CHAPTER 6
INVENTORIES

LEARNING OBJECTIVES

1. DETERMINE HOW TO CLASSIFY INVENTORY AND INVENTORY QUANTITIES.

2. EXPLAIN THE ACCOUNTING FOR INVENTORIES AND APPLY THE INVENTORY COST FLOW METHODS.

3. EXPLAIN THE FINANCIAL EFFECTS OF THE INVENTORY COST FLOW ASSUMPTIONS.

4. EXPLAIN THE LOWER-OF-COST-OR-MARKET BASIS OF ACCOUNTING FOR INVENTORIES.

5. INDICATE THE EFFECTS OF INVENTORY ERRORS ON THE FINANCIAL STATEMENTS.

6. COMPUTE AND INTERPRET THE INVENTORY TURNOVER.

*7. APPLY THE INVENTORY COST FLOW METHODS TO PERPETUAL INVENTORY RECORDS.

*8. DESCRIBE THE TWO METHODS OF ESTIMATING INVENTORIES.
CHAPTER REVIEW

Classifying Inventory

1. (L.O. 1) **Merchandise inventory** has two common characteristics: (a) it is owned by the company and (b) it is in a form ready for sale in the ordinary course of business.

2. A manufacturer’s inventory is usually classified into three categories:
   a. **Finished goods** that are completed and ready for sale.
   b. **Work in process** that is in various stages of production but not yet completed.
   c. **Raw materials** that are on hand waiting to be used in production.

Determination of Inventory Quantities

3. The determination of inventory quantities involves (a) taking a physical inventory of goods on hand and (b) determining the ownership of goods.

4. Taking a physical inventory involves counting, weighing or measuring each kind of inventory on hand. Internal control procedures should be followed in taking the inventory in order to minimize errors.

5. For goods in transit, **legal title** is determined by the terms of sale. When the terms are:
   a. **FOB (free on board) shipping point**, ownership of the goods passes to the buyer when the public carrier accepts the goods from the seller.
   b. **FOB destination**, legal title to the goods remains with the seller until the goods reach the buyer.

6. Under a consignment arrangement, the holder of the goods (called the consignee) does not own the goods. Ownership remains with the shipper of the goods (consignor) until the goods are actually sold to a customer. Consigned goods should be included in the consignor’s inventory—not the consignee’s inventory.

Inventory Costing

7. (L.O. 2) Inventory is accounted for at cost which includes all expenditures necessary to acquire goods and place them in a condition ready for sale. After a company has determined the quantity of units of inventory, it applies unit costs to the quantities to determine the total cost of the inventory and the cost of goods sold.

Specific Identification

8. The **specific identification method** identifies the particular units sold so that the cost of the specific unit sold is charged to the cost of goods sold. This method is possible when a company sells a limited variety of high unit-cost items that can be clearly identified from the time of purchase through the time of sale.

9. The allocation of inventoriable costs may be made under any of the following assumptions as to the **flow of costs** (a) first-in, first-out (FIFO), (b) last-in, first-out (LIFO), or (c) average-cost.

FIFO

10. The **FIFO method** assumes that the costs of the earliest goods purchased are the first to be sold.
    a. This method often parallels the actual physical flow of the merchandise.
    b. Under this method, the ending inventory is based on the latest units purchased.
LIFO

11. The **LIFO method** assumes that the costs of the latest units purchased are the first to be sold.
   a. This method seldom coincides with the actual physical flow of inventory.
   b. Under this method, all goods purchased during the period are assumed to be available for the first sale, regardless of the date of purchase.
   c. The ending inventory is found by taking the unit cost of the oldest goods and working forward until all units of inventory are costed.

**Average-Cost**

12. The **average-cost method** assumes that the goods available for sale are similar in nature.
   a. Under this method, the cost of goods available for sale is allocated on the basis of **weighted-average unit cost**.
   b. The formula for determining the weighted-average unit cost is: \[ \text{Cost of goods available for sale} \div \text{total units available for sale} \]

**Financial Statement Effects**

13. (L.O. 3) In periods of rising prices, FIFO produces a higher net income, LIFO the lowest, and average cost falls in the middle. The reverse is true when prices are falling.

14. Companies adopt different inventory costing methods because of:
   a. Balance sheet effects: the inventory costs are closer to current costs under FIFO than under LIFO.
   b. Income statement effects: in addition to the effects on net income in (13) above, LIFO enables the company to avoid reporting paper or phantom profit as economic gain.
   c. Tax effects: in a period of inflation LIFO results in the lowest income taxes.

**Lower-of-Cost-or-Market**

15. (L.O. 4) The value of inventory for companies in certain industries can drop due to changes in technology or fashions. This situation requires valuing inventory at the lower-of-cost-or-market (LCM) in the period in which the price decline occurs.

16. Market is defined as the **current replacement cost** of the goods, not selling price.

**Effects of Inventory Errors**

17. (L.O. 5) The effects of **inventory errors** on the current year’s income statement are:

<table>
<thead>
<tr>
<th>Inventory Error</th>
<th>Cost of Goods Sold</th>
<th>Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory understated</td>
<td>Understated</td>
<td>Overstated</td>
</tr>
<tr>
<td>Beginning inventory overstated</td>
<td>Overstated</td>
<td>Understated</td>
</tr>
<tr>
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</tr>
<tr>
<td>Ending inventory overstated</td>
<td>Understated</td>
<td>Overstated</td>
</tr>
</tbody>
</table>

18. The effects of ending inventory errors on the balance sheet are:

<table>
<thead>
<tr>
<th>Ending Inventory</th>
<th>Assets</th>
<th>Liabilities</th>
<th>Owner’s Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overstated</td>
<td>Overstated</td>
<td>No effect</td>
<td>Overstated</td>
</tr>
<tr>
<td>Understated</td>
<td>Understated</td>
<td>No effect</td>
<td>Understated</td>
</tr>
</tbody>
</table>
19. In the financial statements:
   a. Inventory is usually classified as a current asset after receivables in the balance sheet, and cost of
goods sold is subtracted from sales in the income statement.
   b. There should be disclosure of (1) the major inventory classifications, (2) the basis of accounting, and (3)
   the costing method.

**Inventory Turnover**

20. (L.O. 6) The *inventory turnover* measures the number of times on average the inventory is sold during
the period.

\[
\text{Cost of Goods Sold} \div \text{Average Inventory} = \text{Inventory Turnover}
\]

*Applying Perpetual Inventory*

21. (L.O. 7) Each of the inventory cost flow methods may be used in a perpetual inventory system.
   a. Under FIFO, the cost of the earliest goods on hand prior to each sale is charged to cost of goods
   sold.
   b. Under the LIFO method, the most recent purchase prior to sale is allocated to the units sold.
   c. When the *moving-average method* is used, a new average is computed after each purchase by
   dividing the cost of goods available for sale by the units on hand.

**Estimating Inventories**

22. (L.O. 8) Inventories may have to be estimated when (a) management wants monthly or quarterly financial
   statements or (b) a fire or other type of casualty makes it impossible to take a physical inventory.

**Gross Profit Method**

23. The *gross profit method* is widely used to estimate the ending inventory. Two steps are involved in
using this method.
   a. The estimated cost of goods sold is determined by subtracting the estimated gross profit from net
   sales.
   b. The estimated cost of goods sold is subtracted from cost of goods available for sale to determine the
   estimated cost of the ending inventory.

**Retail Inventory Method**

24. The *retail inventory method* is used by retail companies to estimate the cost of the inventory. The steps
   in using this method are:
   a. \[
   \text{Goods Available for Sale at Retail} - \frac{\text{Net Sales}}{\text{Ending Inventory at Retail}} = \text{Cost-to-Retail Ratio}
   \]
   b. \[
   \text{Goods Available for Sale at Cost} \div \text{Goods Available for Sale at Retail} = \frac{\text{Estimated Cost of Ending Inventory}}{\text{Retail Ratio}}
   \]
   c. \[
   \text{Ending Inventory at Retail} \times \frac{\text{Cost-to-Retail Ratio}}{\text{Estimated Cost of Ending Inventory}} = \text{Cost-to-Retail Ratio}
   \]
BRIEF EXERCISE 6-1

(a) Ownership of the goods belongs to Farley. Thus, these goods should be included in Farley’s inventory.

(b) The goods in transit should not be included in the inventory count because ownership by Farley does not occur until the goods reach the buyer.

(c) The goods being held belong to the customer. They should not be included in Farley’s inventory.

(d) Ownership of these goods rests with the other company. Thus, these goods should not be included in the physical inventory.

BRIEF EXERCISE 6-2

The items that should be included in goods available for sale are:

(a) Freight-In
(b) Purchase Returns and Allowances
(c) Purchases
(e) Purchase Discounts

BRIEF EXERCISE 6-3

(a) The ending inventory under FIFO consists of 200 units at $8 + 160 units at $7 for a total allocation of $2,720 or ($1,600 + $1,120).

(b) The ending inventory under LIFO consists of 300 units at $6 + 60 units at $7 for a total allocation of $2,220 or ($1,800 + $420).
BRIEF EXERCISE 6-4

Average unit cost is $6.89 computed as follows:

\[
\begin{align*}
300 \times 6 &= 1,800 \\
400 \times 7 &= 2,800 \\
200 \times 8 &= 1,600 \\
900 \\ 6,200
\end{align*}
\]

\[6,200 \div 900 = 6.89\] (rounded).

The cost of the ending inventory is $2,480 or \((360 \times 6.89)\).

BRIEF EXERCISE 6-5

(a) FIFO would result in the highest net income.
(b) FIFO would result in the highest ending inventory.
(c) LIFO would result in the lowest income tax expense (because it would result in the lowest net income).
(d) Average-cost would result in the most stable income over a number of years because it averages out any big changes in the cost of inventory.

BRIEF EXERCISE 6-6

Cost of good sold under:

<table>
<thead>
<tr>
<th></th>
<th>LIFO</th>
<th>FIFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchases</td>
<td>$6 \times 120</td>
<td>$6 \times 120</td>
</tr>
<tr>
<td>$7 \times 200</td>
<td>$7 \times 200</td>
<td></td>
</tr>
<tr>
<td>$8 \times 140</td>
<td>$8 \times 140</td>
<td></td>
</tr>
<tr>
<td>Cost of goods available for sale</td>
<td>$3,240</td>
<td>$3,240</td>
</tr>
<tr>
<td>Less: Ending inventory</td>
<td>1,140</td>
<td>1,400</td>
</tr>
<tr>
<td>Cost of goods sold</td>
<td>$2,100</td>
<td>$1,840</td>
</tr>
</tbody>
</table>

Since the cost of goods sold is $260 less under FIFO ($2,100 – $1,840) that is the amount of the phantom profit. It is referred to as “phantom profit” because FIFO matches current selling prices with old inventory costs. To replace the units sold, the company will have to pay the current price of $8 per unit, rather than the $6 per unit which some of the units were priced at under FIFO. Therefore, profit under LIFO is more representative of what the company can expect to earn in future periods.
**BRIEF EXERCISE 6-7**

<table>
<thead>
<tr>
<th>Inventory Categories</th>
<th>Cost</th>
<th>Market</th>
<th>LCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameras</td>
<td>$12,000</td>
<td>$12,100</td>
<td>$12,000</td>
</tr>
<tr>
<td>Camcorders</td>
<td>9,500</td>
<td>9,700</td>
<td>9,500</td>
</tr>
<tr>
<td>DVD players</td>
<td>14,000</td>
<td>12,800</td>
<td>12,800</td>
</tr>
<tr>
<td><strong>Total valuation</strong></td>
<td><strong>$34,300</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BRIEF EXERCISE 6-8**

The understatement of ending inventory caused cost of goods sold to be overstated $7,000 and net income to be understated $7,000. The correct net income for 2014 is $97,000 or ($90,000 + $7,000).

Total assets in the balance sheet will be understated by the amount that ending inventory is understated, $7,000.

**BRIEF EXERCISE 6-9**

Inventory turnover: \[ \frac{\$270,000}{\frac{\$60,000 + \$40,000}{2}} = \frac{\$270,000}{\$50,000} = 5.4 \]

Days in inventory: \[ \frac{365}{5.4} = 67.6 \text{ days} \]