | Rent Revenue | 6,000 | |
| | Income Summary | | 168,400 |
| | (To close accounts with credit balances) | | |

| | | | |
|---|---|---|---|
| 31 | Income Summary | 151,000 | |
| | Cost of Goods Sold | | 110,000 |
| | Sales Returns and Allowances | | 4,800 |
| | Sales Discounts | | 3,600 |
| | Freight-Out | | 1,800 |
| | Rent Expense | | 8,800 |
| | Salaries and Wages Expense | | 22,000 |
| | (To close accounts with debit balances) | | |

**Notes:**

1-Close all temporary accounts with credit balances to Income Summary by debiting these accounts.

2- Close all temporary accounts with debit balances, except drawings, to Income Summary by crediting these accounts.

## (4) Using Financial Statements by Merchandising Company:

### 4.1. Multiple-Step Income Statement:

The **multiple-step income statement** is so named because it shows several steps in determining net income. Two of these steps relate to the company's principal operating activities. A multiple-step statement also distinguishes between operating and nonoperating activities. Finally, the statement highlights intermediate components of income and shows subgroupings of expenses.

#### 4.1.1. Income Statement Presentation of Sales:

The multiple-step income statement begins by presenting sales revenue. It then deducts contra revenue accounts—sales returns and allowances, and sales discounts—from sales revenue to arrive at net sales. The following

illustration presents the sales section for PW Audio Supply, using assumed data.

| PW Audio Supply | | |
|---|---|---|
| **Income Statement (partial)** | | |
| **Sales** | | |
| Sales revenue | | $ 480,000 |
| Less: Sales returns and allowances | $ 12,000 | |
| Sales discounts | 8,000 | 20,000 |
| **Net sales** | | **$ 460,000** |

### 4.1.2. Gross Profit:

Companies deduct cost of goods sold from sales revenue to determine **gross profit**. For this computation, companies use **net sales** (which takes into consideration Sales Returns and Allowances and Sales Discounts) as the amount of sales revenue. On the basis of the sales data in the following illustration (net sales of $460,000) and cost of goods sold under the perpetual inventory system (assume $316,000), PW Audio Supply's gross profit is $144,000, computed as follows.

| | |
|---|---|
| Net sales | $ 460,000 |
| Cost of goods sold | 316,000 |
| **Gross profit** | **$144,000** |

We also can express a company's gross profit as a percentage, called the gross profit rate. To do so, we divide the amount of gross profit by net sales. For PW Audio Supply, the gross profit rate is 31.3%, computed as follows.

| **Gross Profit** | ÷ | **Net Sales** | = | **Gross Profit Rate** |
|---|---|---|---|---|
| $144,000 | ÷ | $460,000 | = | 31.3% |

Analysts generally consider the gross profit rate to be more useful than the gross profit amount. The rate expresses a more meaningful (qualitative) relationship between net sales and gross profit. For example, a gross profit of $1,000,000 may sound impressive. But if it is the result of a gross profit rate of only 7%, it is not so impressive. The gross profit rate tells how many cents of each sales dollar go to gross profit.

Gross profit represents the merchandising profit of a company. It is not a measure of the overall profitability because operating expenses are not yet deducted. But managers and other interested parties closely watch the amount and trend of gross profit. They compare current gross profit with amounts reported in past periods. They also compare the company's gross profit rate with rates of competitors and with industry averages. Such comparisons provide information about the effectiveness of a company's purchasing function and the soundness of its pricing policies.

### 4.1.3. Operating Expenses and Net Income:

**Operating expenses** are the next component in measuring net income for a merchandising company. They are the expenses incurred in the process of earning sales revenue. These expenses are similar in merchandising and service companies. At PW Audio Supply, operating expenses were $114,000. The company determines its net income by subtracting operating expenses from gross profit. Thus, net income is $30,000, as shown below.

| | |
|---|---|
| Gross profit | $144,000 |
| **Operating expenses** | **114,000** |
| Net income | $ 30,000 |

### 4.1.4. Nonoperating Activities:

**Nonoperating activities** consist of various revenues and expenses and gains and losses that are unrelated to the company's main line of operations. When nonoperating items are included, the label "**Income from operations**" (or "Operating income") precedes them. This label clearly identifies the results of the company's normal operations, an amount determined by subtracting cost of goods sold and operating expenses from net sales. The results of nonoperating activities are shown in the categories "**Other revenues and gains**" and "**Other expenses and losses**." the following illustration lists examples of each.

**Examples of Other Revenues and Gains:**

- **Interest revenue** from notes receivable and marketable securities.
- **Dividend revenue** from investments in common stock.
- **Rent revenue** from subleasing a portion of the store.
- **Gain** from the sale of property, plant, and equipment.

**Examples of Other Expenses and Losses:**

- **Interest expense** on notes and loans payable.
- **Casualty losses** from recurring causes, such as vandalism and accidents.
- **Loss** from the sale or abandonment of property, plant, and equipment.
- **Loss** from strikes by employees and suppliers.

Merchandising companies report the nonoperating activities in the income statement immediately after the company's operating activities. The following illustration shows these sections for PW Audio Supply, using assumed data. The distinction between operating and nonoperating activities is crucial to many external users of financial data. These users view operating income as sustainable and many nonoperating activities as non-recurring. Therefore,

when forecasting next year's income, analysts put the most weight on this year's operating income and less weight on this year's nonoperating activities.

**PW Audio Supply**
**Income Statement**
**For the Year Ended December 31,2017**

| | | |
|---|---|---|
| **Sales** | | |
| Sales revenue | | $ 480,000 |
| Less: Sales returns and allowances | $ 12,000 | |
| Sales discounts | 8,000 | 20,000 |
| Net sales | | 460,000 |
| **Cost of goods sold** | | 316,000 |
| **Gross profit** | | 144,000 |
| **Operating expenses** | | |
| Salaries and wages expense | 64,000 | |
| Utilities expense | 17,000 | |
| Advertising expense | 16,000 | |
| Depreciation expense | 8,000 | |
| Freight-out | 7,000 | |
| Insurance expense | 2,000 | |
| Total operating expenses | | 114,000 |
| **Income from operations** | | 30,000 |
| **Other revenues and gains** | | |
| Interest revenue | 3,000 | |
| Gain on disposal of plant assets | 600 | 3,600 |
| **Other expenses and losses** | | |
| Interest expense | 1,800 | |
| Casualty loss from vandalism | 200 | 2,000 |
| **Net income** | | $ 31,600 |

## 4.2. Single-Step Income Statement:

Another income statement format is the **single-step income statement**. The statement is so named because only one step—subtracting total expenses from total revenues—is required in determining net income. In a single-step statement, all data are classified into two categories:

(1) **Revenues**, which include both operating revenues and other revenues and gains.

(2) **Expenses**, which include cost of goods sold, operating expenses, and other expenses and losses.

The following illustration shows a single-step statement for PW Audio Supply.

**PW Audio Supply**

**Income Statement**

**For the Year Ended December 31,2017**

| | | |
|---|---|---|
| **Revenues** | | |
| Net sales | | $460,000 |
| Interest revenue | | 3,000 |
| Gain on disposal of plant assets | | 600 |
| Total revenues | | 463,600 |
| **Expenses** | | |
| Cost of goods sold | $316,000 | |
| Operating expenses | 114,000 | |
| Interest expense | 1,800 | |
| Casualty loss from vandalism | 200 | |
| Total expenses | | 432,000 |
| **Net income** | | $ 31,600 |

There are two primary reasons for using the single-step format.

(1) A company does not realize any type of profit or income until total revenues exceed total expenses, so it makes sense to divide the statement into these two categories.

(2) The format is simpler and easier to read.

### 4.3. Classified Balance Sheet:

In the balance sheet, merchandising companies report inventory as a current asset immediately below accounts receivable. Companies generally list current asset items in the order of their closeness to cash (liquidity). Inventory is less close to cash than accounts receivable because the goods must first be sold and then collection made from the customer. The following illustration presents the assets section of a classified balance sheet for PW Audio Supply.

**PW Audio Supply**
**Balance Sheet (partial)**
**December 31,2017**
**Assets**

| | | |
|---|---|---|
| Current assets | | |
| Cash | | $ 9,500 |
| Accounts receivable | | 16,100 |
| **Inventory** | | 40,000 |
| Prepaid insurance | | 1,800 |
| Total current assets | | 67,400 |
| Property, plant, and equipment | | |
| Equipment | $80,000 | |
| Less: Accumulated depreciation—equipment | 24,000 | 56,000 |
| Total assets | | $123,400 |

**Example:**

You are presented with the following list of accounts from the adjusted trial balance for merchandiser Gorman Company. Indicate in which financial statement and under what classification each of the following would be reported.

Accounts Payable
Accounts Receivable
Accumulated Depreciation—Buildings
Accumulated Depreciation—Equipment
Advertising Expense
Buildings
Cash
Depreciation Expense
Equipment
Freight-Out
Gain on Disposal of Plant Assets
Insurance Expense
Interest Expense
Interest Payable
Inventory
Land
Notes Payable (due in 3 years)
Owner's Capital (beginning balance)
Owner's Drawings
Property Taxes Payable
Salaries and Wages Expense
Salaries and Wages Payable
Sales Returns and Allowances
Sales Revenue
Utilities Expense

## Solution:

| Account | Financial Statement | Classification |
|---|---|---|
| Accounts Payable | Balance Sheet | Current liabilities |
| Accounts Receivable | Balance Sheet | Current assets |
| Accumulated Depreciation-Buildings | Balance sheet | Property, plant, and equipment |
| Accumulated Depreciation-Equipment | Balance sheet | Property, plant, and equipment |
| Advertising Expense | Income Statement | Operating expenses |
| Buildings | Balance sheet | Property, plant, and equipment |
| Cash | Balance sheet | Current assets |
| Depreciation Expense | Income Statement | Operating expenses |
| Equipment | Balance sheet | Property, plant, and equipment |
| Freight-Out | Income statement | Operating expenses |

| Account | Financial Statement | Classification |
|---|---|---|
| Gain on Disposal of Plant Assets | Income statement | Other revenues and gains |
| Insurance Expense | Income Statement | Operating expenses |
| Interest Expense | Income Statement | Other expenses and losses |
| Interest Payable | Balance Sheet | Current liabilities |
| Inventory | Balance Sheet | Current assets |
| Land | Balance sheet | Property, plant, and equipment |
| Notes Payable (due in 3 years) | Balance sheet | Long-term liabilities |
| Owner's Capital | Owner's equity statement | Beginning balance |
| Owner's Drawings | Owner's equity statement | Deduction section |
| Property Taxes Payable | Balance Sheet | Current liabilities |
| Salaries and Wages Expense | Income Statement | Operating expenses |
| Salaries and Wages Payable | Balance Sheet | Current liabilities |
| Sales Returns and Allowances | Income statement | Sales |
| Sales Revenue | Income statement | Sales |
| Utilities Expense | Income Statement | Operating expenses |

## (5) Recording Purchases and Sales under Periodic Inventory System:

As described before, companies may use one of two basic systems of accounting for inventories:

(1) the perpetual inventory system or

(2) the periodic inventory system.

One key difference between the two systems is the point at which the company computes cost of goods sold.

## 5.1. Determining Cost of Goods Sold under a Periodic System:

Determining cost of goods sold is different when a periodic inventory system is used rather than a perpetual system. As you have seen, a company using a perpetual system makes an entry to record cost of goods sold and to reduce inventory each time a sale is made. A company using a periodic system does not determine cost of goods sold until the end of the period. At the end of the period, the company performs a count to determine the ending balance of inventory. It then calculates cost of goods sold by subtracting ending inventory from the cost of goods available for sale. Goods available for sale is the sum of beginning inventory plus purchases, as shown in the following illustration.

| | |
|---|---|
| | Beginning Inventory |
| + | Cost of Goods Purchased |
| | Cost of Goods Available for Sale |
| − | Ending Inventory |
| | **Cost of Goods Sold** |

Another difference between the two approaches is that the perpetual system directly adjusts the Inventory account for any transaction that affects inventory (such as freight costs, returns, and discounts). The periodic system does not do this. Instead, it creates different accounts for purchases, freight costs, returns, and discounts. These various accounts are shown in the following illustration, which presents the calculation of cost of goods sold for PW Audio Supply using the periodic approach.

**PW Audio Supply**

**Cost of Goods Sold**

**For the Year Ended December 31,2017**

| | | | |
|---|---|---|---|
| Cost of goods sold | | | |
| **Inventory, January 1** | | | **$ 36,000** |
| Purchases | | $325,000 | |
| Less: Purchase returns and | | | |
| allowances | $10,400 | | |
| Purchase discounts | 6,800 | 17,200 | |
| Net purchases | | 307,800 | |
| Add: Freight-in | | 12,200 | |
| **Cost of goods purchased** | | | **320,000** |
| Cost of goods available for sale | | | 356,000 |
| **Less: Inventory, December 31** | | | **40,000** |
| **Cost of goods sold** | | | **$316,000** |

## 5.2. Recording Merchandise Transactions:

In a periodic inventory system, companies record revenues from the sale of merchandise when sales are made, just as in a perpetual system. Unlike the perpetual system, however, companies do not attempt on the date of sale to record the cost of the merchandise sold. Instead, they take a physical inventory count at the end of the period to determine:

(1) the cost of the merchandise then on hand.

(2) the cost of the goods sold during the period.

And, under a periodic system, companies record purchases of merchandise in the Purchases account rather than in the Inventory account. Also, in a periodic system, purchase returns and allowances, purchase discounts, and freight costs on purchases are recorded in separate accounts.

To illustrate the recording of merchandise transactions under a periodic inventory system, we will use purchase/sales transactions between PW Audio Supply and Sauk Stereo, as illustrated for the perpetual inventory system in this chapter.

### 5.2.1 Recording Purchases of Merchandise:

On the basis of the sales invoice and receipt of the merchandise ordered from PW Audio Supply, Sauk Stereo records the $3,800 purchase as follows.

| | | | |
|---|---|---|---|
| May 4 | Purchases | 3,800 | |
| | Accounts Payable | | 3,800 |
| | (To record goods purchased on account from PW Audio Supply) | | |

Purchases is a temporary account whose normal balance is a debit.

**Freight Costs:**

When the purchaser directly incurs the freight costs, it debits the account Freight- In (or Transportation-In). For example, if Sauk Stereo pays Public Carrier Co. $150 for freight charges on its purchase from PW Audio Supply on May 6, the entry on Sauk Stereo's books is:

| | | | |
|---|---|---|---|
| May 6 | Freight-In (Transportation-In) | 150 | |
| | Cash | | 150 |
| | (To record payment of freight on goods purchased) | | |

Like Purchases, Freight-In is a temporary account whose normal balance is a debit. Freight-In is part of cost of goods purchased. The reason is that cost of goods purchased should include any freight charges necessary to bring the goods to the purchaser. Freight costs are not subject to a purchase discount. Purchase discounts apply only to the invoice cost of the merchandise.

**Purchase Returns and Allowances:**

Sauk Stereo returns $300 of goods to PW Audio Supply and prepares the following entry to recognize the return.

| | | | |
|---|---|---|---|
| May 8 | Accounts Payable | 300 | |
| | Purchase Returns and Allowances | | 300 |
| | (To record return of goods purchased from PW Audio Supply) | | |

Purchase Returns and Allowances is a temporary account whose normal balance is a credit.

**Purchase Discounts:**

On May 14, Sauk Stereo pays the balance due on account to PW Audio Supply, taking the 2% cash discount allowed by PW Audio Supply for payment within 10 days. Sauk Stereo records the payment and discount as follows.

| | | | |
|---|---|---|---|
| May 14 | Accounts Payable ($3,800 - $300) | 3,500 | |
| | Purchase Discounts ($3,500 x .02) | | 70 |
| | Cash | | 3,430 |
| | (To record payment within the discount period) | | |

Purchase Discounts is a temporary account whose normal balance is a credit.

### 5.2.2. Recording Sales of Merchandise:

The seller, PW Audio Supply, records the sale of $3,800 of merchandise to Sauk Stereo on May 4 as follows.

| | | | |
|---|---|---|---|
| May 4 | Accounts Receivable | 3,800 | |
| | Sales Revenue | | 3,800 |
| | (To record credit sales to Sauk Stereo) | | |

### Sales Returns and Allowances:

To record the returned goods received from Sauk Stereo on May 8, PW Audio Supply records the $300 sales return as follows.

| | | | |
|---|---|---|---|
| May 8 | Sales Returns and Allowances | 300 | |
| | Accounts Receivable | | 300 |
| | (To record credit granted to Sauk Stereo for returned goods) | | |

**Sales Discounts:**

On May 14, PW Audio Supply receives payment of $3,430 on account from Sauk Stereo. PW Audio Supply honors the 2% cash discount and records the payment of Sauk Stereo's account receivable in full as follows.

| | | | |
|---|---|---|---|
| May 14 | Cash | 3,430 | |
| | Sales Discounts ($3,500 x .02) | 70 | |
| | Accounts Receivable ($3,800 - $300) | | 3,500 |
| | (To record collection within 2/10, n/30 discount period from Sauk Stereo) | | |

### 5.2.3. Journalizing and Posting Closing Entries:

For a merchandising company, like a service company, all accounts that affect the determination of net income are closed to Income Summary. Data for the preparation of closing entries may be obtained from the income statement. In journalizing, all debit column amounts are credited, and all credit columns amounts are debited. To close the merchandise inventory in a periodic inventory system:

**1.** The beginning inventory balance is debited to Income Summary and credited to Inventory.

**2.** The ending inventory balance is debited to Inventory and credited to Income Summary.

The two entries for PW Audio Supply are as follows.

| | | | |
|---|---|---|---|
| Dec. 31 | Income Summary | 36,000 | |
| | Inventory | | |
| | (To close beginning inventory) | | 36,000 |
| 31 | Inventory | 40,000 | |
| | Income Summary | | 40,000 |
| | (To record ending inventory) | | |

**Glossary Review:**

**Contra revenue account:** An account that is offset against a revenue account on the income statement.

**Cost of goods sold:** The total cost of merchandise sold during the period.

**FOB destination:** Freight terms indicating that the seller places the goods free on board to the buyer's place of business, and the seller pays the freight.

**FOB shipping point:** Freight terms indicating that the seller places goods free on board the carrier, and the buyer pays the freight costs.

**Gross profit:** The excess of net sales over the cost of goods sold.

**Income from operations:** Income from a company's principal operating activity; determined by subtracting cost of goods sold and operating expenses from net sales.

**Multiple-step income statement:** An income statement that shows several steps in determining net income.

**Net sales:** Sales revenue less sales returns and allowances and less sales discounts.

**Nonoperating activities:** Various revenues, expenses, gains, and losses that are unrelated to a company's main line of operations.

**Operating expenses:** Expenses incurred in the process of earning sales revenue.

**Other expenses and losses:** A nonoperating-activities section of the income statement that shows expenses and losses unrelated to the company's main line of operations.

**Other revenues and gains:** A nonoperating-activities section of the income statement that shows revenues and gains unrelated to the company's main line of operations.

**Periodic inventory system:** An inventory system under which the company does not keep detailed inventory records throughout the accounting period but determines the cost of goods sold only at the end of an accounting period.

**Perpetual inventory system:** An inventory system under which the company keeps detailed records of the cost of each inventory purchase and sale, and the records continuously show the inventory that should be on hand.

**Purchase allowance:** A deduction made to the selling price of merchandise, granted by the seller so that the buyer will keep the merchandise.

**Purchase discount:** A cash discount claimed by a buyer for prompt payment of a balance due.

**Purchase return:** A return of goods from the buyer to the seller for a cash or credit refund.

**Sales discount:** A reduction given by a seller for prompt payment of a credit sale.

**Sales revenue (Sales):** The primary source of revenue in a merchandising company.

**Single-step income statement:** An income statement that shows only one step in determining net income.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** The sales accounts that normally have a debit balance are:

(a) Sales Discounts.

(b) Sales Returns and Allowances.

(c) Both (a) and (b).

(d) Neither (a) nor (b).

**2.** A credit sale of $750 is made on June 13, terms 2/10, net/30. A return of $50 is granted on June 16. The amount received as payment in full on June 23 is:

(a) $700.

(b) $686.

(c) $685.

(d) $650.

**3.** The multiple-step income statement for a merchandising company shows each of the following features **except**:

(a) gross profit.

(b) cost of goods sold.

(c) a sales section.

(d) an investing activities section.

**4.** If sales revenues are $400,000, cost of goods sold is $310,000, and operating expenses are $60,000, the gross profit is:

**(a)** $30,000.

**(b)** $90,000.

**(c)** $340,000.

**(d)** $400,000.

**5.** Which of the following appears on both a single-step and a multiple-step income statement?

(a) Inventory.

(b) Gross profit.

(c) Income from operations.

(d) Cost of goods sold.

**6.** In determining cost of goods sold in a periodic system:

(a) purchase discounts are deducted from net purchases.

(b) freight-out is added to net purchases.

(c) purchase returns and allowances are deducted from net purchases.

(d) freight-in is added to net purchases.

**7.** If beginning inventory is $60,000, cost of goods purchased is $380,000, and ending inventory is $50,000, cost of goods sold is:

(a) $390,000.

(b) $370,000.

(c) $330,000.

(d) $420,000.

**8.** Gross profit will result if:

(a) operating expenses are less than net income.

(b) sales revenues are greater than operating expenses.

(c) sales revenues are greater than cost of goods sold.

(d) operating expenses are greater than cost of goods sold.

# Exercises

**Exercise (1):**

Prepare the journal entries to record the following transactions on Novy Company's books using a perpetual inventory system.

(a) On March 2, Novy Company sold $900,000 of merchandise to Opps Company, terms 2/10, n/30. The cost of the merchandise sold was $590,000.

(b) On March 6, Opps Company returned $90,000 of the merchandise purchased on March 2. The cost of the returned merchandise was $62,000.

(c) On March 12, Novy Company received the balance due from Opps Company.

**Exercise (2):**

At year-end, the perpetual inventory records of Gutierrez Company showed merchandise inventory of $98,000. The company determined, however, that its actual inventory on hand was $96,100. Record the necessary adjusting entry.

**Exercise (3):**

Brueser Company has the following account balances: Sales Revenue $195,000, Sales Discounts $2,000, Cost of Goods Sold $117,000, and Inventory $40,000. Prepare the entries to record the closing of these items to Income Summary.

**Exercise (4):**

Assume Kupfer Company has the following reported amounts: Sales revenue $510,000, Sales returns and allowances $15,000, Cost of goods sold $330,000, and Operating expenses $90,000. Compute the following:

(a) net sales (b) gross profit

(c) income from operations (d) gross profit rate. (Round to one decimal place.)

**Exercise (5):**

Assume that Morgan Company uses a periodic inventory system and has these account balances: Purchases $450,000, Purchase Returns and Allowances $13,000, Purchase Discounts $9,000, and Freight-In $18,000. Determine net purchases and cost of goods purchased.

**Exercise (6):**

Prepare the journal entries to record these transactions on Shabani Company's books using a periodic inventory system.

(a) On March 2, Shabani Company purchased $900,000 of merchandise from Ballas Company, terms 2/10, n/30.

(b) On March 6, Shabani Company returned $110,000 of the merchandise purchased on March 2.

(c) On March 12, Shabani Company paid the balance due to Ballas Company.

**Exercise (7):**

Information related to Kerber Co. is presented below.

1. On April 5, purchased merchandise from Wilkes Company for $23,000, terms 2/10, net/30, FOB shipping point.

2. On April 6, paid freight costs of $900 on merchandise purchased from Wilkes.
3. On April 7, purchased equipment on account for $26,000.
4. On April 8, returned damaged merchandise to Wilkes Company and was granted a $3,000 credit for returned merchandise.
5. On April 15, paid the amount due to Wilkes Company in full.

(a) Prepare the journal entries to record these transactions on the books of Kerber Co. under a perpetual inventory system.
(b) Assume that Kerber Co. paid the balance due to Wilkes Company on May 4 instead of April 15. Prepare the journal entry to record this payment.

**Exercise (8):**

On June 10, Diaz Company purchased $8,000 of merchandise from Taylor Company, FOB shipping point, terms 2/10, n/30. Diaz pays the freight costs of $400 on June 11. Damaged goods totaling $300 are returned to Taylor for credit on June 12. The fair value of these goods is $70. On June 19, Diaz pays Taylor Company in full, less the purchase discount. Both companies use a perpetual inventory system.

(a) Prepare separate entries for each transaction on the books of Diaz Company.
(b) Prepare separate entries for each transaction for Taylor Company. The merchandise purchased by Diaz on June 10 had cost Taylor $4,800.

**Exercise (9):**

The adjusted trial balance of Sang Company shows the following data pertaining to sales at the end of its fiscal year October 31, 2017: Sales Revenue $820,000, Freight-Out $16,000, Sales Returns and Allowances $25,000, and Sales Discounts $13,000.

(a) Prepare the sales section of the income statement.

(b) Prepare separate closing entries for (1) sales revenue, and (2) the contra accounts to sales revenue.

**Exercise (10):**

The trial balance of A. Wiencek Company at the end of its fiscal year, August 31, 2017, includes these accounts: Inventory $19,500; Purchases $149,000; Sales Revenue $190,000; Freight-In $5,000; Sales Returns and Allowances $3,000; Freight-Out $1,000; and Purchase Returns and Allowances $2,000. The ending inventory is $23,000.

Prepare a cost of goods sold section for the year ending August 31 (periodic inventory)

# Chapter (2)

# Accounting for Inventories

# Accounting for Inventories

**Introduction:**

Inventory is an accounting term that refers to goods that are in various stages of being made ready for sale, including:

- Finished goods (that are available to be sold)
- Work-in-progress (meaning in the process of being made)
- Raw materials (to be used to produce more finished goods)

Inventory is generally the largest current asset – items expected to sell within the next year – a company has.

In order to ensure that all accounting records are up-to-date and accurate, businesses manually take an inventory count at the end of each accounting period, which is typically quarterly or annually. Companies that do a daily inventory count are considered to take perpetual inventory, because their count is always current.

Any difference discovered between the inventory count on the company's balance sheet and what is actually on-hand is termed "shrinkage." It's the inventory that is missing, for whatever reason. Sometimes the inventory is lost, other times it is stolen.

Inventory accounting is the body of accounting that deals with valuing and accounting for changes in inventoried assets.

**GAAP** requires inventory to be properly accounted for according to a very particular set of standards, to limit the potential of overstating profit by understating inventory value. Profit is revenue minus costs. Revenue is generated by selling inventory. If the inventory value (or cost) is understated, then the profit associated with the sale of the inventory may be overstated. That can potentially inflate the company's valuation.

The other item the GAAP rules guard against is the potential for a company to overstate its value by overstating the value of inventory. Since inventory is an asset, it affects the overall value of the company. A company which is manufacturing or selling an outdated item might see a decrease in the value of its inventory. Unless this is accurately captured in the company financials, the value of the company's assets and thus the company itself might be inflated.

The main advantage of inventory accounting is to have an accurate representation of the company's financial health. However, there are some additional advantages to keeping track of the value of items through their respective production stages. Namely, inventory accounting allows businesses to assess where they may be able to increase profit margins on a product at a particular place in that product's cycle.

This can be seen most prominently in products that require exceptional time or expense in secondary stages of production. Items such as pharmaceuticals, machinery, and technology are three products that require large amounts of expense after their initial designing. By evaluating the value of the product at a certain stage—such as clinical trials or transportation of the product—a

company can adjust the variables at that stage to keep the product value the same while increasing their profit margins by decreasing expenses.

Two important steps in the reporting of inventory at the end of the accounting period are the classification of inventory based on its degree of completeness and the determination of inventory amounts.

**(1) Classifying Inventory:**

How a company classifies its inventory depends on whether the firm is a merchandiser or a manufacturer. In a **merchandising** company, such as those described before, inventory consists of many different items. For example, in a grocery store, canned goods, dairy products, meats, and produce are just a few of the inventory items on hand. These items have two common characteristics:

(1) they are owned by the company.

(2) they are in a form ready for sale to customers in the ordinary course of business. Thus, merchandisers need only one inventory classification, **merchandise inventory**, to describe the many different items that make up the total inventory.

In a **manufacturing** company, some inventory may not yet be ready for sale. As a result, manufacturers usually classify inventory into three categories: Finished goods, work in process, and raw materials. **Finished goods inventory** is manufactured items that are completed and ready for sale. **Work in process** is that portion of manufactured inventory that has been placed into the production process but is not yet complete. **Raw materials** are the basic goods that will be used in production but have not yet been placed into production.

Note that low levels of raw materials and high levels of finished goods suggest that management believes it has enough inventory on hand and production will be slowing down—perhaps in anticipation of a recession.

Conversely, high levels of raw materials and low levels of finished goods probably signal that management is planning to step up production. Many companies have significantly lowered inventory levels and costs using **just-in-time (JIT) inventory** methods. Under a just-in-time method, companies manufacture or purchase goods only when needed for use. **Dell** is famous for having developed a system for making computers in response to individual customer requests. Even though it makes each computer to meet each customer's specifications, Dell is able to assemble the computer and put it on a truck in less than 48 hours. The success of the JIT system depends on reliable suppliers. By integrating its information systems with those of its suppliers, Dell reduced its inventories to nearly zero. This is a huge advantage in an industry where products become obsolete nearly overnight. Our focus here in this chapter is on merchandise inventory.

## (2) Determining Inventory Quantities:

No matter whether they are using a periodic or perpetual inventory system, all companies need to determine inventory quantities at the end of the accounting period. If using a perpetual system, companies take a physical inventory for the following reasons:

**1.** To check the accuracy of their perpetual inventory records.

**2.** To determine the amount of inventory lost due to wasted raw materials, shoplifting, or employee theft.

Companies using a periodic inventory system take a physical inventory for **two different purposes**: to determine the inventory on hand at the balance sheet date, and to determine the cost of goods sold for the period.

Determining inventory quantities involves two steps: (1) taking a physical inventory of goods on hand and (2) determining the ownership of goods.

### 2.1. Taking a Physical Inventory:

Companies take a physical inventory at the end of the accounting period. Taking a physical inventory involves actually counting, weighing, or measuring each kind of inventory on hand. An inventory count is generally more accurate when goods are not being sold or received during the counting. Consequently, companies often "take inventory" when the business is closed or when business is slow.

### 2.2. Determining Ownership of Goods:

One challenge in computing inventory quantities is determining what inventory a company owns. To determine ownership of goods, two questions must be answered:

Do all of the goods included in the count belong to the company?

Does the company own any goods that were not included in the count?

**Goods in transit** A complication in determining ownership is goods in transit (on board a truck, train, ship, or plane) at the end of the period. The company may have purchased goods that have not yet been received, or it may have sold goods that have not yet been delivered. To arrive at an accurate count, the company must determine ownership of these goods.

Goods in transit should be included in the inventory of the company that has legal title to the goods. Legal title is determined by the terms of the sale as follows:

**1.**When the terms are **FOB (free on board) shipping point**, ownership of the goods passes to the buyer when the public carrier accepts the goods from the seller.

**2.** When the terms are **FOB destination**, ownership of the goods remains with the seller until the goods reach the buyer.

If goods in transit at the statement date are ignored, inventory quantities may be seriously miscounted. Assume, for example, that Hargrove Company has 20,000 units of inventory on hand on December 31. It also has the following goods in transit:

**1.** Sales of 1,500 units shipped December 31 FOB destination.

**2.** Purchases of 2,500 units shipped FOB shipping point by the seller on December 31.

Hargrove has legal title to both the 1,500 units sold and the 2,500 units purchased. If the company ignores the units in transit, it would understate inventory quantities by 4,000 units (1,500 + 2,500).

Note that inaccurate inventory counts affect not only the inventory amount shown on the balance sheet but also the cost of goods sold calculation on the income statement.

In some lines of business, it is common to hold the goods of other parties and try to sell the goods for them for a fee, but without taking ownership of the goods. These are called consigned goods. For example, you might have a used car that you would like to sell. If you take the item to a dealer, the dealer might be willing to put the car on its lot and charge you a commission if it is sold. Under this agreement, the dealer would not take ownership of the car, which would still belong to you. Therefore, if an inventory count were taken, the car would not be included in the dealer's inventory because the dealer does not own it.

Many car, boat, and antique dealers sell goods on consignment to keep their inventory costs down and to avoid the risk of purchasing an item that they will not be able to sell. Today, even some manufacturers are making consignment agreements with their suppliers in order to keep their inventory levels low.

**Example:**

Hasbeen Company completed its inventory count. It arrived at a total inventory value of $200,000. As a new member of Hasbeen's accounting department, you have been given the information listed below. Discuss how this information affects the reported cost of inventory.

**1.** Hasbeen included in the inventory goods held on consignment for Falls Co., costing $15,000.

**2.** The company did not include in the count purchased goods of $10,000 which were in transit (terms: FOB shipping point).

**3.** The company did not include in the count sold inventory with a cost of $12,000 which was in transit (terms: FOB shipping point).

**Solution:**

The goods of $15,000 held on consignment should be deducted from the inventory count. The goods of $10,000 purchased FOB shipping point should be added to the inventory count. Sold goods of $12,000 which were in transit FOB shipping point should not be included in the ending inventory. Thus, inventory should be carried at $195,000 ($200,000 - $15,000 + $10,000).

## (3) Applying Inventory Cost Flow Methods and their Financial Effects:

Inventory is accounted for at cost. Cost includes all expenditures necessary to acquire goods and place them in a condition ready for sale. For example,

freight costs incurred to acquire inventory are added to the cost of inventory, but the cost of shipping goods to a customer are a selling expense.

After a company has determined the quantity of units of inventory, it applies unit costs to the quantities to compute the total cost of the inventory and the cost of goods sold. This process can be complicated if a company has purchased inventory items at different times and at different prices.

For example, assume that Crivitz TV Company purchases three identical 50-inch TVs on different dates at costs of $720, $750, and $800. During the year, Crivitz sold two sets at $1,200 each. These facts are summarized below:

**Purchases**

| | | | |
|---|---|---|---|
| February 3 | 1 TV | at | $720 |
| March 5 | 1 TV | at | $750 |
| May 22 | 1 TV | at | $800 |

**Sales**

| | | | |
|---|---|---|---|
| June 1 | 2 TVs | for | $2,400 ($1,200 x 2) |

We will discuss alternative costing methods available to Crivitz.

### 3.1. Specific Identification:

If Crivitz can identify which particular units it sold and which are still in ending inventory, it can use the **specific identification method** of inventory costing. For example, if Crivitz sold the TVs it purchased on February 3 and May 22, then its cost of goods sold is $1,520 ($720 + $800), and its ending inventory is $750. Using this method, companies can accurately determine ending inventory and cost of goods sold.

Specific identification requires that companies keep records of the original cost of each individual inventory item. Historically, specific identification was

possible only when a company sold a limited variety of high-unit-cost items that could be identified clearly from the time of purchase through the time of sale. Examples of such products are cars, pianos, or expensive antiques.

Today, bar coding, electronic product codes, and radio frequency identification make it theoretically possible to do specific identification with nearly any type of product. The reality is, however, that this practice is still relatively rare. Instead, rather than keep track of the cost of each particular item sold, most companies make assumptions, called **cost flow assumptions**, about which units were sold.

### 3.2. Cost Flow Assumptions:

Because specific identification is often impractical, other cost flow methods are permitted. These differ from specific identification in that they assume flows of costs that may be unrelated to the physical flow of goods. There are three assumed cost flow methods:

1. First-in, first-out (FIFO)
2. Last-in, first-out (LIFO)
3. Average-cost

There is no accounting requirement that the cost flow assumption be consistent with the physical movement of the goods. Company management selects the appropriate cost flow method.

To demonstrate the three cost flow methods, we will use a periodic inventory system. We assume a periodic system because very few companies use perpetual LIFO, FIFO, or average cost to cost their inventory and related cost of goods sold. Instead, companies that use perpetual systems often use an assumed cost (called a standard cost) to record cost of goods sold at the time of sale. Then, at the end of the period when they count their inventory, they

recalculate cost of goods sold using periodic FIFO, LIFO, or average-cost and adjust cost of goods sold to this recalculated number.

To illustrate the three inventory cost flow methods, we will use the data for Houston Electronics' Astro condensers, shown in the following illustration.

**Houston Electronics**

**Astro Condensers**

| Date | Explanation | Units | Unit Cost | Total Cost |
|---|---|---|---|---|
| Jan. 1 | Beginning inventory | 100 | $10 | $ 1,000 |
| Apr. 15 | Purchase | 200 | 11 | 2,200 |
| Aug. 24 | Purchase | 300 | 12 | 3,600 |
| Nov. 27 | Purchase | 400 | 13 | 5,200 |
| | Total units available for sale | 1,000 | | $12,000 |
| | Units in ending inventory | 450 | | |
| | Units sold | 550 | | |

The cost of goods sold formula in a periodic system is:

**(Beginning Inventory + Purchases) ─ Ending Inventory = Cost of Goods Sold**

Houston Electronics had a total of 1,000 units available to sell during the period (beginning inventory plus purchases). The total cost of these 1,000 units is $12,000, referred to as cost of goods available for sale. A physical inventory taken at December 31 determined that there were 450 units in ending inventory. Therefore, Houston sold 550 units (1,000 ─ 450) during the period. To determine the cost of the 550 units that were sold (the cost of goods

sold), we assign a cost to the ending inventory and subtract that value from the cost of goods available for sale. The value assigned to the ending inventory will depend on which cost flow method we use. No matter which cost flow assumption we use, though, the sum of cost of goods sold plus the cost of the ending inventory must equal the cost of goods available for sale—in this case, $12,000.

### 3.2.1. First-in, First-out (Fifo):

The **first-in, first-out (FIFO) method** assumes that the earliest goods purchased are the first to be sold. Fifo often parallels the actual physical flow of merchandise. That is, it generally is good business practice to sell the oldest units first. Under the FIFO method, therefore, the costs of the earliest goods purchased are the first to be recognized in determining cost of goods sold. (This does not necessarily mean that the oldest units are sold first, but that the costs of the oldest units are recognized first. In a bin of picture hangers at the hardware store, for example, no one really knows, nor would it matter, which hangers are sold first. The following illustration shows the allocation of the cost of goods available for sale at Houston Electronics under Fifo.

**Cost of Goods Available for Sale**

| Date | Explanation | Units | Unit Cost | Total Cost |
|---|---|---|---|---|
| Jan. 1 | Beginning inventory | 100 | $10 | $ 1,000 |
| Apr. 15 | Purchase | 200 | 11 | 2,200 |
| Aug. 24 | Purchase | 300 | 12 | 3,600 |
| Nov. 27 | Purchase | 400 | 13 | 5,200 |
| | Total | 1,000 | | $12,000 |

**Step 1: Ending Inventory**

| Date | Units | Unit Cost | Total Cost |
|---|---|---|---|
| Nov. 27 | 400 | $13 | $ 5,200 |
| Aug. 24 | 50 | 12 | 600 |
| Total | 450 | | $ 5,800 |

**Step 2: Cost of Goods Sold**

| | |
|---|---|
| Cost of goods available for sale | $12,000 |
| Less Ending inventory | 5,800 |
| Cost of goods sold | $ 6,200 |

Under FIFO, since it is assumed that the first goods purchased were the first goods sold, ending inventory is based on the prices of the most recent units purchased. That is, under FIFO, companies obtain the cost of the ending inventory by taking the unit cost of the most recent purchase and working backward until all units of inventory have been costed. In this example, Houston Electronics prices the 450 units of ending inventory using the most recent prices. The last purchase was 400 units at $13 on November 27. The remaining 50 units are priced using the unit cost of the second most recent purchase, $12, on August 24. Next, Houston Electronics calculates cost of goods sold by subtracting the cost of the units not sold (ending inventory) from the cost of all goods available for sale.

The following illustration demonstrates that companies also can calculate cost of goods sold by pricing the 550 units sold using the prices of the first 550 units acquired. Note that of the 300 units purchased on August 24, only 250 units are assumed sold. This agrees with our calculation of the cost of ending

inventory, where 50 of these units were assumed unsold and thus included in ending inventory.

| Date | Units | Unit Cost | Total Cost |
|---|---|---|---|
| Jan. 1 | 100 | $10 | $ 1,000 |
| Apr. 15 | 200 | 11 | 2,200 |
| Aug. 24 | 250 | 12 | 3,000 |
| Total | 550 | | **$6,200** |

### 3.2.2. Last-in, First-out (Lifo):

The **last-in, first-out (LIFO) method** assumes that the latest goods purchased are the first to be sold. LIFO seldom coincides with the actual physical flow of inventory. (Exceptions include goods stored in piles, such as coal or hay, where goods are removed from the top of the pile as they are sold.) Under the LIFO method, the costs of the latest goods purchased are the first to be recognized in determining cost of goods sold. The following illustration shows the allocation of the cost of goods available for sale at Houston Electronics under Lifo.

**Cost of Goods Available for Sale**

| Date | Explanation | Units | Unit Cost | Total Cost |
|---|---|---|---|---|
| Jan. 1 | Beginning inventory | 100 | $10 | $ 1,000 |
| Apr. 15 | Purchase | 200 | 11 | 2,200 |
| Aug. 24 | Purchase | 300 | 12 | 3,600 |
| Nov. 27 | Purchase | 400 | 13 | 5,200 |
| | Total | 1,000 | | $12,000 |

**Step 1: Ending Inventory**

| Date | Units | Unit Cost | Total Cost |
|---|---|---|---|
| Jan. 1 | 100 | $10 | $ 1,000 |
| Apr. 15 | 200 | 11 | 2,200 |
| Aug. 24 | 150 | 12 | 1,800 |
| Total | 450 | | $ 5,000 |

**Step 2: Cost of Goods Sold**

| | |
|---|---|
| Cost of goods available for sale | $12,000 |
| Less Ending inventory | 5,000 |
| Cost of goods sold | $ 7,000 |

Under LIFO, since it is assumed that the first goods sold were those that were most recently purchased, ending inventory is based on the prices of the oldest units purchased. That is, under LIFO, companies obtain the cost of the ending inventory by taking the unit cost of the earliest goods available for sale and working forward until all units of inventory have been costed. In this example, Houston Electronics prices the 450 units of ending inventory using the earliest prices. The first purchase was 100 units at $10 in the January 1 beginning inventory. Then, 200 units were purchased at $11. The remaining 150 units needed are priced at $12 per unit (August 24 purchase). Next, Houston Electronics calculates cost of goods sold by subtracting the cost of the units not sold (ending inventory) from the cost of all goods available for sale.

The following illustration demonstrates that companies also can calculate cost of goods sold by pricing the 550 units sold using the prices of the last 550 units acquired. Note that of the 300 units purchased on August 24, only 150 units are assumed sold. This agrees with our calculation of the cost of ending

inventory, where 150 of these units were assumed unsold and thus included in ending inventory.

| Date | Units | Unit Cost | Total Cost |
|---|---|---|---|
| Nov. 27 | 400 | $13 | $ 5,200 |
| Aug. 24 | 150 | 12 | 1,800 |
| Total | 550 | | $7,000 |

Under a periodic inventory system, all goods purchased during the period are assumed to be available for the first sale, regardless of the date of purchase.

### 3.2.3. Average-Cost:

The **average-cost method** allocates the cost of goods available for sale on the basis of the weighted-average unit cost incurred. The average-cost method assumes that goods are similar in nature. The following illustration presents the formula and a sample computation of the weighted-average unit cost.

| Cost of Goods Available for Sale | ÷ | Total Units Available for Sale | = | Weighted-Average Unit Cost |
|---|---|---|---|---|
| $12,000 | ÷ | 1,000 | = | $12 |

The company then applies the weighted-average unit cost to the units on hand to determine the cost of the ending inventory. The following illustration shows the allocation of the cost of goods available for sale at Houston Electronics using average-cost.

**Cost of Goods Available for Sale**

| Date | Explanation | Units | Unit Cost | Total Cost |
|---|---|---|---|---|
| Jan. 1 | Beginning inventory | 100 | $10 | $ 1,000 |
| Apr. 15 | Purchase | 200 | 11 | 2,200 |
| Aug. 24 | Purchase | 300 | 12 | 3,600 |
| Nov. 27 | Purchase | 400 | 13 | 5,200 |
| | Total | 1,000 | | $12,000 |

**Step 1: Ending Inventory**

$ 12,000 ÷ 1,000 = $ 12

| Units | Unit Cost | Total Cost |
|---|---|---|
| 450 | $12 | $ 5,400 |

**Step 2: Cost of Goods Sold**

| | |
|---|---|
| Cost of goods available for sale | $12,000 |
| Less Ending inventory | 5,400 |
| Cost of goods sold | $ 6,600 |

We can verify the cost of goods sold under this method by multiplying the units sold times the weighted-average unit cost (550 x $12 = $6,600). Note that this method does not use the average of the unit costs. That average is $11.50 ($10 + $11 + $12 + $13 = $46; $46 ÷ 4). The average-cost method instead uses the average weighted by the quantities purchased at each unit cost.

**(4) Financial Statement and Tax Effects of Cost Flow Methods:**

Each of the three assumed cost flow methods is acceptable for use. In fact, a company may also use more than one cost flow method at the same time. The reasons companies adopt different inventory cost flow methods are varied, but they usually involve one of three factors:

(1) income statement effects.

(2) balance sheet effects.

(3) tax effects.

## 4.1. Income Statement Effects:

To understand why companies might choose a particular cost flow method, let's examine the effects of the different cost flow assumptions on the financial statements of Houston Electronics. The condensed income statements in the following illustration assume that Houston sold its 550 units for $18,500, had operating expenses of $9,000, and is subject to an income tax rate of 30%.

**Houston Electronics**

**Condensed Income Statement**

| | **Fifo** | **Lifo** | **Average-Cost** |
|---|---|---|---|
| Sales revenue | $ 18,500 | $ 18,500 | $ 18,500 |
| Beginning inventory | 1,000 | 1,000 | 1,000 |
| Purchases | 11,000 | 11,000 | 11,000 |
| Cost of goods available for sale | 12,000 | 12,000 | 12,000 |
| Ending inventory | **5,800** | **5,000** | **5,400** |
| Cost of goods sold | 6,200 | 7,000 | 6,600 |
| Gross profit | 12,300 | 11,500 | 11,900 |
| Operating expenses | 9,000 | 9,000 | 9,000 |
| Income before income taxes | 3,300 | 2,500 | 2,900 |
| Income tax expense (30%) | 900 | 750 | 870 |
| Net income | **$ 2,310** | **$ 1,750** | **$ 2,030** |

Note the cost of goods available for sale ($12,000) is the same under each of the three inventory cost flow methods. However, the ending inventories and the costs of goods sold are different. This difference is due to the unit costs that the company allocated to cost of goods sold and to ending inventory. Each dollar of difference in ending inventory results in a corresponding dollar difference in income before income taxes. For Houston, an $800 difference exists between FIFO and LIFO cost of goods sold.

In periods of changing prices, the cost flow assumption can have significant impacts both on income and on evaluations of income, such as the following.

**1.** In a period of inflation, FIFO produces a higher net income because lower unit costs of the first units purchased are matched against revenue.

**2.** In a period of inflation, LIFO produces a lower net income because higher unit costs of the last goods purchased are matched against revenue.

**3.** If prices are falling, the results from the use of FIFO and LIFO are reversed. FIFO will report the lowest net income and LIFO the highest.

**4.** Regardless of whether prices are rising or falling, average-cost produces net income between FIFO and LIFO.

As shown in the Houston example, in a period of rising prices FIFO reports the highest net income ($2,310) and LIFO the lowest ($1,750); average- cost falls between these two amounts ($2,030).

To management, higher net income is an advantage. It causes external users to view the company more favorably. In addition, management bonuses, if based on net income, will be higher. Therefore, when prices are rising (which is usually the case), companies tend to prefer FIFO because it results in higher net income. Others believe that LIFO presents a more realistic net income number. That is, LIFO matches the more recent costs against current revenues to provide a better measure of net income. During periods of inflation, many

challenge the quality of non-LIFO earnings, noting that failing to match current costs against current revenues leads to an understatement of cost of goods sold and an overstatement of net income. As some indicate, net income computed using FIFO creates **"paper or phantom profits"**—that is, earnings that do not really exist.

### 4.2. Balance Sheet Effects:

A major advantage of the FIFO method is that in a period of inflation, the costs allocated to ending inventory will approximate their current cost. For example, for Houston Electronics, 400 of the 450 units in the ending inventory are costed under FIFO at the higher November 27 unit cost of $13.

Conversely, a major shortcoming of the LIFO method is that in a period of inflation, the costs allocated to ending inventory may be significantly understated in terms of current cost. The understatement becomes greater over prolonged periods of inflation if the inventory includes goods purchased in one or more prior accounting periods. For example, Caterpillar has used LIFO for more than 50 years. Its balance sheet shows ending inventory of $12,625 million. But the inventory's actual current cost if FIFO had been used is $15,129 million.

### 4.3. Tax Effects:

We have seen that both inventory on the balance sheet and net income on the income statement are higher when companies use FIFO in a period of inflation. Yet, many companies have selected LIFO. Why? The reason is that LIFO results in the lowest income taxes (because of lower net income) during times of rising prices. For example, at Houston Electronics, income taxes are

$750 under LIFO, compared to $990 under FIFO. The tax savings of $240 makes more cash available for use in the business.

A tax rule, often referred to as the LIFO conformity rule, requires that if companies use LIFO for tax purposes, they must also use it for financial reporting purposes. This means that if a company chooses the LIFO method to reduce its tax bills, it will also have to report lower net income in its financial statements.

**Using Inventory Cost Flow Methods Consistently:**

Whatever cost flow method a company chooses, it should use that method consistently from one accounting period to another. This approach is often referred to as the consistency concept, which means that a company uses the same accounting principles and methods from year to year. Consistent application enhances the comparability of financial statements over successive time periods.

In contrast, using the FIFO method one year and the LIFO method the next year would make it difficult to compare the net incomes of the two years.

Although consistent application is preferred, it does not mean that a company may never change its inventory costing method. When a company adopts a different method, it should disclose in the financial statements the change and its effects on net income.

## (5) The Effects of Inventory Errors on Financial Statements:

Errors occasionally occur in accounting for inventory. In some cases, errors are caused by failure to count or price the inventory correctly. In other cases, errors occur because companies do not properly recognize the transfer of legal title to goods that are in transit. When errors occur, they affect both the income statement and the balance sheet.

## 5.1. Income Statement Effects:

Under a periodic inventory system, both the beginning and ending inventories appear in the income statement. The ending inventory of one period automatically becomes the beginning inventory of the next period. Thus, inventory errors affect the computation of cost of goods sold and net income in two periods. The effects on cost of goods sold can be computed by first entering incorrect data in the following formula and then substituting the correct data.

| **Beginning Inventory** | + | **Cost of Goods Purchased** | − | **Ending Inventory** | = | **Cost of Goods Sold** |
|---|---|---|---|---|---|---|

If the error understates **beginning** inventory, cost of goods sold will be understated. If the error understates **ending** inventory, cost of goods sold will be overstated. The following illustration shows the effects of inventory errors on the current year's income statement.

| **When Inventory Error:** | **Cost of Goods Sold Is:** | **Net Income Is:** |
|---|---|---|
| Understates beginning inventory | Understated | Overstated |
| Overstates beginning inventory | Overstated | Understated |
| Understates ending inventory | Overstated | Understated |
| Overstates ending inventory | Understated | Overstated |

The effects of inventory errors are straightforward. Now, though, comes the (at first) surprising part: An error in the ending inventory of the current period will have a reverse effect on net income of the next accounting period. The reverse effect comes from the fact that understating ending inventory in 2016

results in understating beginning inventory in 2017 and overstating net income in 2017.

### 5.2. Balance Sheet Effects:

Companies can determine the effect of ending inventory errors on the balance sheet by using the basic accounting equation:

Assets = Liabilities + Owner's Equity.

Errors in the ending inventory have the effects shown in the following illustration.

| Ending Inventory Error | Assets | Liabilities | Owner's Equity |
|---|---|---|---|
| Overstated | Overstated | No Effect | Overstated |
| Understated | Understated | No Effect | Understated |

**Example:**

Visual Company overstated its 2016 ending inventory by $22,000. Determine the impact this error has on ending inventory, cost of goods sold, and owner's equity in 2016 and 2017.

**Solution:**

| | 2016 | 2017 |
|---|---|---|
| Ending inventory | $22,000 overstated | No effect |
| Cost of goods sold | $22,000 understated | $22,000 overstated |
| Owner's equity | $22,000 overstated | No effect |

## (6) Statement Presentation and Analysis of Inventory:

Inventory is classified in the balance sheet as a current asset immediately below receivables. In a multiple-step income statement, cost of goods sold is subtracted from net sales. There also should be disclosure of

(1) the major inventory classifications.

(2) the basis of accounting (cost, or lower-of-cost or- market).

(3) the cost method (FIFO, LIFO, or average cost).

### 6.1. Lower-of-Cost-or-Market:

The value of inventory for companies selling high-technology or fashion goods can drop very quickly due to continual changes in technology or fashions. These circumstances sometimes call for inventory valuation methods other than those presented so far. For example, at one time purchasing managers at Ford decided to make a large purchase of palladium, a precious metal used in vehicle emission devices. They made this purchase because they feared a future shortage. The shortage did not materialize, and by the end of the year the price of palladium had plummeted. Ford's inventory was then worth $1 billion less than its original cost. Do you think Ford's inventory should have been stated at cost, in accordance with the historical cost principle, or at its lower replacement cost?

As you probably reasoned, this situation requires a departure from the cost basis of accounting. This is done by valuing the inventory at the **lower-of-cost-or-market (LCM)** in the period in which the price decline occurs. LCM is a basis whereby inventory is stated at the lower of either its cost or market value as determined by current replacement cost. LCM is an example of the accounting convention of conservatism. Conservatism means that the

approach adopted among accounting alternatives is the method that is least likely to overstate assets and net income.

Companies apply LCM to the items in inventory after they have used one of the cost flow methods (specific identification, FIFO, LIFO, or average cost) to determine cost. Under the LCM basis, market is defined as current replacement cost, not selling price. For a merchandising company, current replacement cost is the cost of purchasing the same goods at the present time from the usual suppliers in the usual quantities. Current replacement cost is used because a decline in the replacement cost of an item usually leads to a decline in the selling price of the item.

To illustrate the application of LCM, assume that Ken Tuckie TV has the following lines of merchandise with costs and market values as indicated. LCM produces the results shown in the following illustration. Note that the amounts shown in the final column are the lower-of-cost-or-market amounts for each item.

| | Units | Cost per Unit | Market per Unit | Lower-of-Cost-or-Market |
|---|---|---|---|---|
| Flat-screen TVs | 100 | $600 | **$550** | $ 55,000 ($550 x 100) |
| Satellite radios | 500 | **90** | 104 | 45,000 ($90 x 500) |
| Blu-ray players | 850 | 50 | **48** | 40,800 ($48 x 850) |
| CDs | 3,000 | **5** | 6 | 15,000 ($5 x 3,000) |
| Total inventory | | | | $155,800 |

**6.2. Analysis:**

The amount of inventory carried by a company has significant economic consequences. And inventory management is a double-edged sword that requires constant attention. On the one hand, management wants to have a

great variety and quantity available so that customers have a wide selection and items are always in stock. But such a policy may incur high carrying costs (e.g., investment, storage, insurance, obsolescence, and damage). On the other hand, low inventory levels lead to stock-outs and lost sales. Common ratios used to manage and evaluate inventory levels are inventory turnover and a related measure, days in inventory.

**Inventory turnover** measures the number of times on average the inventory is sold during the period. Its purpose is to measure the liquidity of the inventory. The inventory turnover is computed by dividing cost of goods sold by the average inventory during the period. Unless seasonal factors are significant, average inventory can be computed from the beginning and ending inventory balances.

For example, **Wal-Mart** reported in its 2014 annual report a beginning inventory of $43,803 million, an ending inventory of $44,858 million, and cost of goods sold for the year ended January 31, 2014, of $358,069 million. The inventory turnover formula and computation for Wal-Mart are shown below.

| **Cost of Goods Sold** | | **Average Inventory** | | **Inventory Turnover** |
|---|---|---|---|---|
| $358,069 | ÷ | $\frac{\$44,858 + \$43,803}{2}$ | = | **8.1 times** |

A variant of the inventory turnover is days in inventory. This measures the average number of days inventory is held. It is calculated as 365 divided by the inventory turnover. For example, Wal-Mart's inventory turnover of 8.1 times divided into 365 is approximately 45.1 days. This is the approximate time that it takes a company to sell the inventory once it arrives at the store. There are typical levels of inventory in every industry. Companies that are

able to keep their inventory at lower levels and higher turnovers and still satisfy customer needs are the most successful.

**Example:**

Tracy Company sells three different types of home heating stoves (gas, wood, and pellet). The cost and market value of its inventory of stoves are as follows.

| | Cost | Market |
|---|---|---|
| Gas | $ 84,000 | $ 79,000 |
| Wood | 250,000 | 280,000 |
| Pellet | 112,000 | 101,000 |

Determine the value of the company's inventory under the lower-of-cost-or market approach.

**Solution:**

The lowest value for each inventory type is gas $79,000, wood $250,000, and pellet $101,000. The total inventory value is the sum of these amounts, $430,000.

**Glossary Review:**

**Average-cost method:** Inventory costing method that uses the weighted-average unit cost to allocate to ending inventory and cost of goods sold the cost of goods available for sale.

**Consigned goods:** Goods held for sale by one party although ownership of the goods is retained by another party.

**Consistency concept:** Dictates that a company use the same accounting principles and methods from year to year.

**Finished goods inventory:** Manufactured items that are completed and ready for sale.

**First-in, first-out (FIFO) method:** Inventory costing method that assumes that the costs of the earliest goods purchased are the first to be recognized as cost of goods sold.

**FOB (free on board) destination:** Freight terms indicating that ownership of the goods remains with the seller until the goods reach the buyer.

**FOB (free on board) shipping point:** Freight terms indicating that ownership of the goods passes to the buyer when the public carrier accepts the goods from the seller.

**Inventory turnover:** A ratio that measures the number of times on average the inventory sold during the period; computed by dividing cost of goods sold by the average inventory during the period.

**Last-in, first-out (LIFO) method:** Inventory costing method that assumes the costs of the latest units purchased are the first to be allocated to cost of goods sold.

**Lower-of-cost-or-market (LCM):** A basis whereby inventory is stated at the lower of either its cost or its market value as determined by current replacement cost.

**Specific identification method:** An actual physical flow costing method in which items still in inventory are specifically costed to arrive at the total cost of the ending inventory.

**Weighted-average unit cost:** Average cost that is weighted by the number of units purchased at each unit cost.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** Cost of goods available for sale consists of two elements: beginning inventory and

(a) ending inventory.

(b) cost of goods purchased.

(c) cost of goods sold.

(d) All of the answer choices are correct.

**2.** In periods of rising prices, LIFO will produce:

(a) higher net income than FIFO.

(b) the same net income as FIFO.

(c) lower net income than FIFO.

(d) higher net income than average-cost.

**3.** Factors that affect the selection of an inventory costing method do **not** include:

(a) tax effects.

(b) balance sheet effects.

(c) income statement effects.

(d) perpetual vs. periodic inventory system.

**4.**Poppins Company has the following:

| | Units | Unit Cost |
|---|---|---|
| Inventory, Jan. 1 | 8,000 | $11 |
| Purchase, June 19 | 13,000 | 12 |
| Purchase, Nov. 8 | 5,000 | 13 |

If Poppins has 9,000 units on hand at December 31, the cost of the ending inventory under FIFO is:

(a) $99,000.
(c) $113,000.
(b) $108,000.
(d) $117,000.

**5.** Using the data in Question 4 above, the cost of the ending inventory under LIFO is:

(a) $113,000.
(c) $99,000.
(b) $108,000.
(d) $100,000.

**6.**Falk Company's ending inventory is understated $4,000. The effects of this error on the current year's cost of goods sold and net income, respectively, are:

(a) understated, overstated.
(b) overstated, understated.
(c) overstated, overstated.
(d) understated, understated.

**7.** Pauline Company overstated its inventory by $15,000 at December 31, 2016. It did not correct the error in 2016 or 2017. As a result, Pauline's owner's equity was:

(a) overstated at December 31, 2016 and understated at December 31, 2017.
(b) overstated at December 31, 2016, and properly stated at December 31, 2017.
(c) understated at December 31, 2016 and understated at December 31, 2017.
(d) overstated at December 31, 2016 and overstated at December 31, 2017.

**8.** Santana Company had beginning inventory of $80,000, ending inventory of $110,000, cost of goods sold of $285,000, and sales of $475,000. Santana's days in inventory is:

(a) 73 days.
(b) 121.7 days.
(c) 102.5 days.
(d) 84.5 days.

**9.** Which of these would cause the inventory turnover to increase the most?

(a) Increasing the amount of inventory on hand.
(b) Keeping the amount of inventory on hand constant but increasing sales.
(c) Keeping the amount of inventory on hand constant but decreasing sales.
(d) Decreasing the amount of inventory on hand and increasing sales.

**10.** Norton Company purchased 1,000 widgets and has 200 widgets in its ending inventory at a cost of $91 each and a current replacement cost of $80 each. The ending inventory under lower-of-cost-or-market is:

(a) $91,000.
(b) $80,000.
(c) $18,200.
(d) $16,000.

# Exercises

**Exercise (1):**

Kari Downs, an auditor with Wheeler CPAs, is performing a review of Depue Company's inventory account. Depue did not have a good year, and top management is under pressure to boost reported income. According to its records, the inventory balance at yearend was $740,000. However, the following information was not considered when determining that amount.

1. Included in the company's count were goods with a cost of $250,000 that the company is holding on consignment. The goods belong to Kroeger Corporation.
2. The physical count did not include goods purchased by Depue with a cost of $40,000 that were shipped FOB destination on December 28 and did not arrive at Depue warehouse until January 3.
3. Included in the inventory account was $14,000 of office supplies that were stored in the warehouse and were to be used by the company's supervisors and managers during the coming year.
4. The company received an order on December 29 that was boxed and sitting on the loading dock awaiting pick-up on December 31. The shipper picked up the goods on January 1 and delivered them on January 6. The shipping terms were FOB shipping point. The goods had a selling price of $40,000 and a cost of $28,000. The goods were not included in the count because they were sitting on the dock.
5. On December 29, Depue shipped goods with a selling price of $80,000 and a cost of $60,000 to Macchia Sales Corporation FOB shipping point. The goods arrived on January 3. Macchia had only ordered goods with a selling price of $10,000 and a cost of $8,000. However, a sales manager at Depue had

authorized the shipment and said that if Machia wanted to ship the goods back next week, it could.

6. Included in the count was $40,000 of goods that were parts for a machine that the company no longer made. Given the high-tech nature of Depue's products, it was unlikely that these obsolete parts had any other use. However, management would prefer to keep them on the books at cost, "since that is what we paid for them, after all."

Prepare a schedule to determine the correct inventory amount. Provide explanations for each item above, saying why you did or did not make an adjustment for each item.

**Exercise (2):**

On December 1, Kiyak Electronics Ltd. has three DVD players left in stock. All are identical, all are priced to sell at $150. One of the three DVD players left in stock, with serial #1012, was purchased on June 1 at a cost of $100. Another, with serial #1045, was purchased on November 1 for $88. The last player, serial #1056, was purchased on November 30 for $80.

(a) Calculate the cost of goods sold using the FIFO periodic inventory method assuming that two of the three players were sold by the end of December, Kiyak Electronics' year-end.

(b) If Kiyak Electronics used the specific identification method instead of the FIFO method, how might it alter its earnings by "selectively choosing" which particular players to sell to the two customers? What would Kiyak's cost of goods sold be if the company wished to minimize earnings? Maximize earnings?

(c) Which of the two inventory methods do you recommend that Kiyak use? Explain why.

**Exercise (3):**

Shawn Company had 100 units in beginning inventory at a total cost of $10,000. The company purchased 200 units at a total cost of $26,000. At the end of the year, Shawn had 75 units in ending inventory.

(a) Compute the cost of the ending inventory and the cost of goods sold under (1) FIFO, (2) LIFO, and (3) average cost.

(b) Which cost flow method would result in the highest net income?

(c) Which cost flow method would result in inventories approximating current cost in the balance sheet?

(d) Which cost flow method would result in Shawn paying the least taxes in the first year?

**Exercise (4):**

Smart Watch Company reported the following income statement data for a 2-year period.

| | **2016** | **2017** |
|---|---|---|
| Sales revenue | $220,000 | $250,000 |
| Cost of goods sold | | |
| Beginning inventory | 32,000 | 44,000 |
| Cost of goods purchased | 173,000 | 202,000 |
| Cost of goods available for sale | 205,000 | 246,000 |
| Ending inventory | 44,000 | 52,000 |
| Cost of goods sold | 161,000 | 194,000 |
| Gross profit | $ 59,000 | $ 56,000 |

Smart uses a periodic inventory system. The inventories at January 1, 2016, and December 31, 2017, are correct. However, the ending inventory at December 31, 2016, was overstated $6,000.

(a) Prepare correct income statement data for the 2 years.

(b) What is the cumulative effect of the inventory error on total gross profit for the 2 years?

**Exercise (5):**

Charapata Company applied FIFO to its inventory and got the following results for its ending inventory.

| | |
|---|---|
| Cameras | 100 units at a cost per unit of $65 |
| Blu-ray players | 150 units at a cost per unit of $75 |
| iPods | 125 units at a cost per unit of $80 |

The cost of purchasing units at year-end was cameras $71, Blu-ray players $67, and iPods $78.

Determine the amount of ending inventory at lower-of-cost-or-market.

**Exercise (6):**

The cost of goods sold computations for Sooner Company and Later Company are shown below.

| | **Sooner Company** | **Later Company** |
|---|---|---|
| Beginning inventory | $ 45,000 | $ 71,000 |
| Cost of goods purchased | 200,000 | 290,000 |
| Cost of goods available for sale | 245,000 | 361,000 |
| Ending inventory | 55,000 | 69,000 |
| Cost of goods sold | $190,000 | $292,000 |

(a) Compute inventory turnover and days in inventory for each company.

(b) Which company moves its inventory more quickly?

**Exercise (7):**

Glee Distribution markets CDs of the performing artist Unique. At the beginning of October, Glee had in beginning inventory 2,000 of Unique's CDs with a unit cost of $7. During October, Glee made the following purchases of Unique's CDs.

| | |
|---|---|
| Oct. 3 2,500 @ $8 | Oct. 19 3,000 @ $10 |
| Oct. 9 3,500 @ $9 | Oct. 25 4,000 @ $11 |

During October, 10,900 units were sold. Glee uses a periodic inventory system.

(a) Determine the cost of goods available for sale.

(b) Determine (1) the ending inventory and (2) the cost of goods sold under each of the assumed cost flow methods (FIFO, LIFO, and average cost). Prove the accuracy of the cost of goods sold under the FIFO and LIFO methods.

(c) Which cost flow method results in:

(1) the highest inventory amount for the balance sheet

(2) the highest cost of goods sold for the income statement.

**Exercise (8):**

Sekhon Company had a beginning inventory on January 1 of 160 units of Product 4-18-15 at a cost of $20 per unit. During the year, the following purchases were made.

| | |
|---|---|
| Mar. 15 400 units at $23 | Sept. 4 330 units at $26 |
| July 20 250 units at $24 | Dec. 2 100 units at $29 |

1,000 units were sold. Sekhon Company uses a periodic inventory system.

(a) Determine the cost of goods available for sale.

(b) Determine (1) the ending inventory, and (2) the cost of goods sold under each of the assumed cost flow methods (FIFO, LIFO, and average cost). Prove the accuracy of the cost of goods sold under the FIFO and LIFO methods.

(c) Which cost flow method results in:

(1) the highest inventory amount for the balance sheet.

(2) the highest cost of goods sold for the income statement.

**Exercise (9):**

You are provided with the following information for Gobler Inc. Gobler Inc. uses the periodic method of accounting for its inventory transactions.

March 1 Beginning inventory 2,000 liters at a cost of 60¢ per liter.

March 3 Purchased 2,500 liters at a cost of 65¢ per liter.

March 5 Sold 2,300 liters for $1.05 per liter.

March 10 Purchased 4,000 liters at a cost of 72¢ per liter.

March 20 Purchased 2,500 liters at a cost of 80¢ per liter.

March 30 Sold 5,200 liters for $1.25 per liter.

(a) Prepare partial income statements through gross profit and calculate the value of ending inventory that would be reported on the balance sheet, under each of the following cost flow assumptions. (Round ending inventory and cost of goods sold to the nearest dollar.)

(1) Specific identification method assuming:

(i) The March 5 sale consisted of 1,000 liters from the March 1 beginning inventory and 1,300 liters from the March 3 purchase.

(ii) The March 30 sale consisted of the following number of units sold from beginning inventory and each purchase: 450 liters from March 1; 550 liters from March 3; 2,900 liters from March 10; 1,300 liters from March 20.

(2) FIFO.

(3) LIFO.

(b) How can companies use a cost flow method to justify price increases? Which cost flow method would best support an argument to increase prices?

**Exercise (10):**

The management of Danica Co. asks your help in determining the comparative effects of the FIFO and LIFO inventory cost flow methods. For 2017, the accounting records provide the following data.

| | |
|---|---|
| Inventory, January 1 (10,000 units) | $ 47,000 |
| Cost of 100,000 units purchased | 532,000 |
| Selling price of 84,000 units sold | 735,000 |
| Operating expenses | 140,000 |

Units purchased consisted of 35,000 units at $5.10 on May 10; 35,000 units at $5.30 on August 15; and 30,000 units at $5.60 on November 20. Income taxes are 30%.

(a) Prepare comparative condensed income statements for 2017 under FIFO and LIFO. (Show computations of ending inventory.)

(b) Answer the following questions for management.

(1) Which inventory cost flow method produces the most meaningful inventory amount for the balance sheet? Why?

(2) Which inventory cost flow method produces the most meaningful net income? Why?

(3) Which inventory cost flow method is most likely to approximate actual physical flow of the goods? Why?

(4) How much additional cash will be available for management under LIFO than under FIFO? Why?

(5) How much of the gross profit under FIFO is illusory in comparison with the gross profit under LIFO?

# Chapter (3)

# Fraud, Internal Control, and Cash

# Fraud, Internal Control, and Cash

## Introduction:

Every company possesses internal controls on the effort of supervising its business activities. It is meant to establish efficient and effective activities in order to gain the purposed entity. In the field of banking, internal controls are certainly needed as a means of supervision in addition to other regulations determined by the Financial Services Authority. Concerning banking crime modus operandi which does not only relate to fraud but also relate to the internal controls on human resources, it is possible that poor internal controls can be used as a fault of banking crimes. Poor internal controls have been identified as one of the causes of fraud. A company must possess effective internal controls to prevent fraud which can lead to a big loss. Internal controls can be described as policies or procedures regulated to convince that a certain purposed entity will be achieved. This is a process influenced by the board of directions of the organization, management sector, and other personnel. The main purpose of internal controls is to support the entity in administering the risks to achieve the purposed entity being built and to maintain the work ethics. Internal controls are the representations of holistic activities inside an organization which must be administered. The process administered by the board of commissioners is purposively done to adequately convince the members about the achievement of efficient and effective operational control purposes, financial report credibility, and the obligation towards laws and regulations. The internal control system minimizes the risks and supports the company to make sure of financial report credibility and the obligation of laws and regulations. The increasing number of business failure and some

published fraud have encouraged companies to emphasize more on the internal control system, especially on the operational environment.

**(1) Fraud:**

A **fraud** is a dishonest act by an employee that results in personal benefit to the employee at a cost to the employer. Examples of fraud reported in the financial press include the following.

• A bookkeeper in a small company diverted $750,000 of bill payments to a personal bank account over a three-year period.

• A shipping clerk with 28 years of service shipped $125,000 of merchandise to himself.

• A computer operator embezzled $21 million from Wells Fargo Bank over a two-year period.

Why does fraud occur? The three main factors that contribute to fraudulent activity are depicted by the **fraud triangle**.

The most important element of the fraud triangle is **opportunity**.

For an employee to commit fraud, the workplace environment must provide opportunities that an employee can take advantage of. Opportunities occur when the workplace lacks sufficient controls to deter and detect fraud. For example, inadequate monitoring of employee actions can create opportunities for theft and can embolden employees because they believe they will not be caught.

A second factor that contributes to fraud is **financial pressure**.

Employees sometimes commit fraud because of personal financial problems caused by too much debt. Or, they might commit fraud because they want to lead a lifestyle that they cannot afford on their current salary.

The third factor that contributes to fraud is **rationalization**. In order to justify

their fraud, employees rationalize their dishonest actions. For example, employees sometimes justify fraud because they believe they are underpaid while the employer is making lots of money. Employees feel justified in stealing because they believe they deserve to be paid more.

**(2) Internal Control:**

**Internal control** is a process designed to provide reasonable assurance regarding the achievement of objectives related to operations, reporting, and compliance. In more detail, it consists of all the related methods and measures adopted within an organization to safeguard assets, enhance the reliability of accounting records, increase efficiency of operations, and ensure compliance with laws and regulations. Internal control systems have five primary components as listed below.

• **A control environment.** It is the responsibility of top management to make it clear that the organization values integrity and that unethical activity will not be tolerated. This component is often referred to as the "tone at the top."

• **Risk assessment.** Companies must identify and analyze the various factors that create risk for the business and must determine how to manage these risks.

• **Control activities.** To reduce the occurrence of fraud, management must design policies and procedures to address the specific risks faced by the company.

• **Information and communication.** The internal control system must capture and communicate all pertinent information both down and up the organization, as well as communicate information to appropriate external parties.

• **Monitoring.** Internal control systems must be monitored periodically for their adequacy. Significant deficiencies need to be reported to top management and/or the board of directors.

## 2.1. Principles of Internal Control Activities:

Each of the five components of an internal control system is important. Here, we will focus on one component, the control activities. The reason? These activities are the backbone of the company's efforts to address the risks it faces, such as fraud. The specific control activities used by a company will vary, depending on management's assessment of the risks faced. This assessment is heavily influenced by the size and nature of the company.

The six principles of control activities are as follows.

• Establishment of responsibility
• Segregation of duties
• Documentation procedures
• Physical controls
• Independent internal verification
• Human resource controls

We explain these principles in the following sections. You should recognize that they apply to most companies and are relevant to both manual and computerized accounting systems.

### 2.1.1 Establishment of Responsibility:

An essential principle of internal control is to assign responsibility to specific employees. Control is most effective when only one person is responsible for a given task**.** To illustrate, assume that the cash on hand at the end of the day in a supermarket is $10 short of the cash entered in the cash register. If only

one person has operated the register, the shift manager can quickly determine responsibility for the shortage. If two or more individuals have worked the register, it may be impossible to determine who is responsible for the error. Establishing responsibility often requires limiting access only to authorized personnel, and then identifying those personnel. For example, the automated systems used by many companies have mechanisms such as identifying passcodes that keep track of who made a journal entry, who entered a sale, or who went into an inventory storeroom at a particular time. Use of identifying passcodes enables the company to establish responsibility by identifying the particular employee who carried out the activity.

### 2.1.2 Segregation of Duties:

Segregation of duties is indispensable in an internal control system. There are two common applications of this principle:

**1.** Different individuals should be responsible for related activities.

**2.** The responsibility for recordkeeping for an asset should be separate from the physical custody of that asset.

The rationale for segregation of duties is this: The work of one employee should, without a duplication of effort, provide a reliable basis for evaluating the work of another employee. For example, the personnel that design and program computerized systems should not be assigned duties related to day-today use of the system. Otherwise, they could design the system to benefit them personally and conceal the fraud through day-to-day use.

**Segregation of Related Activities:**

Making one individual responsible for related activities increases the potential for errors and irregularities. Instead, companies should, for example,

assign related purchasing activities to different individuals. Related purchasing activities include ordering merchandise, order approval, receiving goods, authorizing payment, and paying for goods or services. Various frauds are possible when one person handles related purchasing activities:

• If a purchasing agent is allowed to order goods without obtaining supervisory approval, the likelihood of the purchasing agent receiving kickbacks from suppliers increases.

• If an employee who orders goods also handles the invoice and receipt of the goods, as well as payment authorization, he or she might authorize payment for a fictitious invoice. These abuses are less likely to occur when companies divide the purchasing tasks.

Similarly, companies should assign related sales activities to different individuals. Related selling activities include making a sale, shipping (or delivering) the goods to the customer, billing the customer, and receiving payment. Various frauds are possible when one person handles related sales activities:

• If a salesperson can make a sale without obtaining supervisory approval, he or she might make sales at unauthorized prices to increase sales commissions.

• A shipping clerk who also has access to accounting records could ship goods to himself.

• A billing clerk who handles billing and receipt could understate the amount billed for sales made to friends and relatives.

These abuses are less likely to occur when companies divide the sales tasks. The salespeople make the sale, the shipping department ships the goods on the basis of the sales order, and the billing department prepares the sales invoice after comparing the sales order with the report of goods shipped.

**Segregation of Recordkeeping from Physical Custody:**

The accountant should have neither physical custody of the asset nor access to it. Likewise, the custodian of the asset should not maintain or have access to the accounting records. The custodian of the asset is not likely to convert the asset to personal use when one employee maintains the record of the asset, and a different employee has physical custody of the asset. The separation of accounting responsibility from the custody of assets is especially important for cash and inventories because these assets are very vulnerable to fraud.

### 2.1.3. Documentation Procedures:

Documents provide evidence that transactions and events have occurred. A shipping document indicates that the goods have been shipped, and a sales invoice indicates that the company has billed the customer for the goods. By requiring signatures (or initials) on the documents, the company can identify the individual(s) responsible for the transaction or event. Companies should document transactions when they occur. Companies should establish procedures for documents.

First, whenever possible, companies should use prenumbered documents, and all documents should be accounted for. Prenumbering helps to prevent a transaction from being recorded more than once, or conversely, from not being recorded at all.

Second, the control system should require that employees promptly forward source documents for accounting entries to the accounting department. This control measure helps to ensure timely recording of the transaction and contributes directly to the accuracy and reliability of the accounting records.

### 2.1.4. Physical Controls:

Use of physical controls is essential. Physical controls relate to the safeguarding of assets and enhance the accuracy and reliability of the accounting records.

### 2.1.5. Independent Internal Verification:

Most internal control systems provide for independent internal verification. This principle involves the review of data prepared by employees. To obtain maximum benefit from independent internal verification:

**1.** Companies should verify records periodically or on a surprise basis.

**2.** An employee who is independent of the personnel responsible for the information should make the verification.

**3.** Discrepancies and exceptions should be reported to a management level that can take appropriate corrective action.

Independent internal verification is especially useful in comparing recorded accountability with existing assets. Examples are the reconciliation of a company's cash balance per books with the cash balance per bank, and the verification of the perpetual inventory records through a count of physical inventory.

### 2.1.6. Human Resource Controls:

Human resource control activities include the following.

**1. Bond employees who handle cash.** Bonding involves obtaining insurance protection against theft by employees. It contributes to the safeguarding of cash in two ways. First, the insurance company carefully screens all individuals before adding them to the policy and may reject risky applicants. Second, bonded employees know that the insurance company will vigorously prosecute all offenders.

**2. Rotate employees' duties and require employees to take vacations.** These measures deter employees from attempting thefts since they will not be able to permanently conceal their improper actions. Many banks, for example, have discovered employee thefts when the employee was on vacation or assigned to a new position.

**3. Conduct thorough background checks.** Many believe that the most important and inexpensive measure any business can take to reduce employee theft and fraud is for the human resources department to conduct thorough background checks. Two tips:

(1) Check to see whether job applicants actually graduated from the schools they list.

(2) Never use telephone numbers for previous employers provided by the applicant. Always look them up yourself.

**(3) Limitations of Internal Control:**

Companies generally design their systems of internal control to provide reasonable assurance of proper safeguarding of assets and reliability of the accounting records. The concept of reasonable assurance rests on the premise that the costs of establishing control procedures should not exceed their expected benefit.

To illustrate, consider shoplifting losses in retail stores. Stores could eliminate such losses by having a security guard stop and search customers as they leave the store. But store managers have concluded that the negative effects of such a procedure cannot be justified. Instead, they have attempted to control shoplifting losses by less costly procedures. They post signs saying, "We reserve the right to inspect all packages" and "All shoplifters will be

prosecuted." They use hidden cameras and store detectives to monitor customer activity, and they install sensor equipment at exits.

The **human element** is an important factor in every system of internal control. A good system can become ineffective as a result of employee fatigue, carelessness, or indifference. For example, a receiving clerk may not bother to count goods received and may just "fudge" the counts. Occasionally, two or more individuals may work together to get around prescribed controls. Such collusion can significantly reduce the effectiveness of a system, eliminating the protection offered by segregation of duties. No system of internal control is perfect.

The **size of the business** also may impose limitations on internal control. Small companies often find it difficult to segregate duties or to provide for independent internal verification. Businesses with fewer than 100 employees are most at risk for employee theft. In fact, 29% of frauds occurred at companies with fewer than 100 employees. The median loss at small companies was $154,000, which was close to the median fraud at companies with more than 10,000 employees ($160,000). A $154,000 loss can threaten the very existence of a small company.

## (4) Internal Control to Cash:

Cash is the one asset that is readily convertible into any other type of asset. It also is easily concealed and transported and is highly desired. Because of these characteristics, cash is the asset most susceptible to fraudulent activities. In addition, because of the large volume of cash transactions, numerous errors may occur in executing and recording them. To safeguard cash and to ensure the accuracy of the accounting records for cash, effective internal control over cash is critical.

## 4.1. Cash Receipts Controls:

To illustrate internal control over cash receipts, we will examine control activities for a retail store with both over the counter and mail receipts.

### 4.1.1. Over-the-Counter Receipts:

In retail businesses, control of over-the-counter receipts centers on cash registers that are visible to customers. A cash sale is entered in a cash register (or point-of sale terminal), with the amount clearly visible to the customer. This activity prevents the sales clerk from entering a lower amount and pocketing the difference. The customer receives an itemized cash register receipt slip and is expected to count the change received. The cash register's tape is locked in the register until a supervisor removes it. This tape accumulates the daily transactions and totals.

At the end of the clerk's shift, the clerk counts the cash and sends the cash and the count to the cashier. The cashier counts the cash, prepares a deposit slip, and deposits the cash at the bank. The cashier also sends a duplicate of the deposit slip to the accounting department to indicate cash received. The supervisor removes the cash register tape and sends it to the accounting department as the basis for a journal entry to record the cash received. (For point-of-sale systems, the accounting department receives information on daily transactions and totals through the computer network.)

This system for handling cash receipts uses an important internal control principle—segregation of recordkeeping from physical custody. The supervisor has access to the cash register tape but **not** to the cash. The clerk and the cashier have access to the cash but **not** to the register tape. In addition, the cash register tape provides documentation and enables independent internal verification. Use of these three principles of internal control

(segregation of recordkeeping from physical custody, documentation, and independent internal verification) provides an effective system of internal control. Any attempt at fraudulent activity should be detected unless there is collusion among the employees.

In some instances, the amount deposited at the bank will not agree with the cash recorded in the accounting records based on the cash register tape. These differences often result because the clerk hands incorrect change back to the retail customer. In this case, the difference between the actual cash and the amount reported on the cash register tape is reported in a Cash Over and Short account. For example, suppose that the cash register tape indicated sales of $6,956.20 but the amount of cash was only $6,946.10. A cash shortfall of $10.10 exists. To account for this cash shortfall and related cash, the company makes the following entry.

| | | | |
|---|---|---|---|
| | Cash | 6,946.10 | |
| | Cash Over and Short | 10.10 | |
| | Sales Revenue | | 6,956.20 |
| | (To record cash shortfall) | | |

Cash Over and Short is an income statement item. It is reported as miscellaneous expense when there is a cash shortfall, and as miscellaneous revenue when there is an overage. Clearly, the amount should be small. Any material amounts in this account should be investigated.

### 4.1.2. Mail Receipts:

All mail receipts should be opened in the presence of at least two mail clerks.

These receipts are generally in the form of checks. A mail clerk should endorse each check "For Deposit Only." This restrictive endorsement reduces the likelihood that someone could divert the check to personal use. Banks will not give an individual cash when presented with a check that has this type of endorsement.

The mail clerks prepare, in triplicate, a list of the checks received each day. This list shows the name of the check issuer, the purpose of the payment, and the amount of the check. Each mail clerk signs the list to establish responsibility for the data. The original copy of the list, along with the checks, is then sent to the cashier's department. A copy of the list is sent to the accounting department for recording in the accounting records. The clerks also keep a copy. This process provides excellent internal control for the company. By employing two clerks, the chance of fraud is reduced. Each clerk knows he or she is being observed by the other clerk(s). To engage in fraud, they would have to collude. The customers who submit payments also provide control because they will contact the company with a complaint if they are not properly credited for payment. Because the cashier has access to cash but not the records, and the accounting department has access to records but not cash, neither can engage in undetected fraud.

**Example:**

L. R. Cortez is concerned about the control over cash receipts in his fast-food restaurant, Big Cheese. The restaurant has two cash registers. At no time do more than two employees take customer orders and enter sales. Work shifts for employees range from 4 to 8 hours. Cortez asks your help in installing a good system of internal control over cash receipts.

**Notes:**

1- Differentiate among the internal control principles of (1) establishing responsibility, (2) using physical controls, and (3) independent internal verification.

2- Design an effective system of internal control over cash receipts.

**Solution:**

Cortez should assign a separate cash register drawer to each employee at the start of each work shift, with register totals set at zero. Each employee should have access to only the assigned register drawer to enter all sales. Each customer should be given a receipt. At the end of the shift, the employee should do a cash count. A separate employee should compare the cash count with the register tape to be sure they agree.

In addition, Cortez should install an automated system that would enable the company to compare orders entered in the register to orders processed by the kitchen.

## 4.2. Cash Disbursements Controls:

Companies disburse cash for a variety of reasons, such as to pay expenses and liabilities or to purchase assets. Generally, internal control over cash disbursements is more effective when companies pay by check or electronic funds transfer (EFT) rather than by cash. One exception is payments for incidental amounts that are paid out of petty cash.

### Voucher System Controls:

Most medium and large companies use vouchers as part of their internal control over cash disbursements. A **voucher system** is a network of approvals by authorized individuals, acting independently, to ensure that all

disbursements by check are proper. The system begins with the authorization to incur a cost or expense. It ends with the issuance of a check for the liability incurred. A voucher is an authorization form prepared for each expenditure. Companies require vouchers for all types of cash disbursements except those from petty cash.

The starting point in preparing a voucher is to fill in the appropriate information about the liability on the face of the voucher. The vendor's invoice provides most of the needed information. Then, an employee in accounts payable records the voucher (in a journal called a **voucher register**) and files it according to the date on which it is to be paid. The company issues and sends a check on that date and stamps the voucher "paid." The paid voucher is sent to the accounting department for recording (in a journal called the **check register**). A voucher system involves two journal entries, one to record the liability when the voucher is issued and a second to pay the liability that relates to the voucher.

The use of a voucher system, whether done manually or electronically, improves internal control over cash disbursements. First, the authorization process inherent in a voucher system establishes responsibility. Each individual has responsibility to review the underlying documentation to ensure that it is correct. In addition, the voucher system keeps track of the documents that back up each transaction. By keeping these documents in one place, a supervisor can independently verify the authenticity of each transaction. Consider, for example, that Aesop University did not use a voucher system for transactions under $2,500. As a consequence, there was no independent verification of the documents, which enabled the employee to submit fake invoices to hide his unauthorized purchases.

## 4.3. Petty Cash Fund:

As you just learned, better internal control over cash disbursements is possible when companies make payments by check. However, using checks to pay small amounts is both impractical and a nuisance. For instance, a company would not want to write checks to pay for postage due, working lunches, or taxi fares. A common way of handling such payments, while maintaining satisfactory control, is to use a **petty cash fund** to pay relatively small amounts. The operation of a petty cash fund, often called an imprest system, involves

(1) establishing the fund.

(2) making payments from the fund.

(3) replenishing the fund.

### 4.3.1. Establishing the Petty Cash Fund:

Two essential steps in establishing a petty cash fund are:

(1) appointing a petty cash custodian who will be responsible for the fund.

(2) determining the size of the fund.

Ordinarily, a company expects the amount in the fund to cover anticipated disbursements for a three- to four-week period. To establish the fund, a company issues a check payable to the petty cash custodian for the stipulated amount. For example, if Laird Company decides to establish a $100 fund on March 1, the general journal entry is:

| | | | |
|---|---|---|---|
| Mar. 1 | Petty Cash | 100 | |
| | Cash | | 100 |
| | (To establish a petty cash fund) | | |

The fund custodian cashes the check and places the proceeds in a locked petty cash box or drawer. Most petty cash funds are established on a fixed amount basis. The company will make no additional entries to the Petty Cash account unless management changes the stipulated amount of the fund. For example, if Laird Company decides on July 1 to increase the size of the fund to $250, it would debit Petty Cash $150 and credit Cash $150.

### 4.3.2. Making Payments from The Petty Cash Fund:

The petty cash custodian has the authority to make payments from the fund that conform to prescribed management policies. Usually, management limits the size of expenditures that come from petty cash. Likewise, it may not permit use of the fund for certain types of transactions (such as making short-term loans to employees).

Each payment from the fund must be documented on a prenumbered petty cash receipt (or petty cash voucher), as shown in the following illustration. The signatures of both the fund custodian and the person receiving payment are required on the receipt. If other supporting documents such as a freight bill or invoice are available, they should be attached to the petty cash receipt.

No.7 LAIRD COMPANY
Petty Cash Receipt

Date ../../….

Paid to …… Amount $ ……..

For …….

Charge To ……..

Approved Received Payment

…….. Custodian ……

The petty cash custodian keeps the receipts in the petty cash box until the fund is replenished. The sum of the petty cash receipts and the money in the fund should equal the established total at all times. Management can (and should) make surprise counts at any time to determine whether the fund is being maintained correctly.

The company does not make an accounting entry to record a payment when it is made from petty cash. It is considered both inexpedient and unnecessary to do so. Instead, the company recognizes the accounting effects of each payment when it replenishes the fund.

### 4.3.3. Replenishing the Petty Cash Fund:

When the money in the petty cash fund reaches a minimum level, the company replenishes the fund. The petty cash custodian initiates a request for reimbursement. The individual prepares a schedule (or summary) of the payments that have been made and sends the schedule, supported by petty cash receipts and other documentation, to the treasurer's office. The treasurer's office examines the receipts and supporting documents to verify that proper payments from the fund were made. The treasurer then approves the request and issues a check to restore the fund to its established amount. At the same time, all supporting documentation is stamped "paid" so that it cannot be submitted again for payment.

To illustrate, assume that on March 15 Laird's petty cash custodian requests a check for $87. The fund contains $13 cash and petty cash receipts for postage $44, freight-out $38, and miscellaneous expenses $5. The general journal entry to record the check is as follows.

| | | | |
|---|---|---|---|
| Mar. 15 | Postage Expense | 44 | |
| | Freight-Out | 38 | |
| | Miscellaneous Expense | 5 | |
| | Cash | | 87 |
| | (To replenish petty cash fund) | | |

Note that the reimbursement entry does not affect the Petty Cash account. Replenishment changes the composition of the fund by replacing the petty cash receipts with cash. It does not change the balance in the fund.

Occasionally, in replenishing a petty cash fund, the company may need to recognize a cash shortage or overage. This results when the total of the cash plus receipts in the petty cash box does not equal the established amount of the petty cash fund. To illustrate, assume that Laird's petty cash custodian has only $12 in cash in the fund plus the receipts as listed. The request for reimbursement would therefore be for $88, and Laird would make the following entry.

| | | | |
|---|---|---|---|
| Mar. 15 | Postage Expense | 44 | |
| | Freight-Out | 38 | |
| | Miscellaneous Expense | 5 | |
| | Cash Over and Short | 1 | |
| | Cash | | 88 |
| | (To replenish petty cash fund) | | |

Conversely, if the custodian has $14 in cash, the reimbursement request would be for $86. The company would credit Cash Over and Short for $1 (overage). A company reports a debit balance in Cash Over and Short in the income

statement as miscellaneous expense. It reports a credit balance in the account as miscellaneous revenue.

The company closes Cash Over and Short to Income Summary at the end of the year. Companies should replenish a petty cash fund at the end of the accounting period, regardless of the cash in the fund. Replenishment at this time is necessary in order to recognize the effects of the petty cash payments on the financial statements.

**Example:**

Bateer Company established a $50 petty cash fund on July 1. On July 30, the fund had $12 cash remaining and petty cash receipts for postage $14, office supplies $10, and delivery expense $15. Prepare journal entries to establish the fund on July 1 and to replenish the fund on July 30.

**Solution:**

| | | | |
|---|---|---|---|
| July 1 | Petty Cash | 50 | |
| | Cash | | 50 |
| | (To establish petty cash fund) | | |
| | | | |
| 30 | Postage Expense | 14 | |
| | Supplies | 10 | |
| | Delivery Expense | 15 | |
| | Cash Over and Short | | 1 |
| | Cash ($50 - $12) | | 38 |
| | (To replenish petty) | | |

**Notes:**

1-To establish the fund, set up a separate general ledger account.

2- Determine how much cash is needed to replenish the fund:

subtract the cash remaining from the petty cash fund balance.

3- Total the petty cash receipts. Determine any cash over or short—the difference between the cash needed to replenish the fund and the total of the petty cash receipts.

4- Record the expenses incurred according to the petty cash receipts when replenishing the fund.

## (5) Identify the Control Features of a Bank Account:

The use of a bank contributes significantly to good internal control over cash. A company can safeguard its cash by using a bank as a depository and as a clearinghouse for checks received and written. Use of a bank minimizes the amount of currency that a company must keep on hand. Also, use of a bank facilitates the control of cash because it creates a double record of all bank transactions—one by the company and the other by the bank. The asset account Cash maintained by the company should have the same balance as the bank's liability account for that company. A bank reconciliation compares the bank's balance with the company's balance and explains any differences to make them agree.

Many companies have more than one bank account. For efficiency of operations and better control. Large companies, with tens of thousands of employees, may have a payroll bank account, as well as one or more general bank accounts. Also, a company may maintain several bank accounts in order to have more than one source for short-term loans when needed.

## 5.1. Making Bank Deposits:

An authorized employee, such as the head cashier, should make a company's bank deposits. Each deposit must be documented by a deposit slip (ticket). Deposit slips are prepared in duplicate. The bank retains the original; the depositor keeps the duplicate, machine-stamped by the bank to establish its authenticity.

## 5.2. Writing Checks:

A **check** is a written order signed by the depositor directing the bank to pay a specified sum of money to a designated recipient. There are three parties to a check:

(1) the **maker** (or drawer) who issues the check.

(2) the **bank** (or payer) on which the check is drawn, and

(3) the **payee** to whom the check is payable.

A check is a negotiable instrument that one party can transfer to another party by endorsement. Each check should be accompanied by an explanation of its purpose.

It is important to know the balance in the checking account at all times. To keep the balance current, the depositor should enter each deposit and check on running-balance memo forms (or online statements) provided by the bank or on the check stubs in the checkbook.

## 5.3. Bank Statements:

If you have a personal checking account, you are probably familiar with bank statements. A **bank statement** shows the depositor's bank transactions and balances. Each month, a depositor receives a statement from the bank. It shows:

(1) checks paid and other debits (such as debit card transactions or direct withdrawals for bill payments) that reduce the balance in the depositor's account.

(2) deposits and other credits that increase the balance in the depositor's account.

(3) the account balance after each day's transactions.

The bank statement lists in numerical sequence all "paid" checks, along with the date the check was paid and its amount. Upon paying a check, the bank stamps the check "paid"; a paid check is sometimes referred to as a canceled check. On the statement, the bank also includes memoranda explaining other debits and credits it made to the depositor's account.

### 5.3.1. Debit Memorandum:

Some banks charge a monthly fee for their services. Often, they charge this fee only when the average monthly balance in a checking account falls below a specified amount. They identify the fee, called a bank service charge, on the bank statement by a symbol such as **SC**. The bank also sends with the statement a debit memorandum explaining the charge noted on the statement. Other debit memoranda may also be issued for other bank services such as the cost of printing checks, issuing traveler's checks, and wiring funds to other locations. The symbol **DM** is often used for such charges.

Banks also use a debit memorandum when a deposited check from a customer "bounces" because of insufficient funds. For example, assume that J. R. Baron, a customer of Laird Company, sends a check for $425.60 to Laird Company for services performed. Unfortunately, Baron does not have sufficient funds at its bank to pay for these services. In such a case, Baron's bank marks the check **NSF** (not sufficient funds) and returns it to Laird's (the

depositor's) bank. Laird's bank then debits Laird's account by the symbol NSF on the bank statement. The bank sends the NSF check and debit memorandum to Laird as notification of the charge. Laird then records an Account Receivable from J. R. Baron (the writer of the bad check) and reduces cash for the NSF check.

### 5.3.2. Credit Memorandum:

Sometimes a depositor asks the bank to collect its notes receivable. In such a case, the bank will credit the depositor's account for the cash proceeds of the note. This is illustrated by the symbol **CM** on the Laird Company bank statement. The bank issues and sends with the statement a credit memorandum to explain the entry. Many banks also offer interest on checking accounts. The interest earned may be indicated on the bank statement by the symbol **CM** or **INT**.

## 5.4. Reconciling the Bank Account:

The bank and the depositor maintain independent records of the depositor's checking account. People tend to assume that the respective balances will always agree. In fact, the two balances are seldom the same at any given time, and both balances differ from the "correct" or "true" balance. Therefore, it is necessary to make the balance per books and the balance per bank agree with the correct or true amount—a process called reconciling the bank account. The need for agreement has two causes:

**1. Time lags** that prevent one of the parties from recording the transaction in the same period as the other party.

**2. Errors** by either party in recording transactions.

Time lags occur frequently. For example, several days may elapse between the time a company mails a check to a payee and the date the bank pays the check. Similarly, when the depositor uses the bank's night depository to make its deposits, there will be a difference of at least one day between the time the depositor records the deposit and the time the bank does so. A time lag also occurs whenever the bank mails a debit or credit memorandum to the depositor.

The incidence of errors depends on the effectiveness of the internal controls maintained by the company and the bank. Bank errors are infrequent. However, either party could accidentally record a $450 check as $45 or $540. In addition, the bank might mistakenly charge a check drawn by C. D. Berg to the account of C. D. Burg.

### 5.4.1. Reconciliation Procedure:

The bank reconciliation should be prepared by an employee who has no other responsibilities pertaining to cash. If a company fails to follow this internal control principle of independent internal verification, cash embezzlements may go unnoticed. For example, a cashier who prepares the reconciliation can embezzle cash and conceal the embezzlement by misstating the reconciliation. Thus, the bank accounts would reconcile, and the embezzlement would not be detected.

In reconciling the bank account, it is customary to reconcile the balance per books and balance per bank to their adjusted (correct or true) cash balances. The starting point in preparing the reconciliation is to enter the balance per bank statement and balance per books on the reconciliation schedule.

The following steps should reveal all the reconciling items that cause the difference between the two balances.

**Step 1. Deposits in transit.** Compare the individual deposits listed on the bank statement with deposits in transit from the preceding bank reconciliation and with the deposits per company records or duplicate deposit slips. Deposits recorded by the depositor that have not been recorded by the bank are the deposits in transit. Add these deposits to the balance per bank.

**Step 2. Outstanding checks.** Compare the paid checks shown on the bank statement with:

(a) checks outstanding from the previous bank reconciliation.

(b) checks issued by the company as recorded in the cash payments journal (or in the check register in your personal checkbook).

Issued checks recorded by the company but that have not yet been paid by the bank are outstanding checks. Deduct outstanding checks from the balance per bank.

**Step 3. Errors.** Note any errors discovered in the foregoing steps and list them in the appropriate section of the reconciliation schedule.

For example, if the company mistakenly recorded as $169 a paid check correctly written for $196, it would deduct the error of $27 from the balance per books. All errors made by the depositor are reconciling items in determining the adjusted cash balance per books. In contrast, all errors made by the bank are reconciling items in determining the adjusted cash balance per bank.

**Step 4. Bank memoranda.** Trace bank memoranda to the depositor's records. List in the appropriate section of the reconciliation schedule any unrecorded memoranda.

For example, the company would deduct from the balance per books a $5 debit memorandum for bank service charges. Similarly, it would add to the balance per books $32 of interest earned.

**Illustration of Bank Reconciliation:**

The bank statement for Laird Company shows a balance per bank of $15,907.45 on April 30, 2017. On this date the balance of cash per books is $11,589.45. Using the four reconciliation steps, Laird determines the following reconciling items.

**Step 1. Deposits in transit:**

April 30 deposit (received by bank on May 1). $2,201.40

**Step 2. Outstanding checks:**

No. 453, $3,000.00; no. 457, $1,401.30; no. 460, $1,502.70. 5,904.00

**Step 3. Errors:**

Laird wrote check no. 443 for $1,226.00 and the bank correctly paid that amount. However, Laird recorded the check as $1,262.00. 36.00

**Step 4. Bank memoranda:**

**a.** Debit—NSF check from J. R. Baron for $425.60. 425.60

**b.** Debit—Charge for printing company checks $30.00. 30.00

**c.** Credit—Collection of note receivable for $1,000 plus interest earned $50; less bank collection fee $15.00. 1,035.00

The following illustration shows Laird's bank reconciliation.

Note that checks no. 459 and 461 have been paid but check no. 460 is not listed. Thus, this check is outstanding. If a complete bank statement were provided, checks no. 453 and 457 would also not be listed. The amounts for these three checks are obtained from the company's cash payments records.

| Laird Company<br>Bank Reconciliation<br>April 30, 2017 | | |
|---|---|---|
| Cash balance per bank statement | | $ 15,907.45 |
| Add: Deposits in transit | | 2,201.40 |
| | | 18,108.85 |
| Less: Outstanding checks | | |
| No. 453 | $3,000.00 | |
| No. 457 | 1,401.30 | |
| No. 460 | 1,502.70 | 5,904.00 |
| **Adjusted cash balance per bank** | | **$12,204.85** |
| | | |
| Cash balance per books | | $ 11,589.45 |
| Add: Collection of note receivable $1,000, plus interest earned $50; less collection fee $15 | $1,035.00 | |
| Error in recording check no. 443 | 36.00 | 1,071.00 |
| | | 12,660.45 |
| Less: NSF check | 425.60 | |
| Bank service charge | 30.00 | 455.60 |
| **Adjusted cash balance per books** | | **$12,204.85** |

**Entries from Bank Reconciliation:**

The company records each reconciling item used to determine the adjusted cash balance per books. If the company does not journalize and post these items, the Cash account will not show the correct balance. Laird Company would make the following entries on April 30.

**1- Collection of Note Receivable:** This entry involves four accounts. Assuming that the interest of $50 has not been accrued and the collection fee is charged to Miscellaneous Expense, the entry is:

| | | | |
|---|---|---|---|
| Apr. 30 | Cash | 1,035.00 | |
| | Miscellaneous Expense | 15.00 | |
| | Notes Receivable | | 1,000.00 |
| | Interest Revenue | | 50.00 |
| | (To record collection of note receivable by bank) | | |

**2- Book Error:** The cash disbursements journal shows that check no. 443 was a payment on account to Andrea Company, a supplier. The correcting entry is:

| | | | |
|---|---|---|---|
| Apr. 30 | Cash | 36.00 | |
| | Accounts Payable-Andrea Company | | 36.00 |
| | (To correct error in recording check no. 443) | | |

**3- NSF Check:** As indicated earlier, an NSF check becomes an account receivable to the depositor. The entry is:

| | | | |
|---|---|---|---|
| Apr. 30 | Accounts Receivable- J.R. Baron | 425.60 | |
| | Cash | | 425.60 |
| | (To record NSF check) | | |

**4- Bank Service Charges:** Depositors debit check printing charges (DM) and other bank service charges (SC) to Miscellaneous Expense because they are usually nominal in amount. The entry is:

| | | | |
|---|---|---|---|
| Apr. 30 | Miscellaneous Expense | 30.00 | |
| | Cash | | 30.00 |
| | (To record charge for printing company checks) | | |

Instead of making four separate entries, Laird could combine them into one compound entry.

After Laird has posted the entries, the Cash account will show the following.

**Cash**

| | | | |
|---|---|---|---|
| Apr.30 Bal. | 11,589.45 | Apr.30 | 425.60 |
| 30 | 1,035.00 | 30 | 30.00 |
| 30 | 36.00 | | |
| Apr.30 Bal. | **12,204.85** | | |

The adjusted cash balance in the ledger should agree with the adjusted cash balance per books in the bank reconciliation.

What entries does the bank make? If the company discovers any bank errors in preparing the reconciliation, it should notify the bank. The bank then can make the necessary corrections in its records. The bank does not make any entries for deposits in transit or outstanding checks. Only when these items reach the bank will the bank record these items.

## 5.5. Electronic Funds Transfer (EFT) System:

It is not surprising that companies and banks have developed approaches to transfer funds among parties without the use of paper (deposit tickets, checks,

etc.). Such procedures, called electronic funds transfers (EFT), are disbursement systems that use wire, telephone, or computers to transfer cash balances from one location to another. Use of EFT is quite common. For example, many employees receive no formal payroll checks from their employers. Instead, employers send electronic payroll data to the appropriate banks. Also, individuals and companies now frequently make regular payments such as those for house, car, and utilities by EFT.

EFT transactions normally result in better internal control since no cash or checks are handled by company employees. This does not mean that opportunities for fraud are eliminated. In fact, the same basic principles related to internal control apply to EFT transfers. For example, without proper segregation of duties and authorizations, an employee might be able to redirect electronic payments into a personal bank account and conceal the theft with fraudulent accounting entries.

**Example:**

Sally Kist owns Linen Kist Fabrics. Sally asks you to explain how she should treat the following reconciling items when reconciling the company's bank account:

(1) a debit memorandum for an NSF check.

(2) a credit memorandum for a note collected by the bank.

(3) outstanding checks.

(4) a deposit in transit.

**Solution:**

Sally should treat the reconciling items as follows.

(1) NSF check: Deduct from balance per books.

(2) Collection of note: Add to balance per books.

(3) Outstanding checks: Deduct from balance per bank.

(4) Deposit in transit: Add to balance per bank.

## (6) Explain the Reporting of Cash:

**Cash** consists of coins, currency (paper money), checks, money orders, and money on hand or on deposit in a bank or similar depository. Companies report cash in two different statements: the balance sheet and the statement of cash flows. The balance sheet reports the amount of cash available at a given point in time. The statement of cash flows shows the sources and uses of cash during a period of time. In this section, we discuss some important points regarding the presentation of cash in the balance sheet.

When presented in a balance sheet, cash on hand, cash in banks, and petty cash are often combined and reported simply as Cash. Because it is the most liquid asset owned by the company, cash is listed first in the current assets section of the balance sheet.

### 6.1. Cash Equivalents:

Many companies use the designation "Cash and cash equivalents" in reporting cash. **Cash equivalents** are short-term, highly liquid investments that are both:

**1.** Readily convertible to known amounts of cash.

**2.** So near their maturity that their market value is relatively insensitive to changes in interest rates. Generally, only investments with original maturities of three months or less qualify under this definition.

**Delta Air Lines, Inc.**

**Balance Sheet (partial)**

**December 31,2013 (in millions)**

**Assets**

Current assets

| | |
|---|---|
| **Cash and cash equivalents** | **$2,844** |
| Short-term investments | 959 |
| **Restricted cash** | **122** |

Examples of cash equivalents are Treasury bills, commercial paper (short-term corporate notes), and money market funds. All typically are purchased with cash that is in excess of immediate needs.

### 6.2. Restricted Cash:

A company may have restricted cash, cash that is not available for general use but rather is restricted for a special purpose. For example, landfill companies are often required to maintain a fund of restricted cash to ensure they will have adequate resources to cover closing and clean-up costs at the end of a landfill site's useful life. McKesson Corp. recently reported restricted cash of $962 million to be paid out as the result of investor lawsuits.

Cash restricted in use should be reported separately on the balance sheet as restricted cash. If the company expects to use the restricted cash within the next year, it reports the amount as a current asset. When this is not the case, it reports the restricted funds as a noncurrent asset.

The previous illustration shows restricted cash reported in the financial statements of Delta Air Lines. The company is required to maintain restricted cash as collateral to support insurance obligations related to workers' compensation claims. Delta does not have access to these funds for general

use, and so it must report them separately, rather than as part of cash and cash equivalents.

**Glossary Review:**

**Bank reconciliation:** The process of comparing the bank's balance of an account with the company's balance and explaining any differences to make them agree.

**Bank service charge:** A fee charged by a bank for the use of its services.

**Bank statement:** A monthly statement from the bank that shows the depositor's bank transactions and balances.

**Cash:** Resources that consist of coins, currency, checks, money orders, and money on hand or on deposit in a bank or similar depository.

**Cash equivalents:** Short-term, highly liquid investments that can be converted to a specific amount of cash.

**Check:** A written order signed by a bank depositor, directing the bank to pay a specified sum of money to a designated recipient.

**Electronic funds transfer (EFT):** A disbursement system that uses wire, telephone, or computers to transfer funds from one location to another.

**Fraud:** A dishonest act by an employee that results in personal benefit to the employee at a cost to the employer.

**Fraud triangle:** The three factors that contribute to fraudulent activity by employees: opportunity, financial pressure, and rationalization.

**Internal control:** A process designed to provide reasonable assurance regarding the achievement of objectives related to operations, reporting, and compliance.

**NSF check:** A check that is not paid by a bank because of insufficient funds in a customer's bank account.

**Outstanding checks:** Checks issued and recorded by a company but not yet paid by the bank.

**Petty cash fund:** A cash fund used to pay relatively small amounts.

**Restricted cash:** Cash that must be used for a special purpose.

**Voucher:** An authorization form prepared for each payment in a voucher system.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** Which of the following is **not** an element of the fraud triangle?

(a) Rationalization. (b) Financial pressure.

(c) Segregation of duties. (d) Opportunity.

**2.** Which of the following was **not** a result of the Sarbanes-Oxley Act?

(a) Companies must fi le financial statements with the Internal Revenue Service.

(b) All publicly traded companies must maintain adequate internal controls.

(c) The Public Company Accounting Oversight Board was created to establish auditing standards and regulate auditor activity.

(d) Corporate executives and board of directors must ensure that controls are reliable and effective, and they can be fined or imprisoned for failure to do so.

**3.** The principles of internal control do **not** include:

(a) establishment of responsibility.

(b) documentation procedures.

(c) management responsibility.

(d) independent internal verification.

**4.** Permitting only designated personnel to handle cash receipts is an application of the principle of:

(a) segregation of duties.

(b) establishment of responsibility.

(c) independent internal verification.

(d) human resource controls.

**5.** The use of prenumbered checks in disbursing cash is an application of the principle of:

(a) establishment of responsibility.

(b) segregation of duties.

(c) physical controls.

(d) documentation procedures.

**6.** A company writes a check to replenish a $100 petty cash fund when the fund contains receipts of $94 and $4 in cash. In recording the check, the company should:

(a) debit Cash Over and Short for $2.

(b) debit Petty Cash for $94.

(c) credit Cash for $94.

(d) credit Petty Cash for $2.

**7.** In a bank reconciliation, deposits in transit are:

(a) deducted from the book balance.

(b) added to the book balance.

(c) added to the bank balance.

(d) deducted from the bank balance.

**8.** The reconciling item in a bank reconciliation that will result in an adjusting entry by the depositor is:

(a) outstanding checks.

(b) deposit in transit.

(c) a bank error.

(d) bank service charges.

**9.** Which of the following items in a cash drawer at November 30 is **not** cash?

(a) Money orders.

(b) Coins and currency.

(c) An NSF check.

(d) A customer check dated November 28.

**10.** Which of the following statements correctly describes the reporting of cash?

(a) Cash cannot be combined with cash equivalents.

(b) Restricted cash funds may be combined with cash.

(c) Cash is listed first in the current assets section.

(d) Restricted cash funds cannot be reported as a current asset.

# Exercises

**Exercise (1):**

Match each situation with the fraud triangle factor—opportunity, financial pressure, or rationalization—that best describes it.

1. An employee's monthly credit card payments are nearly 75% of his or her monthly earnings.
2. An employee earns minimum wage at a fi rm that has reported record earnings for each of the last five years.
3. An employee has an expensive gambling habit.
4. An employee has check-writing and signing responsibilities for a small company, as well as reconciling the bank account.

**Exercise (2):**

The internal control procedures in Valentine Company provide that:

1. Employees who have physical custody of assets do not have access to the accounting records.
2. Each month, the assets on hand are compared to the accounting records by an internal auditor.
3. A prenumbered shipping document is prepared for each shipment of goods to customers.

Identify the principles of internal control that are being followed.

**Exercise (3):**

Pennington Company has the following internal control procedures over cash disbursements. Identify the internal control principle that is applicable to each procedure.

1. Company checks are prenumbered.
2. The bank statement is reconciled monthly by an internal auditor.
3. Blank checks are stored in a safe in the treasurer's office.
4. Only the treasurer or assistant treasurer may sign checks.
5. Check-signers are not allowed to record cash disbursement transactions.

**Exercise (4):**

The following reconciling items are applicable to the bank reconciliation for Ellington Company: (1) outstanding checks, (2) bank debit memorandum for service charge, (3) bank credit memorandum for collecting a note for the depositor, and (4) deposits in transit.

Indicate how each item should be shown on a bank reconciliation.

**Exercise (5):**

The following control procedures are used in Mendy Lang's Boutique Shoppe for cash disbursements.

1. The company accountant prepares the bank reconciliation and reports any discrepancies to the owner.
2. The store manager personally approves all payments before signing and issuing checks.
3. Each week, 100 company checks are left in an unmarked envelope on a shelf behind the cash register.
4. After payment, bills are fi led in a paid invoice folder.
5. The company checks are unnumbered.

(a) For each procedure, explain the weakness in internal control, and identify the internal control principle that is violated.

(b) For each weakness, suggest a change in the procedure that will result in good internal control.

**Exercise (6):**

Setterstrom Company established a petty cash fund on May 1, cashing a check for $100. The company reimbursed the fund on June 1 and July 1 with the following results.

June 1: Cash in fund $1.75. Receipts: delivery expense $31.25, postage expense $39.00, and miscellaneous expense $25.00.

July 1: Cash in fund $3.25. Receipts: delivery expense $21.00, entertainment expense $51.00, and miscellaneous expense $24.75.

On July 10, Setterstrom increased the fund from $100 to $130.

Prepare journal entries for Setterstrom Company for May 1, June 1, July 1, and July 10.

**Exercise (7):**

Don Wyatt is unable to reconcile the bank balance at January 31. Don's reconciliation is as follows.

| | |
|---|---|
| Cash balance per bank | $3,560.20 |
| Add: NSF check | 490.00 |
| Less: Bank service charge | 25.00 |
| Adjusted balance per bank | $4,025.20 |

| | |
|---|---|
| Cash balance per books | $3,875.20 |
| Less: Deposits in transit | 530.00 |
| Add: Outstanding checks | 730.00 |
| Adjusted balance per books | $4,075.20 |

(a) Prepare a correct bank reconciliation.

(b) Journalize the entries required by the reconciliation.

**Exercise (8):**

The following information pertains to Crane Video Company.

1. Cash balance per bank, July 31, $7,263.

2. July bank service charge not recorded by the depositor $28.

3. Cash balance per books, July 31, $7,284.

4. Deposits in transit, July 31, $1,300.

5. Bank collected $700 note for Crane in July, plus interest $36, less fee $20. The collection has not been recorded by Crane, and no interest has been accrued.

6. Outstanding checks, July 31, $591.

(a) Prepare a bank reconciliation at July 31.

(b) Journalize the adjusting entries at July 31 on the books of Crane Video Company.

**Exercise (9):**

Wynn Company has recorded the following items in its financial records.

| | |
|---|---|
| Cash in bank | $ 42,000 |
| Cash in plant expansion fund | 100,000 |
| Cash on hand | 12,000 |
| Highly liquid investments | 34,000 |
| Petty cash | 500 |
| Receivables from customers | 89,000 |
| Stock investments | 61,000 |

The highly liquid investments had maturities of 3 months or less when they were purchased. The stock investments will be sold in the next 6 to 12 months. The plant expansion project will begin in 3 years.

(a) What amount should Wynn report as "Cash and cash equivalents" on its balance sheet?

(b) Where should the items not included in part (a) be reported on the balance sheet?

**Exercise (10):**

On May 31, 2017, Reber Company had a cash balance per books of $6,781.50. The bank statement from New York State Bank on that date showed a balance of $6,404.60. A comparison of the statement with the Cash account revealed the following facts.

1. The statement included a debit memo of $40 for the printing of additional company checks.
2. Cash sales of $836.15 on May 12 were deposited in the bank. The cash receipts journal entry and the deposit slip were incorrectly made for $886.15. The bank credited Reber Company for the correct amount.
3. Outstanding checks at May 31 totaled $576.25. Deposits in transit were $2,416.15.
4. On May 18, the company issued check No. 1181 for $685 to Lynda Carsen on account. The check, which cleared the bank in May, was incorrectly journalized and posted by Reber Company for $658.
5. A $3,000 note receivable was collected by the bank for Reber Company on May 31 plus $80 interest. The bank charged a collection fee of $20. No interest has been accrued on the note.

6. Included with the cancelled checks was a check issued by Stiner Company to Ted Cress for $800 that was incorrectly charged to Reber Company by the bank.

7. On May 31, the bank statement showed an NSF charge of $680 for a check issued by Sue Allison, a customer, to Reber Company on account.

(a) Prepare the bank reconciliation at May 31, 2017.

(b) Prepare the necessary adjusting entries for Reber Company at May 31, 2017.

# Chapter (4)

# Accounting for Receivables

# Accounting for Receivables

## Introduction:

Receivables are financial instruments according to the definition in IAS 32.11:
A **financial instrument** is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another company.
Receivables are recorded if conditions for revenue recognition are met but cash inflow has not yet occurred as:
– revenues on account or revenues from credit sales.
Receivables include any taxes the seller collects on behalf of the government, in particular VAT.

## (1) Recognizing Accounts Receivable:

The term **receivables** refers to amounts due from individuals and companies. Receivables are claims that are expected to be collected in cash. The management of receivables is a very important activity for any company that sells goods or services on credit.
Receivables are important because they represent one of a company's most liquid assets. For many companies, receivables are also one of the largest assets.
The relative significance of a company's receivables as a percentage of its assets depends on various factors: its industry, the time of year, whether it extends long-term financing, and its credit policies. To reflect important differences among receivables, they are frequently classified as:
(1) accounts receivable.
(2) notes receivable.
(3) other receivables.

**Accounts receivable:** are amounts customers owe on account. They result from the sale of goods and services. Companies generally expect to collect accounts receivable within 30 to 60 days. They are usually the most significant type of claim held by a company.

**Notes receivable:** are a written promise (as evidenced by a formal instrument) for amounts to be received. The note normally requires the collection of interest and extends for time periods of 60–90 days or longer. Notes and accounts receivable that result from sales transactions are often called trade receivables.

**Other receivables:** include nontrade receivables such as interest receivable, loans to company officers, advances to employees, and income taxes refundable. These do not generally result from the operations of the business. Therefore, they are generally classified and reported as separate items in the balance sheet.

**Recognizing Accounts Receivable:**

Recognizing accounts receivable is relatively straightforward. A service organization records a receivable when it performs service on account. A merchandiser records accounts receivable at the point of sale of merchandise on account. When a merchandiser sells goods, it increases (debits) Accounts Receivable and increases (credits) Sales Revenue.

The seller may offer terms that encourage early payment by providing a discount. Sales returns also reduce receivables. The buyer might find some of the goods unacceptable and choose to return the unwanted goods.

To review, assume that Jordache Co. on July 1, 2017, sells merchandise on account to Polo Company for $1,000, terms 2/10, n/30. On July 5, Polo returns merchandise with a sales price of $100 to Jordache Co. On July 11, Jordache receives payment from Polo Company for the balance due. The journal entries to record these transactions on the books of Jordache Co. are as follows. (Cost of goods sold entries are omitted.)

| | | | |
|---|---|---|---|
| July 1 | Accounts Receivable—Polo Company | 1,000 | |
| | Sales Revenue | | 1,000 |
| | (To record sales on account) | | |
| 5 | Sales Returns and Allowances | 100 | |
| | Accounts Receivable—Polo Company | | 100 |
| | (To record merchandise returned) | | |
| 11 | Cash ($900 - $18) | 882 | |
| | Sales Discounts ($900 x .02) | 18 | |
| | Accounts Receivable—Polo Company | | 900 |
| | (To record collection of accounts receivable) | | |

Some retailers issue their own credit cards. When you use a retailer's credit card, the retailer charges interest on the balance due if not paid within a specified period (usually 25–30 days).

To illustrate, assume that you use your JCPenney Company credit card to purchase clothing with a sales price of $300 on June 1, 2017. JCPenney will

increase (debit) Accounts Receivable for $300 and increase (credit) Sales Revenue for $300 (cost of goods sold entry omitted) as follows.

| | | | |
|---|---|---|---|
| June 1 | Accounts Receivable | 300 | |
| | Sales Revenue | | 300 |
| | (To record sale of merchandise) | | |

Assuming that you owe $300 at the end of the month and JCPenney charges 1.5% per month on the balance due, the adjusting entry that JCPenney makes to record interest revenue of $4.50 ($300 x 1.5%) on June 30 is as follows.

| | | | |
|---|---|---|---|
| June 30 | Accounts Receivable | 4.50 | |
| | Interest Revenue | | 4.50 |
| | (To record interest on amount due) | | |

**Example:**

On May 1, Wilton sold merchandise on account to Bates for $50,000, terms 3/15, net 45.

On May 4, Bates returns merchandise with a sales price of $2,000.

On May 16, Wilton receives payment from Bates for the balance due.

Prepare journal entries to record the May transactions on Wilton's books. (You may ignore cost of goods sold entries and explanations.)

**Solution:**

| | | | |
|---|---|---|---|
| May 1 | Accounts Receivable—Bates | 50,000 | |
| | Sales Revenue | | 50,000 |
| 4 | Sales Returns and Allowances | 2,000 | |
| | Accounts Receivable—Bates | | 2,000 |
| 16 | Cash ($48,000 - $1,440) | 46,560 | |
| | Sales Discounts ($48,000 x .03) | 1,440 | |
| | Accounts Receivable—Bates | | 48,000 |

**(2) Valuation of Accounts Receivable and Recording their Disposition:**

Companies report accounts receivable on the balance sheet as an asset. But determining the amount to report is sometimes difficult because some receivables will become uncollectible.

Each customer must satisfy the credit requirements of the seller before the credit sale is approved. Inevitably, though, some accounts receivable become uncollectible. For example, a customer may not be able to pay because of a decline in its sales revenue due to a downturn in the economy. Similarly, individuals may be laid off from their jobs or faced with unexpected hospital bills.

Companies record credit losses as Bad Debt Expense (or Uncollectible Accounts Expense). Such losses are a normal and necessary risk of doing business on a credit basis.

Two methods are used in accounting for uncollectible accounts:

(1) the direct write-off method.

(2) the allowance method.

**1. <u>Direct Write-Off Method for Uncollectible Accounts:</u>**

Under the **direct write-off method**, when a company determines a particular account to be uncollectible, it charges the loss to Bad Debt Expense. Assume, for example, that Warden Co. writes off as uncollectible M. E. Doran's $200 balance on December 12. Warden's entry is as follows.

| | | | |
|---|---|---|---|
| Dec. 12 | Bad Debt Expense | 200 | |
| | Accounts Receivable—M. E. Doran | | 200 |
| | (To record write-off of M. E. Doran account) | | |

Under this method, Bad Debt Expense will show only actual losses from uncollectibles. The company will report accounts receivable at its gross amount. Although this method is simple, its use can reduce the usefulness of both the income statement and balance sheet. Consider the following example. Assume that in 2017, Quick Buck Computer Company decided it could increase its revenues by offering computers to college students without requiring any money down and with no credit-approval process. On campuses across the country, it distributed one million computers with a selling price of $800 each. This increased Quick Buck's revenues and receivables by $800 million. The promotion was a huge success!

The 2017 balance sheet and income statement looked great. Unfortunately, during 2018, nearly 40% of the customers defaulted on their loans. This made the 2018 income statement and balance sheet look terrible.

Under the direct write-off method, companies often record bad debt expense in a period different from the period in which they record the revenue. The method does not attempt to match bad debt expense to sales revenue in the income statement. Nor does the direct write-off method show accounts receivable in the balance sheet at the amount the company actually expects to receive. Consequently, unless bad debt losses are insignificant, the direct write-off method is not acceptable for financial reporting purposes.

**2. <u>Allowance Method for Uncollectible Accounts:</u>**

The **allowance method** of accounting for bad debts involves estimating uncollectible accounts at the end of each period. This provides better matching on the income statement. It also ensures that companies state receivables on the balance sheet at their cash (net) realizable value. Cash (net) realizable value is the net amount the company expects to receive in cash. It excludes amounts that the company estimates it will not collect. Thus, this method reduces receivables in the balance sheet by the amount of estimated uncollectible receivables.

GAAP requires the allowance method for financial reporting purposes when bad debts are material in amount. This method has three essential features:

1. Companies estimate uncollectible accounts receivable. They match this estimated expense against revenues in the same accounting period in which they record the revenues.

2. Companies debit estimated uncollectibles to Bad Debt Expense and credit them to Allowance for Doubtful Accounts through an adjusting entry at the

end of each period. Allowance for Doubtful Accounts is a contra account to Accounts Receivable.

3. When companies write off a specific account, they debit actual uncollectibles to Allowance for Doubtful Accounts and credit that amount to Accounts Receivable.

● **Recording Estimated Uncollectibles:**

To illustrate the allowance method, assume that Hampson Furniture has credit sales of $1,200,000 in 2017. Of this amount, $200,000 remains uncollected at December 31. The credit manager estimates that $12,000 of these sales will be uncollectible. The adjusting entry to record the estimated uncollectibles increases (debits) Bad Debt Expense and increases (credits) Allowance for Doubtful Accounts, as follows.

| | | | |
|---|---|---|---|
| Dec. 31 | Bad Debt Expense | 12,000 | |
| | Allowance for Doubtful Accounts | | 12,000 |
| | (To record estimate of uncollectible accounts) | | |

Hampson reports Bad Debt Expense in the income statement as an operating expense (usually as a selling expense). Thus, the estimated uncollectibles are matched with sales in 2017. Hampson records the expense in the same year it made the sales. Allowance for Doubtful Accounts shows the estimated amount of claims on customers that the company expects will become uncollectible in the future. Companies use a contra account instead of a direct credit to Accounts Receivable because they do not know which customers will not pay. The credit balance in the allowance account will absorb the specific write-offs when they occur. As the following illustration shows, the company

deducts the allowance account from accounts receivable in the current assets section of the balance sheet.

| **Hampson Furniture** | | |
|---|---|---|
| **Balance Sheet (partial)** | | |
| Current assets | | |
| Cash | | $ 14,800 |
| **Accounts receivable** | **$200,000** | |
| **Less: Allowance for doubtful accounts** | **12,000** | **188,000** |
| Inventory | | 310,000 |
| Supplies | | 25,000 |
| Total current assets | | $537,800 |

The amount of $188,000 in the previous illustration represents the expected cash realizable value of the accounts receivable at the statement date. Companies do not close Allowance for Doubtful Accounts at the end of the fiscal year.

● **Recording the Write-Off of an Uncollectible Account:**

Companies use various methods of collecting past-due accounts, such as letters, calls, and legal action. When they have exhausted all means of collecting a past-due account and collection appears impossible, the company writes off the account. In the credit card industry, for example, it is standard practice to write off accounts that are 210 days past due. To prevent premature or unauthorized write-offs, authorized management personnel should formally approve each write-off. To maintain segregation of duties, the employee authorized to write off accounts should not have daily responsibilities related to cash or receivables.

To illustrate a receivables write-off, assume that the financial vice president of Hampson Furniture authorizes a write-off of the $500 balance owed by R.A. Ware on March 1, 2018. The entry to record the write-off is as follows.

| | | | |
|---|---|---|---|
| Mar. 1 | Allowance for Doubtful Accounts | 500 | |
| | Accounts Receivable- R.A. Ware | | 500 |
| | (Write off of R.A. Ware account) | | |

Bad Debt Expense does not increase when the write-off occurs. Under the allowance method, companies debit every bad debt write-off to the allowance account rather than to Bad Debt Expense. A debit to Bad Debt Expense would be incorrect because the company has already recognized the expense when it made the adjusting entry for estimated bad debts. Instead, the entry to record the write-off of an uncollectible account reduces both Accounts Receivable and Allowance for Doubtful Accounts. After posting, the general ledger accounts appear as shown in the following illustration.

**Accounts Receivable**

| | | | | | |
|---|---|---|---|---|---|
| Jan.1 | Bal. | 200,000 | Mar.1 | | 500 |
| Mar.1 | Bal. | 199,500 | | | |

**Allowance for Doubtful Accounts**

| | | | | | |
|---|---|---|---|---|---|
| Mar.1 | | 500 | Jan.1 | Bal. | 12,000 |
| | | | Mar.1 | Bal. | 11,500 |

A write-off affects only balance sheet accounts—not income statement accounts. The write-off of the account reduces both Accounts Receivable and Allowance for Doubtful Accounts. Cash realizable value in the balance sheet, therefore, remains the same, as in the following illustration.

| | **Before Write-Off** | **After Write-Off** |
|---|---|---|
| Accounts receivable | $ 200,000 | $ 199,500 |
| Allowance for doubtful accounts | 12,000 | 11,500 |
| **Cash realizable value** | **$188,000** | **$188,000** |

● **Recovery of an Uncollectible Account:**

A company collects from a customer after it has written off the account as uncollectible. The company makes two entries to record the recovery of a bad debt.

(1) It reverses the entry made in writing off the account. This reinstates the customer's account.

(2) It journalizes the collection in the usual manner.

To illustrate, assume that on July 1, R. A. Ware pays the $500 amount that Hampson had written off on March 1. Hampson makes the following entries.

| | | | |
|---|---|---|---|
| July 1 | Accounts Receivable- R.A. Ware | 500 | |
| | Allowance for Doubtful Accounts | | 500 |
| | (To reverse write-off of R.A. Ware account) | | |
| July 1 | Cash | 500 | |
| | Accounts Receivable-R.A. Ware | | 500 |
| | (To record collection from R.A. Ware) | | |

Note that the recovery of a bad debt, like the write-off of a bad debt, affects only balance sheet accounts. The net effect of the two entries above is a debit to Cash and a credit to Allowance for Doubtful Accounts for $500. Accounts Receivable and Allowance for Doubtful Accounts both increase in the first entry for two reasons.

First, the company made an error in judgment when it wrote off the account receivable.

Second, after R. A. Ware did pay, Accounts Receivable in the general ledger and Ware's account in the subsidiary ledger should show the collection for possible future credit purposes.

● **Estimating the Allowance:**

For Hampson Furniture, the amount of the expected uncollectibles was given. However, in "real life," companies must estimate that amount when they use the allowance method. Two bases are used to determine this amount:

(1) percentage of sales.

(2) percentage of receivables.

Both bases are generally accepted. The choice is a management decision. It depends on the relative emphasis that management wishes to give to expenses and revenues on the one hand or to cash realizable value of the accounts receivable on the other. The choice is whether to emphasize income statement or balance sheet relationships. The following illustration compares the two bases.

**Percentage of Sales**

Matching

Sales Revenue ⟷ Bad Debt Expense

**Emphasis on Income Statement Relationships**

**Percentage of Receivables**

Cash Realizable Value

Accounts Receivable ⟷ Allowance for Doubtful Accounts

**Emphasis on Balance Sheet Relationships**

The percentage-of-sales basis results in a better matching of expenses with revenues—an income statement viewpoint. The percentage-of-receivables basis produces the better estimate of cash realizable value—a balance sheet viewpoint. Under both bases, the company must determine its past experience with bad debt losses.

In the percentage-of-sales basis, management estimates what percentage of credit sales will be uncollectible. This percentage is based on past experience and anticipated credit policy. The company applies this percentage to either total credit sales or net credit sales of the current year. To illustrate, assume that Gonzalez Company elects to use the percentage-of-sales basis. It concludes that 1% of net credit sales will become uncollectible. If net credit sales for 2017 are $800,000, the estimated bad debt expense is $8,000 (1% x $800,000). The adjusting entry is as follows.

| | | | |
|---|---|---|---|
| Dec. 31 | Bad Debt Expense | 8,000 | |
| | Allowance for Doubtful Accounts | | 8,000 |
| | (To record estimated bad debts for year) | | |

After the adjusting entry is posted, assuming the allowance account already has a credit balance of $1,723, the accounts of Gonzalez Company will show the following.

**Bad Debt Expense**

| | | | | | |
|---|---|---|---|---|---|
| Dec.31 | Adj. | 8,000 | | | |

**Allowance for Doubtful Accounts**

| | | | | | |
|---|---|---|---|---|---|
| | | | Jan.1 | Bal. | 1,723 |
| | | | Dec.31 | Adj. | 8,000 |
| | | | Dec.31 | Bal. | 9,723 |

This basis of estimating uncollectibles emphasizes the matching of expenses with revenues. As a result, Bad Debt Expense will show a direct percentage relationship to the sales base on which it is computed. When the company makes the adjusting entry, it disregards the existing balance in Allowance for Doubtful Accounts. The adjusted balance in this account should be a reasonable approximation of the realizable value of the receivables. If actual write offs differ significantly from the amount estimated, the company should modify the percentage for future years.

Under the percentage-of-receivables basis, management estimates what percentage of receivables will result in losses from uncollectible accounts. The company prepares an aging schedule, in which it classifies customer balances by the length of time they have been unpaid. Because of its emphasis on time, the analysis is often called aging the accounts receivable.

After the company arranges the accounts by age, it determines the expected bad debt losses. It applies percentages based on past experience to the totals in each category. The longer a receivable is past due, the less likely it is to be collected. Thus, the estimated percentage of uncollectible debts increases as the number of days past due increases.

## Disposing of Accounts Receivable:

In the normal course of events, companies collect accounts receivable in cash and remove the receivables from the books. However, as credit sales and receivables have grown in significance, the "normal course of events" has changed. Companies now frequently sell their receivables to another company for cash, thereby shortening the cash-to-cash operating cycle.

Companies sell receivables for two major reasons. First, they may be the only reasonable source of cash. When money is tight, companies may not be able to borrow money in the usual credit markets. Or if money is available, the cost of borrowing may be prohibitive.

A second reason for selling receivables is that billing and collection are often time-consuming and costly. It is often easier for a retailer to sell the receivables to another party with expertise in billing and collection matters. Credit card companies such as MasterCard, Visa, and Discover specialize in billing and collecting accounts receivable.

### ● Sale of Receivables:

A common sale of receivables is a sale to a factor. A factor is a finance company or bank that buys receivables from businesses and then collects the payments directly from the customers. Factoring is a multibillion-dollar business. Factoring arrangements vary widely. Typically, the factor charges a commission to the company that is selling the receivables. This fee ranges from 1–3% of the amount of receivables purchased. To illustrate, assume that Hendredon Furniture factors $600,000 of receivables to Federal Factors. Federal Factors assesses a service charge of 2% of the amount of receivables sold. The journal entry to record the sale by Hendredon Furniture on April 2, 2017, is as follows.

| | | | |
|---|---|---|---|
| Apr. 2 | Cash | 588,000 | |
| | Service Charge Expense (2% x $600,000) | 12,000 | |
| | Accounts Receivable | | 600,000 |
| | (To record the sale of accounts receivable) | | |

If Hendredon often sells its receivables, it records the service charge expense as a selling expense. If the company infrequently sells receivables, it may report this amount in the "Other expenses and losses" section of the income statement.

● **Credit Card Sales:**

Over one billion credit cards are in use in the United States—more than three credit cards for every man, woman, and child in this country. Visa, MasterCard, and American Express are the national credit cards that most individuals use.

Three parties are involved when national credit cards are used in retail sales:

(1) The credit card issuer, who is independent of the retailer.

(2) The retailer.

(3) The customer.

A retailer's acceptance of a national credit card is another form of selling (factoring) the receivable.

**Accounting for Credit Card Sales:**

The retailer generally considers sales from the use of national credit card sales as cash sales. The retailer must pay to the bank that issues the card a fee for processing the transactions. The retailer records the credit card slips in a similar manner as checks deposited from a cash sale.

To illustrate, Anita Ferreri purchases $1,000 of compact discs for her restaurant from Karen Kerr Music Co., using her Visa First Bank Card. First Bank charges a service fee of 3%. The entry to record this transaction by Karen Kerr Music on March 22, 2017, is as follows.

| | | | |
|---|---|---|---|
| Mar. 22 | Cash | 970 | |
| | Service Charge Expense | 30 | |
| | Sales Revenue | | 1,000 |
| | (To record Visa credit card sale) | | |

**Example:**

Brule Co. has been in business five years. The unadjusted trial balance at the end of the current year shows:

| | |
|---|---|
| Accounts Receivable | $30,000 Dr. |
| Sales Revenue | $180,000 Cr. |
| Allowance for Doubtful Accounts | $2,000 Dr. |

Brule estimates bad debts to be 10% of receivables. Prepare the entry necessary to adjust Allowance for Doubtful Accounts.

**Notes:**

- Estimate the amount the company does not expect to collect.
- Consider the existing balance in the allowance account when using the percentage-of receivables basis.
- Report receivables at their cash (net) realizable value.

**Solution:**

The following entry should be made to bring the balance in Allowance for Doubtful Accounts up to a normal credit balance of $3,000 (10% x $30,000):

| | | | |
|---|---|---|---|
| | Bad Debt Expense [(10% x $30,000) + $2000] | 5,000 | |
| | Allowance for Doubtful Accounts | | 5,000 |
| | (To record estimate of uncollectible accounts) | | |

**(3) <u>Recognizing Notes Receivable:</u>**

Companies may also grant credit in exchange for a formal credit instrument known as a promissory note. A **promissory note** is a written promise to pay a specified amount of money on demand or at a definite time. Promissory notes may be used:

(1) when individuals and companies lend or borrow money.

(2) when the amount of the transaction and the credit period exceed normal limits.

(3) in settlement of accounts receivable.

In a promissory note, the party making the promise to pay is called the maker. The party to whom payment is to be made is called the payee. The note may specifically identify the payee by name or may designate the payee simply as the bearer of the note.

Notes receivable give the holder a stronger legal claim to assets than do accounts receivable. Like accounts receivable, notes receivable can be readily sold to another party. Promissory notes are negotiable instruments (as are checks), which means that they can be transferred to another party by endorsement.

Companies frequently accept notes receivable from customers who need to extend the payment of an outstanding account receivable. They often require such notes from high-risk customers. In some industries (such as the pleasure and sport boat industry), all credit sales are supported by notes. The majority of notes, however, originate from loans.

The basic issues in accounting for notes receivable are the same as those for accounts receivable. On the following pages, we look at these issues. Before we do, however, we need to consider two issues that do not apply to accounts receivable: determining the maturity date and computing interest.

**Determining the Maturity Date:**

When the life of a note is expressed in terms of months, you find the date when it matures by counting the months from the date of issue. For example, the maturity date of a three-month note dated May 1 is August 1. A note drawn on the last day of a month matures on the last day of a subsequent month. That is, a July 31 note due in two months matures on September 30.

When the due date is stated in terms of days, you need to count the exact number of days to determine the maturity date. In counting, omit the date the note is issued but include the due date. For example, the maturity date of a 60-day note dated July 17 is September 15, computed as follows.

| | | |
|---|---|---|
| Term of note | | 60 days |
| July (31217) | 14 | |
| August | 31 | 45 |
| **Maturity date: September** | | **15** |

**Computing Interest:**

The basic formula for computing interest on an interest-bearing note is as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| **Face Value of Note** | x | **Annual Interest Rate** | x | **Time in Terms of One Year** | = | **Interest** |

The interest rate specified in a note is an annual rate of interest. The time factor in the previous formula expresses the fraction of a year that the note is outstanding. When the maturity date is stated in days, the time factor is often the number of days divided by 360. When counting days, omit the date that the note is issued but include the due date. When the due date is stated in months, the time factor is the number of months divided by 12. The following illustration shows computation of interest for various time periods.

| **Terms of Note** | **Interest Computation** | |
|---|---|---|
| | **Face** x **Rate** x **Time** = | **Interest** |
| $ 730, 12%, 120 days | $ 730 x 12% x **120/360** = | $ 29.20 |
| $1,000, 9%, 6 months | $1,000 x 9% x **6/12** = | $ 45.00 |
| $2,000, 6%, 1 year | $2,000 x 6% x **1/1** = | $120.00 |

**Recognizing Notes Receivable:**

To illustrate the basic entry for notes receivable, we will use Calhoun Company's $1,000, two-month, 12% promissory note dated May 1. Assuming that Calhoun Company wrote the note to settle an open account, Wilma Company makes the following entry for the receipt of the note.

| | | | |
|---|---|---|---|
| May 1 | Notes Receivable | 1,000 | |
| | Accounts Receivable-Calhoun Company | | 1,000 |
| | (To record acceptance of Calhoun Company, note) | | |

The company records the note receivable at its face value, the amount shown on the face of the note. No interest revenue is reported when the note is accepted because the revenue recognition principle does not recognize revenue until the performance obligation is satisfied. Interest is earned

(accrued) as time passes. If a company lends money using a note, the entry is a debit to Notes Receivable and a credit to Cash in the amount of the loan.

**Example:**

Gambit Stores accepts from Leonard Co. a $3,400, 90-day, 6% note dated May 10 in settlement of Leonard's overdue account.

(a) What is the maturity date of the note?

(b) What is the interest payable at the maturity date?

**Notes:**

- Count the exact number of days to determine the maturity date. Omit the date the note is issued but include the due date.

- Compute the accrued interest.

**Solution:**

(a) The maturity date is August 8, computed as follows.

| | | |
|---|---|---|
| Term of note: | | 90 days |
| May (31-10) | 21 | |
| June | 30 | |
| July | 31 | 82 |
| Maturity date: August | | 8 |

(b) The interest payable at the maturity date is $51, computed as follows.

Face x Rate x Time = Interest

$3,400 x 6% x 90/360 = $51

## (4) Valuation of Notes Receivable, Recording their Disposition and Present and Analyze Receivables:

### ● Valuing Notes Receivable:

Valuing short-term notes receivable is the same as valuing accounts receivable. Like accounts receivable, companies report short-term notes receivable at their cash (net) realizable value. The notes receivable allowance account is Allowance for Doubtful Accounts. The estimations involved in determining cash realizable value and in recording bad debt expense and the related allowance are done similarly to accounts receivable.

### ● Disposing of Notes Receivable:

Notes may be held to their maturity date, at which time the face value plus accrued interest is due. In some situations, the maker of the note defaults, and the payee must make an appropriate adjustment. In other situations, similar to accounts receivable, the holder of the note speeds up the conversion to cash by selling the receivables.

### - Honor of Notes Receivable:

A note is honored when its maker pays in full at its maturity date. For each interest-bearing note, the amount due at maturity is the face value of the note plus interest for the length of time specified on the note.

To illustrate, assume that Wolder Co. lends Higley Co. $10,000 on June 1, accepting a five-month, 9% interest note. In this situation, interest is $375 ($10,000 x 9% x 5/12). The amount due, the maturity value, is $10,375 ($10,000 + $375). To obtain payment, Wolder (the payee) must present the note either to Higley Co. (the maker) or to the maker's agent, such as a bank.

If Wolder presents the note to Higley Co. on November 1, the maturity date, Wolder's entry to record the collection is as follows.

| | | | |
|---|---|---|---|
| Nov. 1 | Cash | 10,375 | |
| | Notes Receivable | | 10,000 |
| | Interest Revenue ($10,000 x 9% x 5/12) | | 375 |
| | (To record collection of Highly note and interest) | | |

- **Accrual of Interest Receivable:**

Suppose instead that Wolder Co. prepares financial statements as of September 30. The following timeline in presents this situation.

**June 1** 4 months **Sept. 30** 1-month **Nov. 1**

Earns $300 Earns $75

Receives $375

To reflect interest earned but not yet received, Wolder must accrue interest on September 30. In this case, the adjusting entry by Wolder is for four months of interest, or $300, as shown below.

| | | | |
|---|---|---|---|
| Sept. 30 | Interest Receivable ($10,000 x 9% x 4/12) | 300 | |
| | Interest Revenue | | 300 |
| | (To accrue 4 months' interest on Higley note) | | |

At the note's maturity on November 1, Wolder receives $10,375. This amount represents repayment of the $10,000 note as well as five months of interest, or $375, as shown below. The $375 is comprised of the $300 Interest Receivable accrued on September 30 plus $75 earned during October. Wolder's entry to record the honoring of the Higley note on November 1 is as follows.

| | | | |
|---|---|---|---|
| Nov. 1 | Cash [$10,000 + (10,000 x 9% x 5/12)] | 10,375 | |
| | Notes Receivable | | 10,000 |
| | Interest Receivable | | 300 |
| | Interest Revenue ($10,000 x 9% x 1/12) | | 75 |
| | (To record collection of Highly note and interest) | | |

In this case, Wolder credits Interest Receivable because the receivable was established in the adjusting entry on September 30.

- **Dishonor of Notes Receivable:**

A dishonored (defaulted) note is a note that is not paid in full at maturity. A dishonored note receivable is no longer negotiable. However, the payee still has a claim against the maker of the note for both the note and the interest. Therefore, the note holder usually transfers the Notes Receivable account to an Accounts Receivable account.

To illustrate, assume that Higley Co. on November 1 indicates that it cannot pay at the present time. The entry to record the dishonor of the note depends on whether Wolder Co. expects eventual collection. If it does expect eventual collection, Wolder Co. debits the amount due (face value and interest) on the

note to Accounts Receivable. It would make the following entry at the time the note is dishonored (assuming no previous accrual of interest).

| | | | |
|---|---|---|---|
| Nov. 1 | Accounts Receivable-Higley | 10,375 | |
| | Notes Receivable | | 10,000 |
| | Interest Revenue | | 375 |
| | (To record the disclosure of Higley note) | | |

If instead on November 1 there is no hope of collection, the note holder would write off the face value of the note by debiting Allowance for Doubtful Accounts. No interest revenue would be recorded because collection will not occur.

- **Sale of Notes Receivable:**

The accounting for the sale of notes receivable is recorded similarly to the sale of accounts receivable. The accounting entries for the sale of notes receivable are left for a more advanced course.

● **Statement Presentation and Analysis:**

**Presentation:**

Companies should identify in the balance sheet or in the notes to the financial statements each of the major types of receivables. Short-term receivables appear in the current assets section of the balance sheet. Short-term investments appear before short-term receivables because these investments are more liquid (nearer to cash). Companies report both the gross amount of receivables and the allowance for doubtful accounts.

In a multiple-step income statement, companies report bad debt expense and service charge expense as selling expenses in the operating expenses section. Interest revenue appears under "Other revenues and gains" in the nonoperating activities section of the income statement.

**- Analysis:**

Investors and corporate managers compute financial ratios to evaluate the liquidity of a company's accounts receivable. They use the accounts receivable turnover to assess the liquidity of the receivables. This ratio measures the number of times, on average, the company collects accounts receivable during the period. It is computed by dividing net credit sales (net sales less cash sales) by the average net accounts receivable during the year. Unless seasonal factors are significant, average net accounts receivable outstanding can be computed from the beginning and ending balances of net accounts receivable.

For example, in 2013 Cisco Systems had net sales of $38,029 million for the year. It had a beginning accounts receivable (net) balance of $4,369 million and an ending accounts receivable (net) balance of $5,470 million. Assuming that Cisco's sales were all on credit, its accounts receivable turnover is computed as follows.

| **Net Credit Sales** | ÷ | **Average Net Accounts Receivable** | = | **Accounts Receivable Turnover** |
|---|---|---|---|---|
| $38,029 | ÷ | $\frac{\$4,369 + \$5,470}{2}$ | = | **7.7 times** |

The result indicates an accounts receivable turnover of 7.7 times per year. The higher the turnover, the more liquid the company's receivables. A variant of

the accounts receivable turnover that makes the liquidity even more evident is its conversion into an average collection period in terms of days. This is done by dividing the accounts receivable turnover into 365 days.

For example, Cisco's turnover of 7.7 times is divided into 365 days, as shown in the following illustration, to obtain approximately 47 days. This means that it takes Cisco 47 days to collect its accounts receivable.

| **Days in Year** | ÷ | **Accounts Receivable Turnover** | = | **Average Collection Period in Days** |
|---|---|---|---|---|
| 365 days | ÷ | 7.7 times | = | **47 days** |

Companies frequently use the average collection period to assess the effectiveness of a company's credit and collection policies. The general rule is that the collection period should not greatly exceed the credit term period (that is, the time allowed for payment).

## Glossary Review:

**Accounts receivable:** Amounts owed by customers on account.

**Accounts receivable turnover:** A measure of the liquidity of accounts receivable; computed by dividing net credit sales by average net accounts receivable.

**Allowance method:** A method of accounting for bad debts that involves estimating uncollectible accounts at the end of each period.

**Average collection period:** The average amount of time that a receivable is outstanding; calculated by dividing 365 days by the accounts receivable turnover.

**Bad Debt Expense:** An expense account to record uncollectible receivables.

**Cash (net) realizable value:** The net amount a company expects to receive in cash.

**Direct write-off method:** A method of accounting for bad debts that involves expensing accounts at the time they are determined to be uncollectible.

**Dishonored (defaulted) note:** A note that is not paid in full at maturity.

**Notes receivable:** Written promise (as evidenced by a formal instrument) for amounts to be received.

**Other receivables:** Various forms of nontrade receivables, such as interest receivable and income taxes refundable.

**Payee:** The party to whom payment of a promissory note is to be made.

**Percentage-of-receivables basis:** Management estimates what percentage of receivables will result in losses from uncollectible accounts.

**Percentage-of-sales basis:** Management estimates what percentage of credit sales will be uncollectible.

**Promissory note:** A written promise to pay a specified amount of money on demand or at a definite time.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** Buehler Company on June 15 sells merchandise on account to Chaz Co. for $1,000, terms 2/10, n/30. On June 20, Chaz Co. returns merchandise worth $300 to Buehler Company. On June 24, payment is received from Chaz Co. for the balance due. What is the amount of cash received?

(a) $700.
(c) $686.
(b) $680.
(d) None of the above.

**2.** Which of the following approaches for bad debts is best described as a balance sheet method?

(a) Percentage-of-receivables basis.
(b) Direct write-off method.
(c) Percentage-of-sales basis.
(d) Both percentage-of-receivables basis and direct write-off method.

**3.** Net sales for the month are $800,000, and bad debts are expected to be 1.5% of net sales. The company uses the percentage-of-sales basis. If Allowance for Doubtful Accounts has a credit balance of $15,000 before adjustment, what is the balance after adjustment?

(a) $15,000.
(c) $23,000.
(b) $27,000.
(d) $31,000.

**4.** In 2017, Roso Carlson Company had net credit sales of $750,000. On January 1, 2017, Allowance for Doubtful Accounts had a credit balance of $18,000. During 2017, $30,000 of uncollectible accounts receivable were written off. Past experience indicates that 3% of net credit sales become

uncollectible. What should be the adjusted balance of Allowance for Doubtful Accounts at December 31, 2017?

(a) $10,050.
(c) $22,500.
(b) $10,500.
(d) $40,500.

**5.** Blinka Retailers accepted $50,000 of Citibank Visa credit card charges for merchandise sold on July 1. Citibank charges 4% for its credit card use. The entry to record this transaction by Blinka Retailers will include a credit to Sales Revenue of $50,000 and a debit(s) to:

(a) Cash $48,000 and Service Charge Expense $2,000
(b) Accounts Receivable $48,000 and Service Charge Expense $2,000
(c) Cash $50,000
(d) Accounts Receivable $50,000

**6.** An analysis and aging of the accounts receivable of Prince Company at December 31 reveals the following data. Accounts receivable $800,000 Allowance for doubtful accounts per books before adjustment 50,000 Amounts expected to become uncollectible 65,000

The cash realizable value of the accounts receivable at December 31, after adjustment, is:

(a) $685,000.
(c) $800,000.
(b) $750,000.
(d) $735,000.

**7.** One of the following statements about promissory notes is incorrect. The **incorrect** statement is:

(a) The party making the promise to pay is called the maker.
(b) The party to whom payment is to be made is called the payee.

(c) A promissory note is not a negotiable instrument.

(d) A promissory note is often required from high risk customers.

**8.** Accounts and notes receivable are reported in the current assets section of the balance sheet at:

(a) cash (net) realizable value.

(b) net book value.

(c) lower-of-cost-or-net realizable value.

(d) invoice cost.

**9.** Oliveras Company had net credit sales during the year of $800,000 and cost of goods sold of $500,000. The balance in accounts receivable at the beginning of the year was $100,000, and the end of the year it was $150,000. What were the accounts receivable turnover and the average collection period in days?

(a) 4.0 and 91.3 days.

(b) 5.3 and 68.9 days.

(c) 6.4 and 57 days.

(d) 8.0 and 45.6 days.

**10.** Receivables are frequently classified as:

(a) accounts receivable, company receivables, and other receivables.

(b) accounts receivable, notes receivable, and employee receivables.

(c) accounts receivable and general receivables.

(d) accounts receivable, notes receivable, and other receivables.

# Exercises

**Exercise (1):**

Record the following transactions on the books of RAS Co.

(a) On July 1, RAS Co. sold merchandise on account to Waegelein Inc. for $17,200, terms 2/10, n/30.

(b) On July 8, Waegelein Inc. returned merchandise worth $3,800 to RAS Co.

(c) On July 11, Waegelein Inc. paid for the merchandise.

**Exercise (2):**

At the end of 2017, Carpenter Co. has accounts receivable of $700,000 and an allowance for doubtful accounts of $54,000. On January 24, 2018, the company learns that its receivable from Megan Gray is not collectible, and management authorizes a write-off of $6,200.

(a) Prepare the journal entry to record the write-off.

(b) What is the cash realizable value of the accounts receivable (1) before the write-off and (2) after the write-off?

**Exercise (3):**

Kingston Co. uses the percentage-of-receivables basis to record bad debt expense. It estimates that 1% of accounts receivable will become uncollectible. Accounts receivable are $420,000 at the end of the year, and the allowance for doubtful accounts has a credit balance of $1,500.

(a) Prepare the adjusting journal entry to record bad debt expense for the year.

(b) If the allowance for doubtful accounts had a debit balance of $800 instead of a credit balance of $1,500, determine the amount to be reported for bad debt expense.

**Exercise (4):**

The ledger of Costello Company at the end of the current year shows Accounts Receivable $110,000, Sales Revenue $840,000, and Sales Returns and Allowances $20,000.

(a) If Costello uses the direct write-off method to account for uncollectible accounts, journalize the adjusting entry at December 31, assuming Costello determines that L. Dole's $1,400 balance is uncollectible.

(b) If Allowance for Doubtful Accounts has a credit balance of $2,100 in the trial balance, journalize the adjusting entry at December 31, assuming bad debts are expected to be (1) 1% of net sales, and (2) 10% of accounts receivable.

(c) If Allowance for Doubtful Accounts has a debit balance of $200 in the trial balance, journalize the adjusting entry at December 31, assuming bad debts are expected to be (1) 0.75% of net sales and (2) 6% of accounts receivable.

**Exercise (5):**

Presented below are selected transactions of Molina Company. Molina sells in large quantities to other companies and also sells its product in a small retail outlet.

| | | |
|---|---|---|
| March | 1 | Sold merchandise on account to Dodson Company for $5,000, terms 2/10, n/30. |
| | 3 | Dodson Company returned merchandise worth $500 to Molina. |
| | 9 | Molina collected the amount due from Dodson Company from the March 1 sale. |

15 Molina sold merchandise for $400 in its retail outlet. The customer used Molina credit card.

31 Molina added 1.5% monthly interest to the customer's credit card balance.

Prepare journal entries for the transactions above.

**Exercise (6):**

On December 31, 2017, Ling Co. estimated that 2% of its net sales of $450,000 will become uncollectible. The company recorded this amount as an addition to Allowance for Doubtful Accounts. On May 11, 2018, Ling Co. determined that the Jeff Shoemaker account was uncollectible and wrote off $1,100. On June 12, 2018, Shoemaker paid the amount previously written off. Prepare the journal entries on December 31, 2017, May 11, 2018, and June 12, 2018.

**Exercise (7):**

Presented below are two independent situations.

(a) On April 2, Jennifer Elston uses her JCPenney Company credit card to purchase merchandise from a JCPenney store for $1,500. On May 1, Elston is billed for the $1,500 amount due. Elston pays $500 on the balance due on May 3. Elston receives a bill dated June 1 for the amount due, including interest at 1.0% per month on the unpaid balance as of May 3.

Prepare the entries on JCPenney Co.'s books related to the transactions that occurred on April 2, May 3, and June 1.

(b) On July 4, Spangler's Restaurant accepts a Visa card for a $200 dinner bill. Visa charges a 2% service fee. Prepare the entry on Spangler's books related to this transaction.

**Exercise (8):**

Elburn Supply Co. has the following transactions related to notes receivable during the last 2 months of 2017. The company does not make entries to accrue interest except at December 31.

Nov. 1 Loaned $30,000 cash to Manny Lopez on a 12-month, 10% note.

Dec. 11 Sold goods to Ralph Kremer, Inc., receiving a $6,750, 90-day, 8% note.

16 Received a $4,000, 180-day, 9% note in exchange for Joe Fernetti's outstanding accounts receivable.

31 Accrued interest revenue on all notes receivable.

(a) Journalize the transactions for Elburn Supply Co.

(b) Record the collection of the Lopez note at its maturity in 2018.

**Exercise (9):**

On May 2, McLain Company lends $9,000 to Chang, Inc., issuing a 6-month, 9% note. At the maturity date, November 2, Chang indicates that it cannot pay.

(a) Prepare the entry to record the issuance of the note.

(b) Prepare the entry to record the dishonor of the note, assuming that McLain Company expects collection will occur.

(c) Prepare the entry to record the dishonor of the note, assuming that McLain Company does not expect collection in the future.

**Exercise (10):**

Kerwick Company had accounts receivable of $100,000 on January 1, 2017. The only transactions that affected accounts receivable during 2017 were net credit sales of $1,000,000, cash collections of $920,000, and accounts written off of $30,000.

(a) Compute the ending balance of accounts receivable.

(b) Compute the accounts receivable turnover for 2017.

(c) Compute the average collection period in days.

**Exercise (11):**

At December 31, 2016, House Co. reported the following information on its balance sheet.

| | |
|---|---|
| Accounts receivable | $960,000 |
| Less: Allowance for doubtful accounts | 80,000 |

During 2017, the company had the following transactions related to receivables.

1. Sales on account $3,700,000
2. Sales returns and allowances 50,000
3. Collections of accounts receivable 2,810,000
4. Write-offs of accounts receivable deemed uncollectible 90,000
5. Recovery of bad debts previously written off as uncollectible 29,000

(a) Prepare the journal entries to record each of these five transactions. Assume that no cash discounts were taken on the collections of accounts receivable.

(b) Enter the January 1, 2017, balances in Accounts Receivable and Allowance for Doubtful Accounts, post the entries to the two accounts (use T-accounts), and determine the balances.

(c) Prepare the journal entry to record bad debt expense for 2017, assuming that an aging of accounts receivable indicates that expected bad debts are $115,000.

(d) Compute the accounts receivable turnover for 2017 assuming the expected bad debt information provided in (c).

**Exercise (12):**

On January 1, 2017, Harter Company had Accounts Receivable $139,000, Notes Receivable $25,000, and Allowance for Doubtful Accounts $13,200. The note receivable is from Willingham Company. It is a 4-month, 9% note dated December 31, 2016. Harter Company prepares financial statements annually at December 31. During the year, the following selected transactions occurred.

| | | |
|---|---|---|
| Jan. | 5 | Sold $20,000 of merchandise to Sheldon Company, terms n/15. |
| | 20 | Accepted Sheldon Company's $20,000, 3-month, 8% note for balance due. |
| Feb. | 18 | Sold $8,000 of merchandise to Patwary Company and accepted Patwary's $8,000, 6-month, 9% note for the amount due. |
| Apr. | 20 | Collected Sheldon Company note in full. |
| | 30 | Received payment in full of Willingham Company on the amount due. |
| | 25 | Accepted Potter Inc.'s $6,000, 3-month, 7% note in settlement of a past-due balance on account. |
| Aug. | 18 | Received payment in full from Patwary Company on note due. |
| | 25 | The Potter Inc. note was dishonored. Potter Inc. is not bankrupt; future payment is anticipated. |

Sept. 1 Sold $12,000 of merchandise to Stanbrough Company and accepted a $12,000, 6-month, 10% note for the amount due.

Journalize the transactions.

# Chapter (5)

# Plant Assets, Natural Resources, and Intangible Assets

# Plant Assets, Natural Resources, and Intangible Assets

## (1) Accounting for plant asset expenditures:

Plant assets are resources that have three characteristics. They have a physical substance (a definite size and shape), are used in the operations of a business, and are not intended for sale to customers. They are also called property, plant, and equipment; plant and equipment; and fixed assets. These assets are expected to be of use to the company for a number of years. Except for land, plant assets decline in service potential over their useful lives.

Because plant assets play a key role in ongoing operations, companies keep plant assets in good operating condition. They also replace worn-out or outdated plant assets, and expand productive resources as needed.

### 1.1. Determining the Cost of Plant Assets:

The historical cost principle requires that companies record plant assets at cost. Cost consists of all expenditures necessary to acquire the asset and make it ready for its intended use. For example, the cost of factory machinery includes the purchase price, freight costs paid by the purchaser, and installation costs. Once cost is established, the company uses that amount as the basis of accounting for the plant asset over its useful life.

In the following sections, we explain the application of the historical cost principle to each of the major classes of plant assets.

#### 1.1.1. Land:

Companies often use land as a building site for a manufacturing plant or office building. The cost of land includes:

(1) the cash purchase price.

(2) closing costs such as title and attorney's fees.

(3) real estate brokers' commissions.

(4) accrued property taxes and other liens assumed by the purchaser.

For example, if the cash price is $50,000 and the purchaser agrees to pay accrued taxes of $5,000, the cost of the land is $55,000.

Companies record as debits (increases) to the Land account all necessary costs incurred to make land ready for its intended use. When a company acquires vacant land, these costs include expenditures for clearing, draining, filling, and grading. Sometimes the land has a building on it that must be removed before construction of a new building. In this case, the company debits to the Land account all demolition and removal costs, less any proceeds from salvaged materials.

To illustrate, assume that Hayes Company acquires real estate at a cash cost of $100,000. The property contains an old warehouse that is razed at a net cost of $6,000 ($7,500 in costs less $1,500 proceeds from salvaged materials). Additional expenditures are the attorney's fee, $1,000, and the real estate broker's commission, $8,000. The cost of the land is $115,000, computed as shown below:

**Land**

| | |
|---|---|
| Cash price of property | $ 100,000 |
| Net removal cost of warehouse ($7,500 - $1,500) | 6,000 |
| Attorney's fee | 1,000 |
| Real estate broker's commission | 8,000 |
| **Cost of land** | **$115,000** |

**Computation of cost of land**

Hayes makes the following entry to record the acquisition of the land.

| | | | |
|---|---|---|---|
| | Land | 115,000 | |
| | Cash | | 115,000 |
| | (To record purchase of land) | | |

### 1.1.2. Land Improvements:

Land improvements are structural additions made to land. Examples are driveways, parking lots, fences, landscaping, and underground sprinklers. The cost of land improvements includes all expenditures necessary to make the improvements ready for their intended use. For example, the cost of a new parking lot for Home Depot includes the amount paid for paving, fencing, and lighting. Thus, Home Depot debits to Land Improvements the total of all of these costs. Land improvements have limited useful lives, and their maintenance and replacement are the responsibility of the company. As a result, companies expense (depreciate) the cost of land improvements over their useful lives.

### 1.1.3. Buildings:

Buildings are facilities used in operations, such as stores, offices, factories, warehouses, and airplane hangars. Companies debit to the Buildings account all necessary expenditures related to the purchase or construction of a building. When a building is purchased, such costs include the purchase price, closing costs (attorney's fees, title insurance, etc.), and real estate broker's commission. Costs to make the building ready for its intended use include

expenditures for remodeling and replacing or repairing the roof, floors, electrical wiring, and plumbing.

When a new building is constructed, cost consists of the contract price plus payments for architects' fees, building permits, and excavation costs.

In addition, companies charge certain interest costs to the Buildings account. Interest costs incurred to finance the project are included in the cost of the building when a significant period of time is required to get the building ready for use. In these circumstances, interest costs are considered as necessary as materials and labor. However, the inclusion of interest costs in the cost of a constructed building is limited to the construction period. When construction has been completed, the company records subsequent interest payments on funds borrowed to finance the construction as debits (increases) to Interest Expense.

### 1.1.4. Equipment:

**Equipment** includes assets used in operations, such as store check-out counters, office furniture, factory machinery, delivery trucks, and airplanes. The cost of equipment, such as Rent-A-Wreck vehicles, consists of the cash purchase price, sales taxes, freight charges, and insurance during transit paid by the purchaser. It also includes expenditures required in assembling, installing, and testing the unit. However, Rent-A-Wreck does not include motor vehicle licenses and accident insurance on company vehicles in the cost of equipment. These costs represent annual recurring expenditures and do not benefit future periods. Thus, they are treated as expenses as they are incurred. To illustrate, assume Merten Company purchases factory machinery at a cash price of $50,000. Related expenditures are for sales taxes $3,000, insurance

during shipping $500, and installation and testing $1,000. The cost of the factory machinery is $54,500, computed as follows:

**Factory Machinery**

| | |
|---|---|
| Cash price | $ 50,000 |
| Sales taxes | 3,000 |
| Insurance during shipping | 500 |
| Installation and testing | 1,000 |
| **Cost of factory machinery** | **$54,500** |

Merten makes the following summary entry to record the purchase and related expenditures.

| | | | |
|---|---|---|---|
| | Equipment | 54,500 | |
| | Cash | | 54,500 |
| | (To record purchase of factory machinery) | | |

For another example, assume that Lenard Company purchases a delivery truck at a cash price of $22,000. Related expenditures consist of sales taxes $1,320, painting and lettering $500, motor vehicle license $80, and a three-year accident insurance policy $1,600. The cost of the delivery truck is $23,820, computed as follows.

**Delivery Truck**

| | |
|---|---|
| Cash price | $ 22,000 |
| Sales taxes | 1,320 |
| Painting and lettering | 500 |
| **Cost of delivery truck** | **$23,820** |

Lenard treats the cost of the motor vehicle license as an expense and the cost of the insurance policy as a prepaid asset. Thus, Lenard makes the following entry to record the purchase of the truck and related expenditures:

| | | | |
|---|---|---|---|
| | Equipment | 23,820 | |
| | License Expense | 80 | |
| | Prepaid Insurance | 1,600 | |
| | Cash | | 25,500 |
| | (To record purchase of delivery truck and related expenditures) | | |

**1.2. Expenditures During Useful Life:**

During the useful life of a plant asset, a company may incur costs for ordinary repairs, additions, or improvements. Ordinary repairs are expenditures to maintain the operating efficiency and productive life of the unit. They usually are small amounts that occur frequently. Examples are motor tune-ups and oil changes, the painting of buildings, and the replacing of worn-out gears on machinery. Companies record such repairs as debits to Maintenance and Repairs Expense as they are incurred. Because they are immediately charged as an expense against revenues, these costs are often referred to as revenue expenditures.

In contrast, additions and improvements are costs incurred to increase the operating efficiency, productive capacity, or useful life of a plant asset. They are usually material in amount and occur infrequently. Additions and improvements increase the company's investment in productive facilities. Companies generally debit these amounts to the plant asset affected. They are often referred to as capital expenditures.

Companies must use good judgment in deciding between a revenue expenditure and capital expenditure. For example, assume that Rodriguez Co. purchases a number of wastepaper baskets. The proper accounting would appear to be to capitalize and then depreciate these wastepaper baskets over their useful life. However, Rodriguez will generally expense these wastepaper baskets immediately.

This practice is justified on the basis of materiality. Materiality refers to the impact of an item's size on a company's financial operations. The materiality concept states that if an item would not make a difference in decision-making, the company does not have to follow GAAP in reporting that item.

**Example:**

Assume that Drummond Heating and Cooling Co. purchases a delivery truck for $15,000 cash, plus sales taxes of $900 and delivery costs of $500. The buyer also pays $200 for painting and lettering, $600 for an annual insurance policy, and $80 for a motor vehicle license. Explain how each of these costs would be accounted for.

**Notes:**

- Identify expenditures made in order to get delivery equipment ready for its intended use.
- Treat operating costs as expenses.

**Solution:**

The first four payments ($15,000, $900, $500, and $200) are expenditures necessary to make the truck ready for its intended use. Thus, the cost of the truck is $16,600. The payments for insurance and the license are operating costs and therefore are expensed.

**(2) <u>Apply Depreciation Methods to Plant Assets:</u>**

Depreciation is the process of allocating to expense the cost of a plant asset over its useful (service) life in a rational and systematic manner. Cost allocation enables companies to properly match expenses with revenues in accordance with the expense recognition principle.

It is important to understand that depreciation is a process of cost allocation. It is not a process of asset valuation. No attempt is made to measure the change in an asset's fair value during ownership. So, the book value (cost less accumulated depreciation) of a plant asset may be quite different from its fair value. In fact, if an asset is fully depreciated, it can have a zero-book value but still have a fair value.

Depreciation applies to three classes of plant assets: land improvements, buildings, and equipment. Each asset in these classes is considered to be a depreciable asset. Why? Because the usefulness to the company and revenue producing ability of each asset will decline over the asset's useful life. Depreciation does not apply to land because its usefulness and revenue-producing ability generally remain intact over time. In fact, in many cases, the usefulness of land is greater over time because of the scarcity of good land sites. Thus, land is not a depreciable asset.

During a depreciable asset's useful life, its revenue-producing ability declines because of wear and tear. A delivery truck that has been driven 100,000 miles will be less useful to a company than one driven only 800 miles. Revenue-producing ability may also decline because of obsolescence. Obsolescence is the process of becoming out of date before the asset physically wears out.

For example, major airlines moved from Chicago's Midway Airport to Chicago- O'Hare International Airport because Midway's runways were too short for jumbo jets. Similarly, many companies replace their computers long

before they originally planned to do so because improvements in new computing technology make the old computers obsolete.

Recognizing depreciation on an asset does not result in an accumulation of cash for replacement of the asset. The balance in Accumulated Depreciation represents the total amount of the asset's cost that the company has charged to expense. It is not a cash fund.

Note that the concept of depreciation is consistent with the going concern assumption. The going concern assumption states that the company will continue in operation for the foreseeable future. If a company does not use a going concern assumption, then plant assets should be stated at their fair value. In that case, depreciation of these assets is not needed.

### 2.1. Factors in Computing Depreciation:

Three factors affect the computation of depreciation, as follows:

**1- Cost:** all expenditures necessary to acquire the asset and make it ready for intended use. Companies record plant assets at cost, in accordance with the historical cost principle.

**2- Useful Life:** estimate of the expected life based on need for repair, service life, and vulnerability to obsolescence.

Useful life is also called service life, of the asset for its owner. Useful life may be expressed in terms of time, units of activity (such as machine hours), or units of output. Useful life is an estimate. In making the estimate, management considers such factors as the intended use of the asset, its expected repair and maintenance, and its vulnerability to obsolescence. Past experience with similar assets is often helpful in deciding on expected useful life.

**3- Salvage Value:** estimate of the asset's value at the end of its useful life.

This value may be based on the asset's worth as scrap or on its expected trade in value. Like useful life, salvage value is an estimate. In making the estimate, management considers how it plans to dispose of the asset and its experience with similar assets.

## 2.2. Depreciation Methods:

Depreciation is generally computed using one of the following methods:

**1.** Straight-line

**2.** Units-of-activity

**3.** Declining-balance

Each method is acceptable under generally accepted accounting principles. Management selects the method(s) it believes to be appropriate. The objective is to select the method that best measures an asset's contribution to revenue over its useful life. Once a company chooses a method, it should apply it consistently over the useful life of the asset. Consistency enhances the comparability of financial statements. Depreciation affects the balance sheet through accumulated depreciation and the income statement through depreciation expense.

We will compare the three depreciation methods using the following data for a small delivery truck purchased by Barb's Florists on January 1, 2017.

| | |
|---|---|
| Cost | $13,000 |
| Expected salvage value | $ 1,000 |
| Estimated useful life in years | 5 |
| Estimated useful life in miles | 100,000 |

### 2.2.1. Straight-Line Method:

Under the **straight-line method**, companies expense the same amount of depreciation for each year of the asset's useful life. It is measured solely by the passage of time.

To compute depreciation expense under the straight-line method, companies need to determine depreciable cost. Depreciable cost is the cost of the asset less its salvage value. It represents the total amount subject to depreciation. Under the straight-line method, to determine annual depreciation expense, we divide depreciable cost by the asset's useful life. The following illustration shows the computation of the first year's depreciation expense for Barb's Florists.

| | | | | |
|---|---|---|---|---|
| **Cost** | **—** | **Salvage Value** | = | **Depreciable Cost** |
| $13,000 | — | $1,000 | = | $12,000 |
| **Depreciable Cost** | **÷** | **Useful Life (in years)** | = | **Annual Depreciation Expense** |
| $12,000 | ÷ | 5 | = | **$2,400** |

Alternatively, we also can compute an annual **rate** of depreciation. In this case, the rate is 20% (100% ÷ 5 years). When a company uses an annual straight-line rate, it applies the percentage rate to the depreciable cost of the asset. The following illustration shows a depreciation schedule using an annual rate.

Barb's Florists

| | Computation | | | | Annual | End of Year | |
|---|---|---|---|---|---|---|---|
| | Depreciable | X | Depreciation | = | Depreciation | Accumulated | Book |
| Year | Cost | | Rate | | Expense | Depreciation | Value |
| 2017 | $ 12,000 | | 20% | | $ 2,400 | $ 2,400 | $10,600* |
| 2018 | 12,000 | | 20 | | 2,400 | 4,800 | 8,200 |
| 2019 | 12,000 | | 20 | | 2,400 | 7,200 | 5,800 |
| 2020 | 12,000 | | 20 | | 2,400 | 9,600 | 3,400 |
| 2021 | 12,000 | | 20 | | 2,400 | 12,000 | 1,000 |

*Book value = Cost ─ Accumulated depreciation = ($13,000 ─ $2,400).

Note that the depreciation expense of $2,400 is the same each year. The book value (computed as cost minus accumulated depreciation) at the end of the useful life is equal to the expected $1,000 salvage value.

What happens to these computations for an asset purchased during the year, rather than on January 1? In that case, it is necessary to prorate the annual depreciation on a time basis. If Barb's Florists had purchased the delivery truck on April 1, 2017, the company would own the truck for nine months of the first year (April–December). Thus, depreciation for 2017 would be $1,800 ($12,000 x 20% x 9/12 of a year).

The straight-line method predominates in practice. Large companies use the straight-line method. It is simple to apply, and it matches expenses with revenues when the use of the asset is reasonably uniform throughout the service life.

**Example:**

On January 1, 2017, Iron Mountain Ski Corporation purchased a new snow grooming machine for $50,000. The machine is estimated to have a 10-year life with a $2,000 salvage value. What journal entry would Iron Mountain Ski

Corporation make at December 31, 2017, if it uses the straight-line method of depreciation?

**Solution:**

Depreciation expense = $\frac{\text{Cost} - \text{Salvage value}}{\text{Useful life}} = \frac{\$50{,}000 - \$2{,}000}{10} = \$\ 4{,}800$

The entry to record the first year's depreciation would be:

| | | | |
|---|---|---|---|
| Dec.31 | Depreciation Expense | 4,800 | |
| | Accumulated Depreciation-Equipment | | 4,800 |
| | (To record annual depreciation on snow-grooming machine) | | |

### 2.2.2. Units-Of-Activity Method:

Under the **units-of-activity method**, useful life is expressed in terms of the total units of production or use expected from the asset, rather than as a time period. The units-of-activity method is ideally suited to factory machinery. Manufacturing companies can measure production in units of output or in machine hours. This method can also be used for such assets as delivery equipment (miles driven) and airplanes (hours in use). The units-of-activity method is generally not suitable for buildings or furniture because depreciation for these assets is more a function of time than of use.

To use this method, companies estimate the total units of activity for the entire useful life, and then divide these units into depreciable cost. The resulting number represents the depreciable cost per unit. The depreciable cost per unit is then applied to the units of activity during the year to determine the annual depreciation expense.

To illustrate, assume that Barb's Florists drives its delivery truck 15,000 miles

in the first year. The following illustration shows the units-of-activity formula and the computation of the first year's depreciation expense.

| | | | | |
|---|---|---|---|---|
| **Depreciable Cost** | **÷** | **Total Units of Activity** | **=** | **Depreciable Cost per Unit** |
| $12,000 | ÷ | 100,000 miles | = | $0.12 |

| | | | | |
|---|---|---|---|---|
| **Depreciable Cost per Unit** | x | **Units of Activity during the Year** | = | **Annual Depreciation Expense** |
| $0.12 | x | 15,000 miles | = | **$1,800** |

The units-of-activity depreciation schedule, using assumed mileage, is as follows.

Barb's Florists

| | Computation | | | Annual | End of Year | |
|---|---|---|---|---|---|---|
| | Units of | X Depreciable | = | Depreciation | Accumulated | Book |
| Year | Activity | Cost/Unit | | Expense | Depreciation | Value |
| 2017 | 15,000 | $ 0.12 | | $ 1,800 | $ 1,800 | $11,200* |
| 2018 | 30,000 | 0.12 | | 3,600 | 5,400 | 7,600 |
| 2019 | 20,000 | 0.12 | | 2,400 | 7,800 | 5,200 |
| 2020 | 25,000 | 0.12 | | 3,000 | 10,800 | 2,200 |
| 2021 | 10,000 | 0.12 | | 1,200 | 12,000 | 1,000 |

*($13,000 ─ $1,800).

This method is easy to apply for assets purchased mid-year. In such a case, the company computes the depreciation using the productivity of the asset for the partial year. The units-of-activity method is not nearly as popular as the straight-line method because it is often difficult for companies to reasonably estimate total activity. However, some very large companies, do use this method. When the productivity of an asset varies significantly from one period to another, the units-of-activity method results in the best matching of expenses with revenues.

### 2.2.3. Declining-Balance Method:

The **declining-balance method** produces a decreasing annual depreciation expense over the asset's useful life. The method is so named because the periodic depreciation is based on a declining book value (cost less accumulated depreciation) of the asset. With this method, companies compute annual depreciation expense by multiplying the book value at the beginning of the year by the declining-balance depreciation rate. The depreciation rate remains constant from year to year, but the book value to which the rate is applied declines each year.

At the beginning of the first year, book value is the cost of the asset. This is because the balance in accumulated depreciation at the beginning of the asset's useful life is zero. In subsequent years, book value is the difference between cost and accumulated depreciation to date. Unlike the other depreciation methods, the declining-balance method does not use depreciable cost in computing annual depreciation expense. That is, it ignores salvage value in determining the amount to which the declining-balance rate is applied. Salvage value, however, does limit the total depreciation that can be

taken. Depreciation stops when the asset's book value equals expected salvage value.

A common declining-balance rate is double the straight-line rate. The method is often called the double-declining-balance method. If Barb's Florists uses the double-declining-balance method, it uses a depreciation rate of 40% (2 x the straight-line rate of 20%). The following illustration shows the declining-balance formula and the computation of the first year's depreciation on the delivery truck.

| **Book Value at Beginning of Year** | x | **Declining-Balance Rate** | = | **Annual Depreciation Expense** |
|---|---|---|---|---|
| $13,000 | x | 40% | = | **$5,200** |

The depreciation schedule under this method is as follows.

Barb's Florists

| | Computation | | | Annual | End of Year | |
|---|---|---|---|---|---|---|
| | Book Value | x Depreciation | = | Depreciation | Accumulated | Book |
| Year | Beg. of Year | Rate | | Expense | Depreciation | Value |
| 2017 | $ 13,000 | 40% | | $ 5,200 | $ 5,200 | $7,800 |
| 2018 | 7,800 | 40 | | 3,120 | 8,320 | 4,680 |
| 2019 | 4,680 | 40 | | 1,872 | 10,192 | 2,808 |
| 2020 | 2,808 | 40 | | 1,123 | 11,315 | 1,685 |
| 2021 | 1,685 | 40 | | 685* | 12,000 | 1,000 |

*Computation of $674 ($1,685 x 40%) is adjusted to $685 in order for book value to equal salvage value.

The delivery equipment is 69% depreciated ($8,320 ÷ $12,000) at the end of the second year. Under the straight-line method, the truck would be

depreciated 40% ($4,800 ÷ $12,000) at that time. Because the declining-balance method produces higher depreciation expense in the early years than in the later years, it is considered an accelerated-depreciation method. The declining-balance method is compatible with the expense recognition principle. It matches the higher depreciation expense in early years with the higher benefits received in these years. It also recognizes lower depreciation expense in later years, when the asset's contribution to revenue is less. Some assets lose usefulness rapidly because of obsolescence. In these cases, the declining-balance method provides the most appropriate depreciation amount. When a company purchases an asset during the year, it must prorate the first year's declining-balance depreciation on a time basis. For example, if Barb's Florists had purchased the truck on April 1, 2017, depreciation for 2017 would become $3,900 ($13,000 x 40% x 9/12). The book value at the beginning of 2018 is then $9,100 ($13,000 ─ $3,900), and the 2018 depreciation is $3,640 ($9,100 x 40%). Subsequent computations would follow from those amounts.

**Comparison of Methods:**

The following illustration compares annual and total depreciation expense under each of the three methods for Barb's Florists.

| Year | Straight-Line | Units-of-Activity | Declining-Balance |
|---|---|---|---|
| 2017 | $ 2,400 | 1,800 | $ 5,200 |
| 2018 | 2,400 | 3,600 | 3,120 |
| 2019 | 2,400 | 2,400 | 1,872 |
| 2020 | 2,400 | 3,000 | 1,123 |
| 2021 | 2,400 | 1,200 | 685 |
| | $ 12,000 | $ 12,000 | $ 12,000 |

Annual depreciation varies considerably among the methods, but total depreciation expense is the same ($12,000) for the five-year period under all three methods. Each method is acceptable in accounting because each recognizes in a rational and systematic manner the decline in service potential of the asset.

## 2.3. Depreciation and Income Taxes:

The Internal Revenue Service (IRS) allows taxpayers to deduct depreciation expense when they compute taxable income. However, the IRS does not require taxpayers to use the same depreciation method on the tax return that is used in preparing financial statements.

Many corporations use straight-line in their financial statements to maximize net income. At the same time, they use a special accelerated depreciation method on their tax returns to minimize their income taxes. Taxpayers must use on their tax returns either the straight-line method or a special accelerated depreciation method called the Modified Accelerated Cost Recovery System (MACRS).

## 2.4. Revising Periodic Depreciation:

Depreciation is one example of the use of estimation in the accounting process. Management should periodically review annual depreciation expense. If wear and tear or obsolescence indicate that annual depreciation estimates are inadequate or excessive, the company should change the amount of depreciation expense.

When a change in an estimate is required, the company makes the change in current and future years. It does not change depreciation in prior periods. The

rationale is that continual restatement of prior periods would adversely affect confidence in financial statements. To determine the new annual depreciation expense, the company first computes the asset's depreciable cost at the time of the revision. It then allocates the revised depreciable cost to the remaining useful life.

To illustrate, assume that Barb's Florists decides on January 1, 2020, to extend the useful life of the truck one year (a total life of six years) and increase its salvage value to $2,200. The company has used the straight-line method to depreciate the asset to date. Depreciation per year was $2,400 [($13,000 ─ $1,000) ÷ 5]. Accumulated depreciation after three years (2017–2019) is $7,200 ($2,400 x 3), and book value is $5,800 ($13,000 ─ $7,200). The new annual depreciation is $1,200, computed as shown in the following illustration.

| | |
|---|---|
| Book value, 1/1/20 | $ 5,800 |
| Less: Salvage value | 2,200 |
| Depreciable cost | $ 3,600 |
| Remaining useful life | 3 years (2020–2022) |
| **Revised annual depreciation ($3,600 ÷ 3)** | **$ 1,200** |

Barb's Florists makes no entry for the change in estimate. On December 31, 2020, during the preparation of adjusting entries, it records depreciation expense of $1,200. Companies must describe in the financial statements significant changes in estimates.

**Example:**

Chambers Corporation purchased a piece of equipment for $36,000. It estimated a 6-year life and $6,000 salvage value. Thus, straight-line depreciation was $5,000 per year [($36,000 ─ $6,000) ÷ 6]. At the end of year three (before the depreciation adjustment), it estimated the new total life to be

10 years and the new salvage value to be $2,000. Compute the revised depreciation.

**Solution:**

Original depreciation expense = [($36,000 ─ $6,000) ÷ 6] = $5,000

Accumulated depreciation after 2 years = 2 x $5,000 = $10,000

Book value = $36,000 ─ $10,000 = $26,000

| | |
|---|---|
| Book value after 2 years of depreciation | $26,000 |
| Less: New salvage value | 2,000 |
| Depreciable cost | $24,000 |
| Remaining useful life | 8 years |
| Revised annual depreciation ($24,000 ÷ 8) | $ 3,000 |

**(3) Accounting for the Disposal of Plant Assets:**

Companies dispose of plant assets that are no longer useful to them. There are three ways in which companies make plant asset disposals: Retirement, Sale, and Exchange. Here we will study the accounting for the retirement and sale of plant assets.

**3.1. Retirement of Plant Assets:**

To illustrate the retirement of plant assets, assume that Hobart Company retires its computer printers, which cost $32,000. The accumulated depreciation on these printers is $32,000. The equipment, therefore, is fully depreciated (zero book value). The entry to record this retirement is as follows.

| | | | |
|---|---|---|---|
| | Accumulated Depreciation-Equipment | 32,000 | |
| | Equipment | | 32,000 |
| | (To record retirement of fully depreciated equipment) | | |

What happens if a fully depreciated plant asset is still useful to the company? In this case, the asset and its accumulated depreciation continue to be reported on the balance sheet, without further depreciation adjustment, until the company retires the asset. Reporting the asset and related accumulated depreciation on the balance sheet informs the financial statement reader that the asset is still in use. Once fully depreciated, no additional depreciation should be taken, even if an asset is still being used. In no situation can the accumulated depreciation on a plant asset exceed its cost.

If a company retires a plant asset before it is fully depreciated and no cash is received for scrap or salvage value, a loss on disposal occurs. For example, assume that Sunset Company discards delivery equipment that cost $18,000 and has accumulated depreciation of $14,000. The entry is as follows.

| | | | |
|---|---|---|---|
| | Accumulated Depreciation-Equipment | 14,000 | |
| | Loss on Disposal of Plant Assets | 4,000 | |
| | Equipment | | 18,000 |
| | (To record retirement of delivery equipment at loss) | | |

Companies report a loss on disposal of plant assets in the “Other expenses and losses” section of the income statement.

### 3.2. Sale of Plant Assets:

In a disposal by sale, the company compares the book value of the asset with the proceeds received from the sale. If the proceeds of the sale **exceed** the book value of the plant asset, **a gain on disposal occurs**. If the proceeds of the sale **are less than** the book value of the plant asset sold, **a loss on disposal occurs**.

### 3.2.1. Gain on Sale:

To illustrate a gain on sale of plant assets, assume that on July 1, 2017, Wright Company sells office furniture for $16,000 cash. The office furniture originally cost $60,000. As of January 1, 2017, it had accumulated depreciation of $41,000. Depreciation for the first six months of 2017 is $8,000. Wright records depreciation expense and updates accumulated depreciation to July 1 with the following entry.

| | | | |
|---|---|---|---|
| July 1 | Depreciation Expense | 8,000 | |
| | Accumulated Depreciation-Equipment | | 8,000 |
| | (To record depreciation expense for the first 6 months of 2017) | | |

After the accumulated depreciation balance is updated, the company computes the gain or loss. The gain or loss is the difference between the proceeds from the sale and the book value at the date of disposal. The following illustration shows this computation for Wright Company, which has a gain on disposal of $5,000.

| | |
|---|---|
| Cost of office furniture | $60,000 |
| Less: Accumulated depreciation ($41,000 + $8,000) | 49,000 |
| Book value at date of disposal | 11,000 |
| Proceeds from sale | 16,000 |
| **Gain on disposal of plant asset** | **$ 5,000** |

Wright records the sale and the gain on disposal of the plant asset as follows.

| | | | |
|---|---|---|---|
| July 1 | Cash | 16,000 | |
| | Accumulated Depreciation-Equipment | 49,000 | |
| | Equipment | | 60,000 |
| | Gain on Sale of Plant Assets | | 5,000 |
| | (To record sale of equipment at a gain) | | |

Companies report a gain on disposal of plant assets in the "Other revenues and gains" section of the income statement.

### 3.2.2. Loss on Sale:

Assume that instead of selling the office furniture for $16,000, Wright sells it for $9,000. In this case, Wright computes a loss of $2,000 as follows.

| | |
|---|---|
| Cost of office furniture | $60,000 |
| Less: Accumulated depreciation | 49,000 |
| Book value at date of disposal | 11,000 |
| Proceeds from sale | 9,000 |
| **Loss on disposal of plant asset** | **$ 2,000** |

Wright records the sale and the loss on disposal of the plant asset as follows.

| | | | |
|---|---|---|---|
| July 1 | Cash | 9,000 | |
| | Accumulated Depreciation-Equipment | 49,000 | |
| | Loss on Sale of Plant Assets | 2,000 | |
| | Equipment | | 60,000 |
| | (To record sale of equipment at a loss) | | |

Companies report a loss on disposal of plant assets in the "Other expenses and losses" section of the income statement.

**(4) Accounting for Natural Resources and Intangible Assets:**

**4.1. Natural Resources:**

**Natural resources** consist of standing timber and underground deposits of oil, gas, and minerals. These long-lived productive assets have two distinguishing characteristics:

(1) they are physically extracted in operations (such as mining, cutting, or pumping).

(2) they are replaceable only by an act of nature.

The acquisition cost of a natural resource is the price needed to acquire the resource and prepare it for its intended use. For an already-discovered resource, such as an existing coal mine, cost is the price paid for the property.

**Depletion:**

The allocation of the cost of natural resources in a rational and systematic manner over the resource's useful life is called **depletion**. (That is, depletion is to natural resources as depreciation is to plant assets.) Companies generally

use the units-of-activity to compute depletion. The reason is that depletion generally is a function of the units extracted during the year.

Under the units-of-activity method, companies divide the total cost of the natural resource minus salvage value by the number of units estimated to be in the resource. The result is a depletion cost per unit. To compute depletion, the cost per unit is then multiplied by the number of units extracted.

To illustrate, assume that Lane Coal Company invests $5 million in a mine estimated to have 1 million tons of coal and no salvage value. The following illustration shows the computation of the depletion cost per unit.

$$\frac{\textbf{Total Cost} - \textbf{Salvage Value}}{\textbf{Total Estimated Units Available}} = \textbf{Depletion Cost per Unit}$$

$$\frac{\$5{,}000{,}000}{\$1{,}000{,}000} = \$5.00 \text{ per ton}$$

If Lane extracts 250,000 tons in the first year, then the depletion for the year is $1,250,000 (250,000 tons x $5). It records the depletion as follows.

| | | | |
|---|---|---|---|
| | Inventory (coal) | 1,250,000 | |
| | Accumulated Depletion | | 1,250,000 |

Lane debits Inventory for the total depletion for the year and credits Accumulated Depletion to reduce the carrying value of the natural resource. Accumulated Depletion is a contra asset similar to Accumulated Depreciation. Lane credits Inventory when it sells the inventory and debits Cost of Goods Sold. The amount not sold remains in inventory and is reported in the current assets section of the balance sheet.

Some companies do not use an Accumulated Depletion account. In such cases, the company credits the amount of depletion directly to the natural resources account.

## 4.2. Intangible Assets:

**Intangible assets** are rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance. Evidence of intangibles may exist in the form of contracts or licenses. Intangibles may arise from the following sources:

**1.** Government grants, such as patents, copyrights, licenses, trademarks, and trade names.

**2.** Acquisition of another business, in which the purchase price includes a payment for goodwill.

**3.** Private monopolistic arrangements arising from contractual agreements, such as franchises and leases.

Some widely known intangibles are **Microsoft's** patents, **McDonald's** franchises, **Apple**'s trade name iPod, J.K. Rowling's copyrights on the *Harry Potter* books, and the trademark **Rent-A-Wreck** in the Feature Story.

### 4.2.1. Accounting for Intangible Assets:

Companies record intangible assets at cost. Intangibles are categorized as having either a limited life or an indefinite life. If an intangible has a limited life, the company allocates its cost over the asset's useful life using a process similar to depreciation. The process of allocating the cost of intangibles is referred to as amortization. The cost of intangible assets with indefinite lives should not be amortized.

To record amortization of an intangible asset, a company increases (debits) Amortization Expense, and decreases (credits) the specific intangible asset. (Unlike depreciation, no contra account, such as Accumulated Amortization, is usually used.)

Intangible assets are typically amortized on a straight-line basis. For example, the legal life of a patent is 20 years. Companies amortize the cost of a patent over its 20-year life or its useful life, whichever is shorter. To illustrate the computation of patent amortization, assume that National Labs purchases a patent at a cost of $60,000. If National estimates the useful life of the patent to be eight years, the annual amortization expense is $7,500 ($60,000 ÷ 8). National records the annual amortization as follows.

| | | | |
|---|---|---|---|
| Dec.31 | Amortization Expense | 7,500 | |
| | Patents | | 7,500 |
| | (To record patent amortization) | | |

Companies classify Amortization Expense as an operating expense in the income statement. There is a difference between intangible assets and plant assets in determining cost. For plant assets, cost includes both the purchase price of the asset and the costs incurred in designing and constructing the asset. In contrast, the initial cost for an intangible asset includes only the purchase price. Companies expense any costs incurred in developing an intangible asset.

*** Patents:**

A **patent** is an exclusive right that enables the recipient to manufacture, sell, or otherwise control an invention for a period of 20 years from the date of the grant. A patent is nonrenewable. But companies can extend the legal life of a patent by obtaining new patents for improvements or other changes in the basic design. The initial cost of a patent is the cash or cash equivalent price paid to acquire the patent.

*** Copyrights:**

**Copyrights** give the owner the exclusive right to reproduce and sell an artistic or published work. Copyrights extend for the life of the creator plus 70 years. The cost of a copyright is the cost of acquiring and defending it. The cost may be only the small fee paid to the Copyright Office. Or, it may amount to much more if an infringement suit is involved. The useful life of a copyright generally is significantly shorter than its legal life. Therefore, copyrights usually are amortized over a relatively short period of time.

*** Trademarks and Trade Names:**

A **trademark** or **trade name** is a word, phrase, or symbol that identifies a particular enterprise or product. Trade names like Wheaties, Monopoly, Big Mac, Kleenex, Coca-Cola, and Jeep create immediate product identification. They also generally enhance the sale of the product. The creator or original user may obtain exclusive legal right to the trademark or trade name by registering it with the Patent Office. Such registration provides 20 years of protection. The registration may be renewed indefinitely as long as the trademark or trade name is in use. If a company purchases the trademark or trade name, its cost is the purchase price. If a company develops and maintains

the trademark or trade name, any costs related to these activities are expensed as incurred. Because trademarks and trade names have indefinite lives, they are not amortized.

*** Franchises:**

When you fill up your tank at the corner **Shell** station, eat lunch at **Subway**, or rent a car from **Rent-A-Wreck**, you are dealing with franchises. A **franchise** is a contractual arrangement between a franchisor and a franchisee. The franchisor grants the franchisee the right to sell certain products, perform specific services, or use certain trademarks or trade names, usually within a designated geographic area.

Another type of franchise is a **license**. A license granted by a governmental body permits a company to use public property in performing its services. Examples are the use of city streets for a bus line or taxi service, the use of public land for telephone and electric lines, and the use of airwaves for radio or TV broadcasting. In a recent license agreement, FOX, CBS, and NBC agreed to pay $27.9 billion for the right to broadcast NFL football games over an eight-year period.

Franchises and licenses may by granted for a definite period of time, an indefinite period, or perpetually.

When a company can identify costs with the purchase of a franchise or license, it should recognize an intangible asset. Companies should amortize the cost of a limited-life franchise (or license) over its useful life. If the life is indefinite, the cost is not amortized. Annual payments made under a franchise agreement are recorded as operating expenses in the period in which they are incurred.

*** Goodwill:**

Usually, the largest intangible asset that appears on a company's balance sheet is goodwill. **Goodwill** represents the value of all favorable attributes that relate to a company that are not attributable to any other specific asset. These include exceptional management, desirable location, good customer relations, skilled employees, high-quality products, and harmonious relations with labor unions. Goodwill is unique. Unlike assets such as investments and plant assets, which can be sold individually in the marketplace, goodwill can be identified only with the business as a whole.

If goodwill can be identified only with the business as a whole, how can its amount be determined? One could try to put a dollar value on the factors listed above (exceptional management, desirable location, and so on). But, the results would be very subjective, and such subjective valuations would not contribute to the reliability of financial statements. Therefore, companies record goodwill only when an entire business is purchased. In that case, goodwill is the excess of cost over the fair value of the net assets (assets less liabilities) acquired. In recording the purchase of a business, the company debits (increases) the identifiable acquired assets, credits liabilities at their fair values, credits cash for the purchase price, and records the difference as goodwill. Goodwill is not amortized because it is considered to have an indefinite life. Companies report goodwill in the balance sheet under intangible assets.

**Glossary Review:**

**Accelerated-depreciation method:** Depreciation method that produces higher depreciation expense in the early years than in the later years.

**Amortization:** The allocation of the cost of an intangible asset to expense over its useful life in a systematic and rational manner.

**Capital expenditures:** Expenditures that increase the company's investment in productive facilities.

**Copyrights:** Exclusive grant from the federal government that allows the owner to reproduce and sell an artistic or published work.

**Declining-balance method:** Depreciation method that applies a constant rate to the declining book value of the asset and produces a decreasing annual depreciation expense over the useful life of the asset.

**Depletion:** The allocation of the cost of a natural resource to expense in a rational and systematic manner over the resource's useful life.

**Depreciable cost:** The cost of a plant asset less its salvage value.

**Depreciation:** The process of allocating to expense the cost of a plant asset over its useful (service) life in a rational and systematic manner.

**Franchise (license):** A contractual arrangement under which the franchisor grants the franchisee the right to sell certain products, perform specific services, or use certain trademarks or trade names, usually within a designated geographic area.

**Goodwill:** The value of all favorable attributes that relate to a company that is not attributable to any other specific asset.

**Intangible assets:** Rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance.

**Natural resources:** Assets that consist of standing timber and underground deposits of oil, gas, and minerals.

**Patent:** An exclusive right issued by the Patent Office that enables the recipient to manufacture, sell, or otherwise control an invention for a period of 20 years from the date of the grant.

**Plant assets:** Tangible resources that are used in the operations of the business and are not intended for sale to customers.

**Revenue expenditures:** Expenditures that are immediately charged against revenues as an expense.

**Salvage value:** An estimate of an asset's value at the end of its useful life.

**Straight-line method:** Depreciation method in which periodic depreciation is the same for each year of the asset's useful life.

**Trademark (trade name):** A word, phrase, jingle, or symbol that identifies a particular enterprise or product.

**Units-of-activity method:** Depreciation method in which useful life is expressed in terms of the total units of production or use expected from an asset.

**Useful life:** An estimate of the expected productive life, also called service life, of an asset.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** Additions to plant assets are:

(a) revenue expenditures.

(b) debited to the Maintenance and Repairs Expense account.

(c) debited to the Purchases account.

(d) capital expenditures.

**2.** Depreciation is a process of:

(a) valuation.

(b) cost allocation.

(c) cash accumulation.

(d) appraisal.

**3.** Micah Bartlett Company purchased equipment on January 1, 2016, at a total invoice cost of $400,000. The equipment has an estimated salvage value of $10,000 and an estimated useful life of 5 years. The amount of accumulated depreciation at December 31, 2017, if the straight-line method of depreciation is used, is:

(a) $80,000.

(b) $160,000.

(c) $78,000.

(d) $156,000.

**4.** Jefferson Company purchased a piece of equipment on January 1, 2017. The equipment cost $60,000 and has an estimated life of 8 years and a salvage value of $8,000. What was the depreciation expense for the asset for 2018 under the double-declining-balance method?

(a) $6,500.

(b) $11,250.

(c) $15,000.

(d) $6,562.

**5.** When there is a change in estimated depreciation:

(a) previous depreciation should be corrected.

(b) current and future years' depreciation should be revised.

(c) only future years' depreciation should be revised.

(d) None of the above.

**6.** Bennie Razor Company has decided to sell one of its old manufacturing machines on June 30, 2017. The machine was purchased for $80,000 on January 1, 2013 and was depreciated on a straight-line basis for 10 years assuming no salvage value. If the machine was sold for $26,000, what was the amount of the gain or loss recorded at the time of the sale?

(a) $18,000.

(b) $54,000.

(c) $22,000.

(d) $46,000.

**7.** Maggie Sharrer Company expects to extract 20 million tons of coal from a mine that cost $12 million. If no salvage value is expected and 2 million tons are mined in the first year, the entry to record depletion will include a:

(a) debit to Accumulated Depletion of $2,000,000.

(b) credit to Depletion Expense of $1,200,000.

(c) debit to Inventory of $1,200,000.

(d) credit to Accumulated Depletion of $2,000,000.

**8.** Which of the following statements is **false**?

(a) If an intangible asset has a finite life, it should be amortized.

(b) The amortization period of an intangible asset can exceed 20 years.

(c) Goodwill is recorded only when a business is purchased.

(d) Research and development costs are expensed when incurred, except when the research and development expenditures result in a successful patent.

**9.** Martha Beyerlein Company incurred $150,000 of research and development costs in its laboratory to develop a patent granted on January 2, 2017. On July 31, 2017, Beyerlein paid $35,000 for legal fees in a successful defense of the patent. The total amount debited to Patents through July 31, 2017, should be:

(a) $150,000.
(b) $35,000.
(c) $185,000.
(d) $170,000.

# Exercises

**Exercise (1):**

Rosco Taxi Service uses the units-of-activity method in computing depreciation on its taxicabs. Each cab is expected to be driven 150,000 miles. Taxi no. 10 cost $39,500 and is expected to have a salvage value of $500. Taxi no. 10 is driven 30,000 miles in year 1 and 20,000 miles in year 2. Compute the depreciation for each year.

**Exercise (2):**

On January 1, 2017, the Morgantown Company ledger shows Equipment $32,000 and Accumulated Depreciation—Equipment $9,000. The depreciation resulted from using the straight-line method with a useful life of 10 years and salvage value of $2,000. On this date, the company concludes that the equipment has a remaining useful life of only 4 years with the same salvage value. Compute the revised annual depreciation.

**Exercise (3):**

Prepare journal entries to record the following.

(a) Sound Tracker Company retires its delivery equipment, which cost $41,000. Accumulated depreciation is also $41,000 on this delivery equipment. No salvage value is received.

(b) Assume the same information as (a), except that accumulated depreciation is $37,000, instead of $41,000, on the delivery equipment.

**Exercise (4):**

Franceour Mining Co. purchased for $7 million a mine that is estimated to have 35 million tons of ore and no salvage value. In the first year, 5 million tons of ore are extracted.

(a) Prepare the journal entry to record depletion for the first year.

(b) Show how this mine is reported on the balance sheet at the end of the first year.

**Exercise (5):**

On March 1, 2017, Westmorlan Company acquired real estate on which it planned to construct a small office building. The company paid $75,000 in cash. An old warehouse on the property was razed at a cost of $8,600; the salvaged materials were sold for $1,700. Additional expenditures before construction began included $1,100 attorney's fee for work concerning the land purchase, $5,000 real estate broker's fee, $7,800 architect's fee, and $14,000 to put in driveways and a parking lot.

(a) Determine the amount to be reported as the cost of the land.

(b) For each cost not used in part (a), indicate the account to be debited.

**Exercise (6):**

Tom Parkey has prepared the following list of statements about depreciation.

1. Depreciation is a process of asset valuation, not cost allocation.
2. Depreciation provides for the proper matching of expenses with revenues.
3. The book value of a plant asset should approximate its fair value.
4. Depreciation applies to three classes of plant assets: land, buildings, and equipment.

5. Depreciation does not apply to a building because its usefulness and revenue-producing ability generally remain intact over time.

6. The revenue-producing ability of a depreciable asset will decline due to wear and tear and to obsolescence.

7. Recognizing depreciation on an asset results in an accumulation of cash for replacement of the asset.

8. The balance in accumulated depreciation represents the total cost that has been charged to expense.

9. Depreciation expense and accumulated depreciation are reported on the income statement.

10. Four factors affect the computation of depreciation: cost, useful life, salvage value, and residual value.

Identify each statement as true or false. If false, indicate how to correct the statement.

**Exercise (7):**

Rottino Company purchased a new machine on October 1, 2017, at a cost of $150,000. The company estimated that the machine will have a salvage value of $12,000. The machine is expected to be used for 10,000 working hours during its 5-year life.

Compute the depreciation expense under the following methods for the year indicated.

(a) Straight-line for 2017.

(b) Units-of-activity for 2017, assuming machine usage was 1,700 hours.

(c) Declining balance using double the straight-line rate for 2017 and 2018.

**Exercise (8):**

Linton Company purchased a delivery truck for $34,000 on January 1, 2017. The truck has an expected salvage value of $2,000 and is expected to be driven 100,000 miles over its estimated useful life of 8 years. Actual miles driven were 15,000 in 2017 and 12,000 in 2018.

(a) Compute depreciation expense for 2017 and 2018 using (1) the straight-line method, (2) the units-of-activity method, and (3) the double-declining-balance method.

(b) Assume that Linton uses the straight-line method.

(1) Prepare the journal entry to record 2017 depreciation.

(2) Show how the truck would be reported in the December 31, 2017, balance sheet.

**Exercise (9):**

Pryce Company owns equipment that cost $65,000 when purchased on January 1, 2014. It has been depreciated using the straight-line method based on estimated salvage value of $5,000 and an estimated useful life of 5 years. Prepare Pryce Company's journal entries to record the sale of the equipment in these four independent situations.

(a) Sold for $31,000 on January 1, 2017.

(b) Sold for $31,000 on May 1, 2017.

(c) Sold for $11,000 on January 1, 2017.

(d) Sold for $11,000 on October 1, 2017.

**Exercise (10):**

On July 1, 2017, Friedman Inc. invested $720,000 in a mine estimated to have 900,000 tons of ore of uniform grade. During the last 6 months of 2017, 100,000 tons of ore were mined.

(a) Prepare the journal entry to record depletion.

(b) Assume that the 100,000 tons of ore were mined, but only 80,000 units were sold. How are the costs applicable to the 20,000 unsold units reported?

# Chapter (6)

# Accounting for Corporations

# Accounting for Corporations

## Introduction:

A corporation is created by law, and its continued existence depends upon the statutes of the state in which it is incorporated. As a legal entity, a corporation has most of the rights and privileges of a person. The major exceptions relate to privileges that only a living person can exercise, such as the right to vote or to hold public office. A corporation is subject to the same duties and responsibilities as a person. For example, it must abide by the laws, and it must pay taxes.

## (1) Characteristics of a Corporation:

In 1964, when **Nike**'s founders Phil Knight and Bill Bowerman were just getting started in the running shoe business, they formed their original organization as a partnership. In 1968, they reorganized the company as a corporation. A number of characteristics distinguish corporations from proprietorships and partnerships. We explain the most important of these characteristics below.

### 1.1. Separate Legal Existence:

As an entity separate and distinct from its owners, the corporation acts under its own name rather than in the name of its stockholders. Nike may buy, own, and sell property. It may borrow money, and it may enter into legally binding contracts in its own name. It may also sue or be sued, and it pays its own taxes. In a partnership, the acts of the owners (partners) bind the partnership. In contrast, the acts of its owners (stockholders) do not bind the corporation unless such owners are agents of the corporation. For example, if you owned

shares of Nike stock, you would not have the right to purchase inventory for the company unless you were designated as an agent of the corporation.

### 1.2. Limited Liability of Stockholders:

Since a corporation is a separate legal entity, creditors have recourse only to corporate assets to satisfy their claims. The liability of stockholders is normally limited to their investment in the corporation. Creditors have no legal claim on the personal assets of the owners unless fraud has occurred. Even in the event of bankruptcy, stockholders' losses are generally limited to their capital investment in the corporation.

### 1.3. Transferable Ownership Rights:

Shares of capital stock give ownership in a corporation. These shares are transferable units. Stockholders may dispose of part or all of their interest in a corporation simply by selling their stock. The transfer of an ownership interest in a partnership requires the consent of each owner. In contrast, the transfer of stock is entirely at the discretion of the stockholder. It does not require the approval of either the corporation or other stockholders.

The transfer of ownership rights between stockholders normally has no effect on the daily operating activities of the corporation. Nor does it affect the corporation's assets, liabilities, and total ownership equity. The transfer of these ownership rights is a transaction between individual owners. The company does not participate in the transfer of these ownership rights after the original sale of the capital stock.

### 1.4. Ability to Acquire Capital:

It is relatively easy for a corporation to obtain capital through the issuance of stock. Buying stock in a corporation is often attractive to an investor because a stockholder has limited liability and shares of stock are readily transferable.

Also, numerous individuals can become stockholders by investing relatively small amounts of money.

### 1.5. Continuous Life:

The life of a corporation is stated in its charter. The life may be perpetual, or it may be limited to a specific number of years. If it is limited, the company can extend the life through renewal of the charter. Since a corporation is a separate legal entity, its continuance as a going concern is not affected by the withdrawal, death, or incapacity of a stockholder, employee, or officer. As a result, a successful company can have a continuous and perpetual life.

### 1.6. Corporation Management:

Stockholders legally own the corporation. However, they manage the corporation indirectly through a board of directors they elect. Philip Knight is the chairman of Nike. The board, in turn, formulates the operating policies for the company. The board also selects officers, such as a president and one or more vice presidents, to execute policy and to perform daily management functions.

A typical organization chart shows the delegation of responsibility. The chief executive officer (CEO) has overall responsibility for managing the business. As the organization chart shows, the CEO delegates responsibility to other officers. The chief accounting officer is the controller.

The controller's responsibilities include:

(1) maintaining the accounting records.

(2) ensuring an adequate system of internal control.

(3) preparing financial statements, tax returns, and internal reports.

The treasurer has custody of the corporation's funds and is responsible for maintaining the company's cash position. The organizational structure of a corporation enables a company to hire professional managers to run the business. On the other hand, the separation of ownership and management often reduces an owner's ability to actively manage the company.

### 1.7. Government Regulations:

A corporation is subject to numerous state regulations. For example, state laws usually prescribe the requirements for issuing stock, the distributions of earnings permitted to stockholders, and the acceptable methods for buying back and retiring stock. Most publicly held corporations are required to make extensive disclosure of their financial affairs to the Securities and Exchange Commission (SEC) through quarterly and annual reports. In addition, when a corporation lists its stock on organized securities exchanges, it must comply with the reporting requirements of these exchanges. Government regulations are designed to protect the owners of the corporation.

### 1.8. Additional Taxes:

Owners of proprietorships and partnerships report their share of earnings on their personal income tax returns. The individual owner then pays taxes on this amount. Corporations, on the other hand, must pay federal and state income taxes as a separate legal entity. These taxes can be substantial. They can amount to as much as 40% of taxable income.

In addition, stockholders must pay taxes on cash dividends (pro rata distributions of net income). Thus, many argue that the government taxes corporate income twice (double taxation)—once at the corporate level and again at the individual level.

## Forming a Corporation:

A corporation is formed by grant of a state charter. The charter is a document that describes the name and purpose of the corporation, the types and number of shares of stock that are authorized to be issued, the names of the individuals that formed the company, and the number of shares that these individuals agreed to purchase. Regardless of the number of states in which a corporation has operating divisions, it is incorporated in only one state.

Upon receipt of its charter from the state of incorporation, the corporation establishes by-laws. The by-laws establish the internal rules and procedures for conducting the affairs of the corporation. Corporations engaged in interstate commerce must also obtain a license from each state in which they do business. The license subjects the corporation's operating activities to the general corporation laws of the state.

Costs incurred in the formation of a corporation are called organization costs. These costs include legal and state fees, and promotional expenditures involved in the organization of the business. **Corporations expense organization costs as incurred.** Determining the amount and timing of future benefits is so difficult that it is standard procedure to take a conservative approach of expensing these costs immediately.

## Stockholder Rights:

When chartered, the corporation may begin selling shares of stock. When a corporation has only one class of stock, it is **common stock**. Each share of common stock gives the stockholder the ownership rights as follows:

1- Vote in election of board of directors at annual meeting and vote on actions that require stockholder approval.

2- Share the corporate earnings through receipt of dividends.

3- Keep the same percentage ownership when new shares of stock are issued.
4- Share in assets upon liquidation in proportion to their holdings. This is called a residual claim because owners are paid with assets that remain after all other claims have been paid.

## (2) Stock Issue Considerations:

When a corporation decides to issue stock, it must resolve a number of basic questions: How many shares should it authorize for sale? How should it issue the stock? What value should the corporation assign to the stock? We address these questions in the following sections.

### 2.1. Authorized Stock:

The charter indicates the amount of stock that a corporation is **authorized** to sell. The total amount of **authorized stock** at the time of incorporation normally anticipates both initial and subsequent capital needs. As a result, the number of shares authorized generally exceeds the number initially sold. If it sells all authorized stock, a corporation must obtain consent of the state to amend its charter before it can issue additional shares.

The authorization of capital stock does not result in a formal accounting entry. The reason is that the event has no immediate effect on either corporate assets or stockholders' equity. However, the number of authorized shares is often reported in the stockholders' equity section. It is then simple to determine the number of unissued shares that the corporation can issue without amending the charter: subtract the total shares issued from the total authorized. For example, if Advanced Micro was authorized to sell 100,000 shares of common stock and issued 80,000 shares, 20,000 shares would remain unissued.

## 2.2. Issuance of Stock:

A corporation can issue common stock **directly** to investors. Alternatively, it can issue the stock **indirectly** through an investment banking fi rm that specializes in bringing securities to the attention of prospective investors. Direct issue is typical in closely held companies. Indirect issue is customary for a publicly held corporation.

In an indirect issue, the investment banking firm may agree to underwrite the entire stock issue. In this arrangement, the investment banker buys the stock from the corporation at a stipulated price and resells the shares to investors. The corporation thus avoids any risk of being unable to sell the shares. Also, it obtains immediate use of the cash received from the underwriter. The investment banking firm, in turn, assumes the risk of reselling the shares, in return for an underwriting fee.

How does a corporation set the price for a new issue of stock? Among the factors to be considered are:

(1) the company's anticipated future earnings.

(2) its expected dividend rate per share.

(3) its current financial position.

(4) the current state of the economy.

(5) the current state of the securities market.

The calculation can be complex and is properly the subject of a finance course.

## 2.3. Market Price of Stock:

The stock of publicly held companies is traded on organized exchanges. The interaction between buyers and sellers determines the prices per share. In general, the prices set by the marketplace tend to follow the trend of a company's earnings and dividends. But, factors beyond a company's control,

such as an oil embargo, changes in interest rates, or the outcome of a presidential election, may cause day-to-day fluctuations in market prices.

The trading of capital stock on securities exchanges involves the transfer of already issued shares from an existing stockholder to another investor. These transactions have no impact on a corporation's stockholders' equity.

## 2.4. Par and No-Par Value Stocks:

**Par value stock** is capital stock to which the charter has assigned a value per share. Years ago, par value determined the legal capital per share that a company must retain in the business for the protection of corporate creditors. That amount was not available for withdrawal by stockholders.

However, par value was often immaterial relative to the value of the company's stock—even at the time of issue. Thus, its usefulness as a protective device to creditors was questionable. For example, Loews Corporation's par value is $0.01 per share, yet a new issue in 2014 would have sold at a market price in the $44 per share range. Thus, par has no relationship with market price. In the vast majority of cases, it is an immaterial amount. As a consequence, today many states do not require a par value. Instead, they use other means to protect creditors.

No-par value stock is capital stock to which the charter has not assigned a value. No-par value stock is fairly common today. For example, Nike and Procter & Gamble both have no-par stock. In many states, the board of directors assigns a stated value to no-par shares.

## (3) Corporate Capital:

Owners' equity is identified by various names: **stockholders' equity**, **shareholders' equity**, or **corporate capital**. The stockholders' equity section of a corporation's balance sheet consists of two parts:

(1) paid-in (contributed) capital.

(2) retained earnings (earned capital).

The distinction between paid-in capital and retained earnings is important from both a legal and a financial point of view. Legally, corporations can make distributions of earnings (declare dividends) out of retained earnings in all states. Management, stockholders, and others often look to retained earnings for the continued existence and growth of the corporation.

### 3.1. Paid-in Capital:

**Paid-in capital** is the total amount of cash and other assets paid in to the corporation by stockholders in exchange for capital stock. As noted earlier, when a corporation has only one class of stock, it is **common stock**.

### 3.2. Retained Earnings:

**Retained earnings** is net income that a corporation retains for future use. Net income is recorded in Retained Earnings by a closing entry that debits Income Summary and credits Retained Earnings. For example, assuming that net income for Delta Robotics in its first year of operations is $130,000, the closing entry is:

| | | | |
|---|---|---|---|
| | Income Summary | 130,000 | |
| | Retained Earnings | | 130,000 |
| | (To close Income Summary and transfer net income to Retained Earnings) | | |

If Delta Robotics has a balance of $800,000 in common stock at the end of its first year, its stockholders' equity section is as follows.

**Delta Robotics**
**Balance Sheet (partial)**

| | | |
|---|---|---|
| Stockholders' equity | | |
| **Paid-in-capital** | | |
| Common stock | $ 800,000 | |
| **Retained earnings** | 130,000 | |
| Total stockholders' equity | | **$ 930,000** |

**(4) Accounting for the Issuance of Common Stock and Preferred Stock:**

The primary objectives in accounting for the issuance of common stock are:
(1) to identify the specific sources of paid-in capital.
(2) to maintain the distinction between paid-in capital and retained earnings.
The issuance of common stock affects only paid-in capital accounts.

**4.1. Issuing Par Value Common Stock for Cash:**

As discussed earlier, par value does not indicate a stock's market price. Therefore, the cash proceeds from issuing par value stock may be equal to, greater than, or less than par value. When the company records issuance of common stock for cash, it credits the par value of the shares to Common Stock. It also records in a separate paid-in capital account the portion of the proceeds that is above or below par value.

To illustrate, assume that Hydro-Slide, Inc. issues 1,000 shares of $1 par value common stock at par for cash. The entry to record this transaction is:

| | | | |
|---|---|---|---|
| | Cash | 1,000 | |
| | Common Stock | | 1,000 |
| | (To record issuance of 1,000 shares of $1 par common stock at par) | | |

Now assume that Hydro-Slide issues an additional 1,000 shares of the $1 par value common stock for cash at $5 per share. The amount received above the par value, in this case $4 ($5 ─ $1), is credited to Paid-in Capital in Excess of Par—Common Stock. The entry is:

| | | | |
|---|---|---|---|
| | Cash | 5,000 | |
| | Common Stock | | 1,000 |
| | Paid-in-Capital in Excess of Par-Common Stock | | 4,000 |
| | (To record issuance of 1,000 shares of $1 par common stock) | | |

The total paid-in capital from these two transactions is $6,000, and the legal capital is $2,000. Assuming Hydro-Slide, Inc. has retained earnings of $27,000, the following illustration shows the company's stockholders' equity section.

**Hydro-Slide, Inc.**
**Balance Sheet (partial)**

| | |
|---|---|
| Stockholders' equity | |
| **Paid-in-capital** | |
| Common stock | $ 2,000 |
| **Paid-in-capital in excess of par-common stock** | 4,000 |
| Total paid-in capital | 6,000 |
| Retained earnings | 27,000 |
| Total stockholders' equity | $ 33,000 |

When a corporation issues stock for less than par value, it debits the account Paid-in Capital in Excess of Par—Common Stock if a credit balance exists in this account. If a credit balance does not exist, then the corporation debits to Retained Earnings the amount less than par.

### 4.2. Issuing No-Par Common Stock for Cash:

When no-par common stock has a stated value, the entries are similar to those illustrated for par value stock. The corporation credits the stated value to Common Stock. Also, when the selling price of no-par stock exceeds stated value, the corporation credits the excess to Paid-in Capital in Excess of Stated Value—Common Stock.

For example, assume that instead of $1 par value stock, Hydro-Slide, Inc. has $5 stated value no-par stock and the company issues 5,000 shares at $8 per share for cash. The entry is as follows.

| | | | |
|---|---|---|---|
| | Cash | 40,000 | |
| | Common Stock | | 25,000 |
| | Paid-in-Capital in Excess of Stated Value-Common Stock | | 15,000 |
| | (To record issue of 5,000 shares of $5 stated value no-par stock) | | |

Hydro-Slide, Inc. reports Paid-in Capital in Excess of Stated Value Common Stock as part of paid-in capital in the stockholders' equity section. What happens when no-par stock does not have a stated value? In that case, the corporation credits the entire proceeds to Common Stock. Thus, if Hydro-Slide does not assign a stated value to its no-par stock, it records the issuance of the 5,000 shares at $8 per share for cash as follows.

| | | | |
|---|---|---|---|
| | Cash | 40,000 | |
| | Common Stock | | 40,000 |
| | (To record issuance of 5,000 shares of no-par stock) | | |

### 4.3. Issuing Common Stock for Services or Noncash Assets:

Corporations also may issue stock for services (compensation to attorneys or consultants) or for noncash assets (land, buildings, and equipment). In such cases, what cost should be recognized in the exchange transaction? To comply with the historical cost principle, in a noncash transaction cost is the cash equivalent price. Thus, cost is either the fair value of the consideration given up or the fair value of the consideration received, whichever is more clearly determinable.

To illustrate, assume that attorneys have helped Jordan Company incorporate. They have billed the company $5,000 for their services. They agree to accept 4,000 shares of $1 par value common stock in payment of their bill. At the time of the exchange, there is no established market price for the stock. In this case, the fair value of the consideration received, $5,000, is more clearly evident. Accordingly, Jordan Company makes the following entry.

| | | | |
|---|---|---|---|
| | Organization Expense | 5,000 | |
| | Common Stock | | 4,000 |
| | Paid-in-Capital in Excess of Par-Common Stock | | 1,000 |
| | (To record issuance of 4,000 shares of $1 par stock to attorneys) | | |

Organization costs are expensed as incurred. In contrast, assume that Athletic Research Inc. is an existing publicly held corporation. Its $5 par value stock is actively traded at $8 per share. The company issues 10,000 shares of stock to acquire land recently advertised for sale at $90,000.

The most clearly evident value in this noncash transaction is the market price of the consideration given, $80,000. The company records the transaction as follows.

| | | | |
|---|---|---|---|
| | Land | 80,000 | |
| | Common Stock | | 50,000 |
| | Paid-in-Capital in Excess of Par-Common Stock | | 30,000 |
| | (To record issuance of 10,000 shares of $5 par stock for land) | | |

## 4.4. Accounting for Preferred Stock:

To appeal to a larger segment of potential investors, a corporation may issue an additional class of stock, called preferred stock. **Preferred stock** has contractual provisions that give it some preference or priority over common stock. Typically, preferred stockholders have a priority as to:

(1) distributions of earnings (dividends).

(2) assets in the event of liquidation.

However, they generally do not have voting rights. Like common stock, corporations may issue preferred stock for cash or for noncash assets. The entries for these transactions are similar to the entries for common stock. When a corporation has more than one class of stock, each paid-in capital account title should identify the stock to which it relates. A company might have the following accounts: Preferred Stock, Common Stock, Paid-in Capital in Excess of Par—Preferred Stock, and Paid-in Capital in Excess of Par—Common Stock.

For example, if Stine Corporation issues 10,000 shares of $10 par value preferred stock for $12 cash per share, the entry to record the issuance is as follows.

| | | | |
|---|---|---|---|
| | Cash | 120,000 | |
| | Preferred Stock | | 100,000 |
| | Paid-in-Capital in Excess of Par-Preferred Stock | | 20,000 |
| | (To record issuance of 10,000 shares of $10 par value preferred stock) | | |

Preferred stock may have either a par value or no-par value. In the stockholders' equity section of the balance sheet, companies list preferred stock first because of its dividend and liquidation preferences over common stock.

**Example:**

Cayman Corporation begins operations on March 1 by issuing 100,000 shares of $1 par value common stock for cash at $12 per share. On March 15, it issues 5,000 shares of common stock to attorneys in settlement of their bill of $50,000 for organization costs. On March 28, Cayman Corporation issues 1,500 shares of $10 par value preferred stock for cash at $30 per share. Journalize the issuance of the common and preferred shares, assuming the shares are not publicly traded.

**Solution:**

| | | | |
|---|---|---|---|
| Mar.1 | Cash | 1200,000 | |
| | Common Stock (100,000 x $ 1) | | 100,000 |
| | Paid-in-Capital in Excess of Common Stock | | 1,100,000 |
| | (To record issuance of 100,000 shares of $12 per share) | | |
| 15 | Organization Expense | 50,000 | |
| | Common Stock (5,000 x $1) | | 5,000 |
| | Paid-in Capital in Excess of Par—Common Stock | | 45,000 |
| | (To record issuance of 5,000 shares for attorneys' fees) | | |
| 28 | Cash | 45,000 | |
| | Preferred Stock (1,500 3 $10) | | 15,000 |
| | Paid-in Capital in Excess of Par—Preferred Stock | | 30,000 |
| | (To record issuance of 1,500 shares at $30 per share) | | |

## (5) Accounting for Treasury Stock:

**Treasury stock** is a corporation's own stock that it has issued and subsequently reacquired from shareholders but not retired. A corporation may acquire treasury stock for various reasons:

**1.** To reissue the shares to officers and employees under bonus and stock compensation plans.

**2.** To increase trading of the company's stock in the securities market. Companies expect that buying their own stock will signal that management believes the stock is underpriced, which they hope will enhance its market price.

**3.** To have additional shares available for use in the acquisition of other companies.

**4.** To reduce the number of shares outstanding and thereby increase earnings per share.

Another infrequent reason for purchasing shares is that management may want to eliminate hostile shareholders by buying them out.

### 5.1. Purchase of Treasury Stock:

Companies generally account for treasury stock by the cost method. This method uses the cost of the shares purchased to value the treasury stock. Under the cost method, the company debits Treasury Stock for the price paid to reacquire the shares. When the company disposes of the shares, it credits to Treasury Stock the same amount it paid to reacquire the shares.

To illustrate, assume that on January 1, 2017, the stockholders' equity section of Mead, Inc. has 400,000 shares authorized and 100,000 shares of $5 par value common stock outstanding (all issued at par value) and Retained

Earnings of $200,000. The stockholders' equity section before purchase of treasury stock is as follows.

**Miad, Inc.**
**Balance Sheet (partial)**

| | |
|---|---|
| Stockholders' equity | |
| Paid-in-capital | |
| Common stock, $5par value,400,000 shares authorized, 100,000 shares issued and outstanding | $ 500,000 |
| Retained earnings | 200,000 |
| Total stockholders' equity | $ 700,000 |

On February 1, 2017, Mead acquires 4,000 shares of its stock at $8 per share. The entry is as follows.

| | | | |
|---|---|---|---|
| Feb.1 | Treasury Stock | 32,000 | |
| | Cash | | 32,000 |
| | (To record purchase of 4,000 shares of treasury stock at $8 per share) | | |

Mead debits Treasury Stock for the cost of the shares purchased ($32,000). Is the original paid-in capital account, Common Stock, affected? No, because the number of issued shares does not change.

In the stockholders' equity section of the balance sheet, Mead deducts treasury stock from total paid-in capital and retained earnings. Treasury Stock is a contra stockholders' equity account. Thus, the acquisition of treasury stock

reduces stockholders' equity. The stockholders' equity section of Mead, Inc. after purchase of treasury stock is as follows.

**Miad, Inc.**
**Balance Sheet (partial)**

| | |
|---|---|
| Stockholders' equity | |
| Paid-in-capital | |
| Common stock, $5par value,400,000 shares authorized, 100,000 shares issued and 96,000 shares outstanding | $ 500,000 |
| Retained earnings | 200,000 |
| Total paid-in-capital and retained earnings | 700,000 |
| **Less: Treasury stock (4000 shares)** | **32,000** |
| Total stockholders' equity | $ 668,000 |

Mead discloses in the balance sheet both the number of shares issued (100,000) and the number in the treasury (4,000). The difference is the number of shares of stock outstanding (96,000). The term outstanding stock means the number of shares of issued stock that are being held by stockholders. Some maintain that companies should report treasury stock as an asset because it can be sold for cash. But under this reasoning, companies would also show unissued stock as an asset, which is clearly incorrect. Rather than being an asset, treasury stock reduces stockholder claims on corporate assets. This effect is correctly shown by reporting treasury stock as a deduction from total paid-in capital and retained earnings.

## 5.2. Disposal of Treasury Stock:

Treasury stock is usually sold or retired. The accounting for its sale differs when treasury stock is sold above cost than when it is sold below cost.

### 5.2.1. Sale of Treasury Stock Above Cost:

If the selling price of the treasury shares is equal to their cost, the company records the sale of the shares by a debit to Cash and a credit to Treasury Stock. When the selling price of the shares is greater than their cost, the company credits the difference to Paid-in Capital from Treasury Stock.

To illustrate, assume that on July 1, Mead, Inc. sells for $10 per share 1,000 of the 4,000 shares of its treasury stock previously acquired at $8 per share. The entry is as follows.

| | | | |
|---|---|---|---|
| July1 | Cash | 10,000 | |
| | Treasury Stock | | 8,000 |
| | Paid-in-Capital from Treasury Stock | | 2,000 |
| | (To record sale of 1,000 shares of treasury stock above cost) | | |

Mead does not record a $2,000 gain on sale of treasury stock for two reasons.

(1) Gains on sales occur when assets are sold, and treasury stock is not an asset.

(2) A corporation does not realize a gain or suffer a loss from stock transactions with its own stockholders.

Thus, companies should not include in net income any paid-in capital arising from the sale of treasury stock. Instead, they report Paid-in Capital from Treasury Stock separately on the balance sheet, as a part of paid-in capital.

### 5.2.2. Sale of Treasury Stock Below Cost:

When a company sells treasury stock below its cost, it usually debits to Paid in Capital from Treasury Stock the excess of cost over selling price. Thus, if Mead, Inc. sells an additional 800 shares of treasury stock on October 1 at $7 per share, it makes the following entry.

| | | | |
|---|---|---|---|
| Oct.1 | Cash | 5,600 | |
| | Paid-in-Capital from Treasury Stock | 800 | |
| | Treasury Stock | | 6,400 |
| | (To record sale of 800 shares of treasury stock below cost) | | |

Observe the following from the two sales entries.

(1) Mead credits Treasury Stock at cost in each entry.

(2) Mead uses Paid-in Capital from Treasury Stock for the difference between cost and the resale price of the shares.

(3) The original paid-in capital account, Common Stock, is not affected.

The sale of treasury stock increases both total assets and total stockholders' equity. After posting the foregoing entries, the treasury stock accounts will show the following balances on October 1.

**Treasury Stock**

| | | | |
|---|---|---|---|
| Feb.1 | 32,000 | July1 | 8,000 |
| | | Oct.1 | 6,400 |
| Oct.1 Bal. | 17,600 | | |

**Paid-in Capital from Treasury Stock**

| | | | | |
|---|---|---|---|---|
| Oct.1 | 800 | July1 | | 2,000 |
| | | Oct.1 | Bal. | 1,200 |

When a company fully depletes the credit balance in Paid-in Capital from Treasury Stock, it debits to Retained Earnings any additional excess of cost over selling price. To illustrate, assume that Mead, Inc. sells its remaining 2,200 shares at $7 per share on December 1. The excess of cost over selling price is $2,200 [2,200 x ($8 ─ $7)]. In this case, Mead debits $1,200 of the excess to Paid-in Capital from Treasury Stock. It debits the remainder to Retained Earnings. The entry is as follows.

| | | | |
|---|---|---|---|
| Dec.1 | Cash | 15,400 | |
| | Paid-in-Capital from Treasury Stock | 1,200 | |
| | Retained Earnings | 1,000 | |
| | Treasury Stock | | 17,600 |
| | (To record sale of 2,200 shares of treasury stock at $7 per share) | | |

**(6) <u>Prepare Stockholders' Equity Section:</u>**

Companies report paid-in capital and retained earnings in the stockholders' equity section of the balance sheet. They identify the specific sources of paid-in capital, using the following classifications.

**1. Capital stock.** This category consists of preferred and common stock. Preferred stock appears before common stock because of its preferential rights. Companies report par value, shares authorized, shares issued, and shares outstanding for each class of stock.

**2. Additional paid-in capital.** This category includes the excess of amounts paid in over par or stated value and paid-in capital from treasury stock.

The stockholders' equity section of Connally Inc. in the following illustration includes most of the accounts discussed in this chapter. The disclosures pertaining to Connally's common stock indicate that the company issued 400,000 shares; 100,000 shares are unissued (500,000 authorized less 400,000 issued); and 390,000 shares are outstanding (400,000 issued less 10,000 shares in treasury).

**Connally, Inc.**
**Balance Sheet (partial)**

| | | |
|---|---|---|
| Stockholders' equity | | |
| Paid-in-capital | | |
| **Capital stock** | | |
| 9% preferred stock, $100 par value, 10,000 shares authorized, 6000 shares issued and outstanding | | $ 600,000 |
| Common stock, no par $5stated value,500,000 shares authorized, 400,000 shares issued and 390,000 shares outstanding | | 200,000 |
| Total capital stock | | 2,600,000 |
| **Additional paid-in capital** | | |
| In excess of par-preferred stock | $ 30,000 | |
| In excess of stated value-common stock | 860,000 | |
| From treasury stock | 140,000 | |
| Total additional paid-in capital | | 1,030,000 |
| Total paid-in capital | | 3,630,000 |
| Retained earnings | | 1,058,000 |
| Total paid-in-capital and retained earnings | | 4,688,000 |
| Less: Treasury stock (10,000 common shares) (at cost) | | 80,000 |
| Total stockholders' equity | | $ 4,608,000 |

**Glossary Review:**

**Authorized stock:** The amount of stock that a corporation is authorized to sell as indicated in its charter.

**Corporation:** A business organized as a legal entity separate and distinct from its owners under state corporation law.

**No-par value stock:** Capital stock that has not been assigned a value in the corporate charter.

**Organization costs:** Costs incurred in the formation of a corporation.

**Outstanding stock:** Capital stock that has been issued and is being held by stockholders.

**Paid-in capital:** Total amount of cash and other assets paid in to the corporation by stockholders in exchange for capital stock.

**Par value stock:** Capital stock that has been assigned a value per share in the corporate charter.

**Preferred stock:** Capital stock that has some preferences over common stock.

**Retained earnings:** Net income that the corporation retains for future use.

**Treasury stock:** A corporation's own stock that has been issued and subsequently reacquired from shareholders by the corporation but not retired.

## Questions and Exercises

### Multiple-Choice Questions:

**1.** Which of the following is **not** a major advantage of a corporate form of organization?

(a) Separate legal existence.

(b) Continuous life.

(c) Government regulations.

(d) Transferable ownership rights.

**2.** Costs incurred in the formation of a corporation:

(a) do not include legal fees.

(b) are expensed as incurred.

(c) are recorded as an asset.

(d) provide future benefits whose amounts and timing are easily determined.

**3.** Total stockholders' equity (in the absence of treasury stock) equals:

(a) Total paid-in capital 1 Retained earnings.

(b) Paid-in capital + Capital stock + Retained earnings.

(c) Capital stock + Additional paid-in capital ─ Retained earnings.

(d) Common stock + Retained earnings.

**4.** The account Retained Earnings is:

(a) a subdivision of paid-in capital.

(b) net income retained in the corporation.

(c) reported as an expense in the income statement.

(d) closed to capital stock.

**5.** A-Team Corporation issued 1,000 shares of $5 par value stock for land. The stock is actively traded at $9 per share. The land was advertised for sale at $10,500. The land should be recorded at:

(a) $4,000.
(b) $5,000.
(c) $9,000.
(d) $10,500.

**6.** ABC Corporation issues 1,000 shares of $10 par value common stock at $13 per share. In recording the transaction, credits are made to:

(a) Common Stock $10,000 and Paid-in Capital in Excess of Stated Value $3,000.
(b) Common Stock $13,000.
(c) Common Stock $10,000 and Paid-in Capital in Excess of Par $3,000.
(d) Common Stock $10,000 and Retained Earnings $3,000.

**7.** Treasury stock may be repurchased:

(a) to reissue the shares to officers and employees under bonus and stock compensation plans.
(b) to signal to the stock market that management believes the stock is underpriced.
(c) to have additional shares available for use in the acquisition of other companies.
(d) More than one of the above.

**8.** In the stockholders' equity section, the cost of treasury stock is deducted from:

(a) total paid-in capital and retained earnings.
(b) retained earnings.

(c) total stockholders' equity.

(d) common stock in paid-in capital.

**9.** Which of the following is **not** reported under additional paid-in capital?

(a) Paid-in capital in excess of par.

(b) Common stock.

(c) Paid-in capital in excess of stated value.

(d) Paid-in capital from treasury stock.

**10.** In the stockholders' equity section of the balance sheet, common stock:

(a) is listed before preferred stock.

(b) is added to total capital stock.

(c) is part of paid-in capital.

(d) is part of additional paid-in capital.

# Exercises

**Exercise (1):**

Andrea has prepared the following list of statements about corporations.

1. A corporation is an entity separate and distinct from its owners.

2. As a legal entity, a corporation has most of the rights and privileges of a person.

3. Most of the largest U.S. corporations are privately held corporations.

4. Corporations may buy, own, and sell property; borrow money; enter into legally binding contracts; and sue and be sued.

5. The net income of a corporation is not taxed as a separate entity.

6. Creditors have a legal claim on the personal assets of the owners of a corporation if the corporation does not pay its debts.

7. The transfer of stock from one owner to another requires the approval of either the corporation or other stockholders.

8. The board of directors of a corporation legally owns the corporation.

9. The chief accounting officer of a corporation is the controller.

10. Corporations are subject to fewer state and federal regulations than partnerships or proprietorships.

Identify each statement as true or false. If false, indicate how to correct the statement.

**Exercise (2):**

During its first year of operations, Foyle Corporation had the following transactions pertaining to its common stock.

Jan. 10 Issued 70,000 shares for cash at $5 per share.

July 1 Issued 40,000 shares for cash at $7 per share.

(a) Journalize the transactions, assuming that the common stock has a par value of $5 per share.

(b) Journalize the transactions, assuming that the common stock is no-par with a stated value of $1 per share.

**Exercise (3):**

Osage Corporation issued 2,000 shares of stock.

Prepare the entry for the issuance under the following assumptions.

(a) The stock had a par value of $5 per share and was issued for a total of $52,000.

(b) The stock had a stated value of $5 per share and was issued for a total of $52,000.

(c) The stock had no par or stated value and was issued for a total of $52,000.

(d) The stock had a par value of $5 per share and was issued to attorneys for services during incorporation valued at $52,000.

(e) The stock had a par value of $5 per share and was issued for land worth $52,000.

**Exercise (4):**

Quay Co. had the following transactions during the current period.

Mar. 2 Issued 5,000 shares of $5 par value common stock to attorneys in payment of a bill for $30,000 for services performed in helping the company to incorporate.

June 12 Issued 60,000 shares of $5 par value common stock for cash of $375,000.

July 11 Issued 1,000 shares of $100 par value preferred stock for cash at $110 per share.

Nov. 28 Purchased 2,000 shares of treasury stock for $80,000.

Journalize the transactions.

**Exercise (5):**

On January 1, 2017, the stockholders' equity section of Newlin Corporation shows common stock ($5 par value) $1,500,000; paid-in capital in excess of par $1,000,000; and retained earnings $1,200,000. During the year, the following treasury stock transactions occurred.

Mar. 1 Purchased 50,000 shares for cash at $15 per share.

July 1 Sold 10,000 treasury shares for cash at $17 per share.

Sept. 1 Sold 8,000 treasury shares for cash at $14 per share.

(a) Journalize the treasury stock transactions.

(b) Restate the entry for September 1, assuming the treasury shares were sold at $12 per share.

**Exercise (6):**

Rinehart Corporation purchased from its stockholders 5,000 shares of its own previously issued stock for $255,000. It later resold 2,000 shares for $54 per share, then 2,000 more shares for $49 per share, and finally 1,000 shares for $43 per share.

Prepare journal entries for the purchase of the treasury stock and the three sales of treasury stock.

**Exercise (7):**

Tran Corporation is authorized to issue both preferred and common stock. The par value of the preferred is $50. During the first year of operations, the

company had the following events and transactions pertaining to its preferred stock.

Feb. 1 Issued 20,000 shares for cash at $53 per share.

July 1 Issued 12,000 shares for cash at $57 per share.

(a) Journalize the transactions.

(b) Post to the stockholders' equity accounts.

(c) Indicate the financial statement presentation of the related accounts.

**Exercise (8):**

The following stockholders' equity accounts, arranged alphabetically, are in the ledger of Eudaley Corporation at December 31, 2017.

| | |
|---|---|
| Common Stock ($5 stated value) | $1,500,000 |
| Paid-in Capital in Excess of Par—Preferred Stock | 280,000 |
| Paid-in Capital in Excess of Stated Value—Common Stock | 900,000 |
| Preferred Stock (8%, $100 par) | 500,000 |
| Retained Earnings | 1,234,000 |
| Treasury Stock (10,000 common shares) | 120,000 |

Prepare the stockholders' equity section of the balance sheet at December 31, 2017.

**Exercise (9):**

The stockholders' equity section of Aluminum Company of America (Alcoa) showed the following (in alphabetical order): additional paid-in capital $6,101, common stock $925, preferred stock $56, retained earnings $7,428, and treasury stock 2,828. All dollar data are in millions.

The preferred stock has 557,740 shares authorized, with a par value of $100.

At December 31 of the current year, 557,649 shares of preferred are issued and 546,024 shares are outstanding. There are 1.8 billion shares of $1 par value common stock authorized, of which 924.6 million are issued and 844.8 million are outstanding at December 31.

Prepare the stockholders' equity section of the current year.

**Exercise (10):**

Fechter Corporation had the following stockholders' equity accounts on January 1, 2017: Common Stock ($5 par) $500,000, Paid-in Capital in Excess of Par—Common Stock $200,000, and Retained Earnings $100,000. In 2017, the company had the following treasury stock transactions.

Mar. 1 Purchased 5,000 shares at $8 per share.

June 1 Sold 1,000 shares at $12 per share.

Sept. 1 Sold 2,000 shares at $10 per share.

Dec. 1 Sold 1,000 shares at $7 per share.

Fechter Corporation uses the cost method of accounting for treasury stock. In 2017, the company reported net income of $30,000.

(a) Journalize the treasury stock transactions, and prepare the closing entry at December 31, 2017, for net income.

مع أطيب تمنياتي بالتوفيق

**د/ ولاء سيد محمد**