CHAPTER 5

INVENTORIES AND COST OF SALES

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| **Chapter Outline****I. Inventory Basics** |
| A. Determining Inventory Items |
| Merchandise inventory includes all goods that a company owns and holds for sale. The following inventory items require special attention:1. Goods in Transit—if ownership has passed to the purchaser, the goods are included in the purchaser’s inventory. Ownership is determined by reviewing the shipping terms.
	1. FOB destination—goods included in buyer’s inventory after arrival at their destination.
	2. FOB shipping point—goods included in buyer’s inventory once they are shipped.

2. Goods on Consignment—goods shipped by the owner, called the **consignor**, to another party, the **consignee**.a. A consignee sells goods for the owner.b. The consignor continues to own the consigned goods and reports them in its inventory.3. Goods Damaged or Obsolete a. Damaged and obsolete (and deteriorated) goods are not reported in inventory if they cannot be sold.b. If these goods can be sold at a lower price, they are included in inventory at their **net realizable value**, the sales price minus the cost of making the sale.B. Determining Inventory Costs1. The cost of an inventory item includes its invoice cost minus any discount, plus any incidental costs (such as shipping, storage, and insurance).2. The *expense recognition principle* states that inventory costs are expensed as cost of goods sold in the period when inventory is sold. C. Internal Controls and Taking a Physical Count1. Events (theft, loss, damage, and errors) can cause the Inventory account balance to differ from the actual inventory on hand.2. Nearly all companies take a *physical count of inventory* at least once a year; the physical count is used to adjust the Inventory account balance to the actual inventory on hand.3. Internal controls when taking a physical count of inventory: |
| a. Prenumbered inventory tickets—each ticket must be accounted for.b. Those responsible for the inventory do not count the inventory.c. Counters confirm the validity of inventory, including its existence, amount, and quality.d. A second count is taken by a different counter.e. A manager confirms that all inventories are ticketed once, and only once. |
| **II. Inventory Costing under a Perpetual System** One of the most important issues in accounting for inventory is determining the per unit cost assigned to inventory items. Merchandise Inventory is updated for each purchase and sale of inventory. Cost of goods available for sale must be allocated between cost of goods sold and ending inventory. The periodic system is covered in Appendix 6A.1. Inventory Cost Flow Methods

Four methods are used to assign costs to inventory and cost of goods sold. Each method assumes a particular pattern for how costs flow through inventory. **Physical flow and cost flow need not be the same.**1. First-In, First-Out (FIFO)—assumes costs flow in the order incurred. (Results are identical under the periodic and perpetual systems.)

2. Last-In, First-Out (LIFO)—assumes costs flow in the *reverse* order incurred. (Results differ from periodic in the appendix because the periodic method applies its computation at period-end only versus the perpetual method that applies its computation at each sale.) 3. Weighted average—assumes costs flow in an average of the costs available. (Results differ from periodic in the appendix because the periodic method applies its computation at period-end only versus the perpetual method that applies its computation at each sale.)4. Specific identification—each item can be identified with a specific purchase and invoice. Specific identification is usually only practical for companies with expensive, custom-made inventory. (Results are identical under the periodic and perpetual systems.)B. Inventory Costing Illustration1. First-in, first-out (FIFO)— Assumes costs flow in the order incurred.2. Last-in, first-out (LIFO)— Assumes costs flow in the *reverse* order incurred.3. Weighted average— Weighted average equals cost of goods available for sale divided by the units available. Average is computed at the time of each sale.4. Specific identification— cost of goods sold is charged with the actual or invoice cost, leaving actual costs of inventory available in the inventory account. 5. The units of inventory are identical under all methods.C. Financial Statement Effects of Costing Methods1. When purchase prices do not change, each inventory costing method assigns the same amounts to inventory and to cost of goods sold. When purchase prices are different, the methods assign different cost amounts.
2. Rising Costs—when purchase costs regularly rise:

a. FIFO assigns the lowest amount to cost of goods sold, resulting in the highest gross profit and the highest net income. b. LIFO assigns the highest amount to cost of goods sold, resulting in the lowest gross profit and the lowest net income. c. Weighted average method yields results between FIFO and LIFO. 3. Falling Costs— When costs regularly decline, the reverse occurs for FIFO and LIFO.4. Method Advantages:a. FIFO inventory on the balance sheet approximates its current replacement cost; it also mimics the actual flow of goods for most businesses. b. LIFO cost of goods sold on the income statement approximates current costs; better match of current costs with revenues. c. Weighted average smooths out erratic price changes. d. Specific identification matches costs of items with revenues they generate. |
| **III. Valuing Inventory at LCM and Analyzing Inventory Errors** |
| 1. Lower of Cost or Market Inventory is reviewed to ensure it is reported at the **lower of cost or market (LCM)**.
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| 1. Computing the Lower of Cost or Market*—Market* in the term *LCM* is *replacement cost* for LIFO, but *net realizable value* for the other three methods.
2. A decline in market value means a loss of value in inventory
3. When market value is lower than inventory cost, a loss is recognized;
4. When market value is higher than inventory cost, no adjustment is made.
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| 1. Lower of cost or market pricing is applied in one of three ways to:

a. Each individual item separately,b. Major categories of items1. The entire inventory

6. Recording the Lower of Cost or Market—accounting rules require that inventory be adjusted to market when market is less than cost, but inventory normally cannot be written up to market when market exceeds cost.  |
| 1. Financial Statement Effects of Inventory ErrorsAn inventory error causes misstatements in cost of goods sold, gross profit, net income, current assets, and equity. It also causes misstatements in the next period’s financial statements because ending inventory of one period is the beginning inventory of the next.

1. Income Statement Effectsa. If ending inventory is understated, cost of goods sold is overstated and net income is understated.b. If beginning inventory is understated, cost of goods sold is understated and net income is overstated. c. If ending inventory is overstated, cost of goods sold is understated and net income is overstated. d. If beginning inventory is overstated, cost of goods sold is overstated and net income is understated.2. Balance Sheet Effectsa. If ending inventory is understated, assets and equity are understated.b. If ending inventory is overstated, assets and equity are overstated.  |
| **IV. Decision Analysis—Inventory Turnover and Days’ Sales in Inventory** |
| A. Inventory Turnover |
| 1. **Inventory turnover**, also called *merchandise inventory turnover*, measures the number of *times* a company’s average inventory was sold during an accounting period.
2. It is used to analyze short-term liquidity and assess if management is doing a good job controlling the amount of inventory.
3. A low ratio means company may have more inventory than it needs to support its sales volume.
4. A very high ratio means inventory might be too low which can cause lost sales if customers must back-order merchandise.
5. A high ratio is preferable if inventory is adequate to meet demand.
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| B. Days’ Sales in Inventory |
| 1. **Day’s sales in inventory** measures the adequacy of inventory to meet sales demand.
2. It reveals how much inventory is available in terms of the number of days’ sales.

3. It is calculated by dividing ending inventory by cost of goods sold, and then multiplying the result by 365.4. It estimates how many days it will take to convert inventory at the end of a period into accounts receivable or cash.5. Viewed as the buffer against out-of-stock inventory and useful in evaluating liquidity of inventory. |
| 1. Analysis of Inventory ManagementInventory management is a major emphasis for most merchandisers; they must both plan and control inventory purchases and sales. We prefer a high inventory turnover.
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| **V. Inventory Costing under a Periodic System (Appendix 5A)**One of the most important issues in accounting for inventory is determining the per unit cost assigned to inventory items. A**.** Inventory Cost Flow MethodsFour methods are used to assign costs to inventory and cost of goods sold. Each method assumes a particular pattern for how costs flow through inventory. **Physical flow and cost flow need not be the same.**1. First-In, First-Out (FIFO)—assumes costs flow in the order incurred. (Results are identical under the periodic and perpetual systems.)

2. Last-In, First-Out (LIFO)—assumes costs flow in the *reverse* order incurred. (Results differ from perpetual in the appendix because the periodic method applies its computation at period-end only versus the perpetual method that applies its computation at each sale.) 3. Weighted average—assumes costs flow in an average of the costs available. (Results differ from perpetual because the periodic method applies its computation at period-end only versus the perpetual method that applies its computation at each sale.)4. Specific identification—each item can be identified with a specific purchase and invoice. Specific identification is usually only practical for companies with expensive, custom-made inventory. (Results are identical under the periodic and perpetual systems.)B.Under the periodic inventory system, Merchandise Inventory is updated at the end of each period to reflect purchases and sales. Cost of goods available for sale must be allocated between cost of goods sold and ending inventory.1. Specific identification— At period-end, cost of goods sold is charged with the actual or invoice cost, leaving actual costs of inventory available in the inventory account. 2. First-in, first-out (FIFO)— At period-end, FIFO charges costs of the earliest units acquired to cost of goods sold, leaving costs of the most recent purchases in inventory. 3. Last-in, first-out (LIFO)— At period-end, LIFO charges costs of the most recent purchase to cost of goods sold, leaving costs of the earliest purchases in inventory. 4. Weighted average— At period-end, weighted average computes the average cost per unit of inventory available for sale and then charges this cost per unit to cost of goods sold; this leaves average cost per unit in inventory. Assumes costs flow using an average of the costs available. Average cost per unit equals cost of goods available for sale divided by the units available. 5. The units of inventory are identical under all methods. |
| 1. Financial Statement Effects of Costing Methods
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| 1. Rising Costs*:*
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| a. FIFO assigns the lowest amount to cost of goods sold, resulting in the highest gross profit and the highest net income. b. LIFO assigns the highest amount to cost of goods sold, resulting in the lowest gross profit and the lowest net income. c. Weighted average method yields results between FIFO and LIFO. 2. Falling Costs: When costs regularly decline:a. FIFO gives highest cost of goods sold and lowest gross profit and income.b. LIFO gives lowest cost of goods sold and highest gross profit and income.3. Method Advantages: a. FIFO inventory on the balance sheet approximates its current replacement cost; it also mimics the actual flow of goods for most businesses. b. LIFO cost of goods sold on the income statement approximates current costs; better match of current costs with revenues. c. Weighted average smooths out erratic price changes. d. Specific identification matches costs of items with revenues they generate.1. **Tax Effects of Costing Methods**Since inventory costs affect net income, they have potential tax effects.
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| **VI.** **Inventory Estimation Methods (Appendix 5B)**Inventory sometimes is estimated for two reasons. First, companies often report interim financial statements, but only take an annual physical count of inventory. Second, companies may require an inventory estimate if some casualty makes taking a physical count impossible. Estimates are usually only required for companies that use the periodic system.1. **Retail Inventory Method –** uses a three-step process to estimate ending inventory.
2. Step 1: Goods available for sale at retail minus net sales at retail equals ending inventory at retail.
3. Step 2: Goods available for sale at cost divided by goods available for sale at retail equals cost-to-retail ratio.
4. Step 3: Ending inventory at retail times cost-to-retail ratio equals estimated ending inventory at cost.
5. **Gross Profit Method** – estimates cost of ending inventory by applying the gross profit ratio to net sales at retail. Often used when inventory is destroyed, lost or stolen. Uses a two-step process.
6. Step 1: Net sales at retail times 1.0-gross profit ratio equals estimated cost of goods sold.
7. Step 2: Goods available for sale at cost minus estimated cost of goods sold equals estimated ending inventory at cost.
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