CHAPTER 8

Valuation of Inventories: A Cost Basis Approach
LECTURE OUTLINE

This chapter can be covered in three to four class sessions. Students should have had previous exposure to inventory accounting topics except for dollar-value LIFO and the modified perpetual system (perpetual records kept in units only).

A. Among the most significant assets of many enterprises, inventories are asset items held for sale in the ordinary course of business or goods that will be used or consumed in the production of goods to be sold.

1. For manufacturing firms the inventory amount may be broken down into raw materials, work in process, and finished goods.

2. Management is vitally interested in inventories in order to prevent stocking up on excessive and unsaleable inventories.

B. Inventory Record Systems.

Contrast the accounting procedures under the perpetual and periodic inventory systems by using Illustration 8-1. This example is based on the exhibit in the textbook on pages 397.

1. **Perpetual** inventory system—The costs of purchases and sales are recorded directly in the Inventory account (perpetual record kept in units and dollars).

2. **Modified perpetual** inventory system—The cost of purchases is recorded directly in the inventory account. The cost of sales is not recorded at the time of sale, but a record is kept of the **number** of units sold (perpetual record kept in units only).

3. **Periodic** inventory system—The cost of purchases is recorded in a Purchases (nominal or temporary) account. The balance in the Inventory account remains unchanged during the period. No record is kept at the time of sale of the number or cost of the units sold. At the end of the period the quantity of goods on hand is determined by physical count and the cost of ending inventory is recorded. Cost of goods sold is determined by adding the beginning inventory to the purchases and deducting the ending inventory.
C. Basic Issues in Inventory Valuation. These include the determination of the (1) items to be included in inventory, (2) the costs to be included in inventory, and (3) the cost flow assumption to be adopted.

D. Items to be Included in Inventory. Technically, purchases should be recorded when legal title passes to the buyer. The following items require careful judgment:

1. **Goods in Transit:** If the goods are shipped **f.o.b. shipping point**, title passes to the buyer when the seller delivers the goods to the common carrier. If the goods are shipped **f.o.b. destination**, title passes when the buyer receives the goods.

2. **Consigned Goods:** Goods out on consignment remain the property of the consignor.

3. **Special Sale Agreements** in which the transfer of legal title may not be accompanied by a transfer of the risks of ownership. (The concept of revenue realization can be discussed in connection with these special arrangements.)

   a. **Sales with buyback agreement.**

      (1) In essence, the "seller" finances the cost of the inventory by transferring legal title to a third party and receiving "payment." The "seller" then agrees to "buy" the inventory back at a specified price over a specified future period.

      (2) These transactions are often referred to as "parking transactions" because the seller simply parks the inventory on another firm's balance sheet and uses it as a financing device.

      (3) In these arrangements the inventory and related liability from the repurchase agreement should remain on the "seller's" books. No sale should be recorded.

   b. **Sales with high rates of return.**

      (1) When the amount of returns can be reasonably estimated, the goods should be considered sold.
(2) If returns are unpredictable, the goods should not be removed from the seller’s inventory account.

c. **Installment sales.** The goods should be removed from the seller’s inventory (i.e., considered sold) if the percentage of bad debts can be reasonably estimated.

4. **Effect of Inventory Errors.**

   a. The three most common types of inventory errors:

      (1) Correct recording of **purchases** but incorrect computing and recording of **ending inventory** count.

      (2) Recording **purchase** transactions in the wrong accounting period. However, **ending inventory** is computed and recorded correctly.

      (3) Failure to include an item as a recorded **purchase** combined with failure to include and record the item in the **ending inventory** count.

   b. Corrections of inventory errors may involve two procedures:

      (1) Preparation of correcting **journal entries.** Generally, a purchase is recorded when the invoice arrives. If this does not coincide with passage of legal title by the end of the accounting period, correcting entries may be required to prevent "cut-off errors." (See Exercises 8-2, 8-3, 8-4, and 8-5 in the textbook.)

      (2) Computation of the correct **amounts** of inventory and related items including purchases, cost of goods sold, net income, retained earnings, accounts payable, working capital, and the current ratio.

         (a) This is a good place to reinforce understanding of the basic inventory equation:

         \[
         \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory} = \text{Cost of Goods Sold.}
         \]

         (b) Point out the obvious, but useful, fact that the ending inventory of one period is the beginning inventory of the next period.

   c. Discuss the impact of inventory errors on the affected accounts.
Illustration 8-2 demonstrates the effects of inventory errors on the income statement by emphasizing the debit or credit balance of the affected items.

Illustration 8-3 summarizes the effects of inventory errors on the income statement and the balance sheet.

E. Costs to be Included in Inventory.

1. Distinguish between product costs and period costs. **Product costs** or inventoriable costs are those costs directly connected with bringing goods to the buyer’s place of business and converting them to a saleable condition. **Period costs** such as selling and general and administrative expenses are not considered to be directly related to the acquisition or production of goods.

2. **Interest costs** associated with getting inventories ready for sale are usually expensed as incurred. However, SFAS No. 34 requires capitalization of interest cost related to construction of discrete projects such as ships or real estate projects. (Capitalization of interest is discusses in detail in Chapter 10.)

3. Manufacturing Costs: Includes all costs which are traceable to the production of the product. These costs are classified as direct materials, direct labor, and manufacturing overhead.

4. Variable costing versus absorption costing. Under variable costing only costs that vary directly with production are charged to products. Under absorption costing, which is the accepted procedure, all manufacturing costs are included in the cost of the inventory.

5. Purchase Discounts. Discuss the gross and net methods.
   
   a. **Gross method.** Purchases and accounts payable are recorded at the gross amount. Purchase discounts taken are credited to the Purchase Discounts account which is reported in the income statement as a reduction of Purchases.
b. **Net method** (considered more appropriate than the gross method). Purchases and accounts payable are recorded at the net amount. Purchase discounts not taken are debited to the Purchase Discounts Lost account which is reported in the other expense section of the income statement.

F. Choice of a Flow Assumption. This problem arises when numerous purchases have been made at different prices and it is necessary to identify which goods remain on hand and which have been sold.

Illustration 8-4 provides a comparison of ending inventory computations under FIFO, LIFO, and average cost under periodic and perpetual systems.

1. **Specific Identification:** Used where a small number of costly, distinctive items are sold. It offers the opportunity to manipulate income.

2. **Average Cost:** Items in the ending inventory and items sold are priced at the average cost of goods available during the period. Either weighted average (periodic) or moving average (perpetual) procedures may be used.

3. **First-In, First-Out:** Assumes goods are used in the order purchased. While this method presents ending inventory at approximately current cost, it does not match current costs against current revenues.

   a. Ending Inventory and cost of goods sold will be the same under both periodic and perpetual inventory systems.

4. **Last-In, First-Out:** Assumes that the last goods purchased are used first.

   Computational approaches to LIFO:
a. **Specific Goods or Unit LIFO**—Each item in the inventory is individually costed on a LIFO basis.

   (1) **LIFO Liquidations.** A frequent occurrence when specific goods LIFO is used. When the inventory balance is reduced (liquidated) the cost of the old inventory layers is included in cost of goods sold, resulting in higher net income.

b. **Specific Goods Pooled LIFO**—Inventory items are combined in pools of similar items. This approach may help prevent LIFO liquidations because decreases in one quantity may be offset by increases in another quantity.

c. **Dollar-value LIFO**—This differs from specific goods pooled LIFO in that increases and decreases in a pool are measured in terms of the total dollar value and not the physical quantity of goods in the pool.

(1) Discuss the steps involved in the dollar-value LIFO approach.

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**TEACHING TIP**

Illustration 8-5, which is based on the Bismark Company data in the textbook, shows a straightforward for presenting the dollar-value LIFO computations.

(a) Compute the quantity of ending inventory at current cost. (This approximates FIFO.)

(b) Divide (a) by the current price index to obtain the ending inventory at base-year cost.

(c) Split (b) into layers depending on the year the items were acquired.

(d) Multiply each layer in (c) by the appropriate price index (price index in the year of acquisition) to obtain the ending inventory at dollar-value LIFO cost.

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**TEACHING TIP**

Under certain circumstances the dollar-value LIFO approach produces the same inventory cost as the specific goods LIFO approach. This can be demonstrated by using the example in Illustration 8-6. (See also Bainbridge, bibliography reference 17.)
(2) Discuss the computation of a price index.

(a) Some companies may be able to use published external price indices.

(b) Many companies must compute internal price indices. The double-extension method is discussed in the chapter. The price index for the current year is computed as follows.

\[
\frac{\text{Ending Inventory at Current Cost}}{\text{Ending Inventory at Base-Year Cost}}
\]

d. LIFO Reserve or (Allowance to Reduce Inventory to LIFO). Used when a company maintains a FIFO, average cost, or standard cost system for internal reporting purposes and LIFO for tax and external reporting purposes.

G. Choosing Among Alternative Inventory Methods.

1. Point out that the major conceptual problem with inventory accounting arises from the inability of double-entry accounting to show current values on both the balance sheet and the income statement.

2. Advantages of LIFO.

   a. Matching. LIFO matches current costs against current revenue to provide a better measure of current earnings.

   b. Tax benefits. During times of rising prices, LIFO provides a deferral of income taxes payable.

   c. Improved cash flow. This arises because of the tax benefits.

   d. Future earnings hedge. LIFO virtually eliminates write downs of inventory to market as a result of price declines because LIFO inventory is usually carried at much less than net realizable value.
3. Disadvantages of LIFO.

a. **Reduced earnings.** During times of rising prices, reported earnings under LIFO are less than they would be under FIFO. However, because the IRS has now relaxed the LIFO conformity rule, companies are permitted to make supplementary disclosure of non-LIFO income numbers in the financial statements.

b. **Inventory understated.** Under LIFO the oldest costs (which are the lowest costs if prices are rising) remain in inventory.

c. **Physical flow.** LIFO does not approximate the actual physical flow of items except in unusual situations.

d. **Current cost income not measured.** LIFO falls short of measuring current cost (replacement cost) income. However, LIFO does this better than either FIFO or average cost methods.

e. **Involuntary liquidation.** If layers of old costs are eliminated, distortions in reported income can occur. Many companies experienced LIFO liquidations in the early 1980s. (See Saunders and Rohmann and also Schiff, bibliography reference 22.)

f. **Poor buying habits.** A company may adopt an uneconomic pattern of purchases in order to avoid the liquidation problem or in order to manipulate net income.

4. The variety of inventory methods that exist have been devised to provide an accurate measure of net income rather than to permit manipulation of reported income.