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# Inventory

December 2021

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# *About the Inventory guide*

PwC is pleased to offer the first edition of our *Inventory* guide. This guide summarizes the applicable accounting literature, including relevant references to and excerpts from the FASB's Accounting Standards Codification (the Codification). It also provides our insights and perspectives, interpretative and application guidance, illustrative examples, and discussion on emerging practice issues. The PwC guides should be read in conjunction with the applicable authoritative accounting literature. Guidance on financial statement presentation and disclosure related to inventory can be found in PwC's *Financial statement presentation* guide (FSP 8.4).

## *References to US GAAP*

Definitions, full paragraphs, and excerpts from the Financial Accounting Standards Board's Accounting Standards Codification are clearly designated, either within quotes in the regular text or enclosed within a shaded box. In some instances, guidance was cited with minor editorial modification to flow in the context of the PwC Guide. The remaining text is PwC's original content.

## *References to other chapters and sections in this guide*

When relevant, the discussion includes general and specific references to other chapters of the guide that provide additional information. References to another chapter or particular section within a chapter are indicated by the abbreviation "IV" followed by the specific section number (e.g., IV 2.2.3 refers to section 2.2.3 in chapter 2 of this guide).

## *References to other PwC guidance*

This guide focuses on the accounting and financial reporting considerations for inventory. It supplements information provided by the authoritative accounting literature and other PwC guidance. This guide provides general and specific references to chapters in other PwC guides to assist users in finding other relevant information. References to other guides are indicated by the applicable guide abbreviation followed by the specific section number. The other PwC guides referred to in this guide, including their abbreviations, are:

- *Derivatives and hedging (DH)*
- *Financial statement presentation (FSP)*
- *Foreign currency (FX)*
- *Property, plant, equipment and other assets (PPE)*
- *Revenue from contracts with customers (RR)*

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# ***Chapter 1:***

## ***Inventory costing***

## 1.1 Inventory costing overview

The primary source of existing FASB authoritative guidance on inventory is ASC 330, *Inventory*. This guide assumes adoption of ASC 606, *Revenue from Contracts with Customers*.

## 1.2 Inventory costing principles

ASC 330 sets forth general principles applicable to the determination of the cost of inventories and subsequent measurement at lower-of-cost-or-market or lower-of-cost-and-net realizable value.

### Excerpt from ASC 330-10-20

Inventory: The aggregate of those items of tangible personal property that have any of the following characteristics:

- a. Held for sale in the ordinary course of business
- b. In the process of production for such sale
- c. To be currently consumed in the production of goods or services to be available for sale.

The determination of which specific costs (or portion thereof) would be acceptable for capitalization as inventory costs cannot be addressed generally, but will vary by industry and will depend on the individual facts and circumstances of a reporting entity's operations.

### 1.2.1 Consignment arrangements

In some situations, a reporting entity may enter into "consignment" agreements with vendors related to the purchase of raw materials used in the production of finished goods. CON 8 defines an asset as a present right of an entity to an economic benefit. In the context of inventory purchases, we generally believe control is conveyed through title transfer; however, consistent with ASC 606-10-25-23, an asset is transferred when (or as) the customer obtains control of that asset, therefore, a company may have an asset before the title transfers because control of the asset has transferred. The following are some of the factors that an entity should consider in determining whether a company controls an asset:

- Who is responsible for the goods if they are stolen, destroyed, or become obsolete?
- Who bears the market risk as it relates to price fluctuation/volatility of the inventory?
- Can a vendor unilaterally take back the inventory?
- Can a vendor unilaterally swap out the inventory/change the mix?
- Can the company return the inventory, other than due to defects?
- Has the company accepted the inventory?

- Can the company utilize the inventory, without any restrictions from a vendor?
- Who has physical possession of the inventory?
- At what point is the company obligated to pay for the inventory (i.e., upon delivery or from the point that the inventory is utilized)?

Refer to RR 6 for considerations on the transfer of control and RR 8.6 for guidance on consignment arrangements.

#### **1.2.1.1 Consignment arrangements involving certain commodities**

Certain industries use precious metals (e.g., gold, silver, platinum) as raw materials in their production processes. Due to the significant cost of these precious metals, companies have explored ways to reduce the amount of their investment in inventory, such as implementing precious metals consignment arrangements with a financial institution or other vendor.

In these arrangements, title typically remains with the financial institution or vendor, although economic and physical risk of loss is generally transferred to the manufacturer upon delivery to the manufacturer's location. Some arrangements require that the manufacturer segregate the precious metal as property of the financial institution/vendor, while others allow the manufacturer to commingle the precious metal with company-owned inventory. The financial institution/vendor generally charges an interest-like "consignment fee," which is generally a stated percentage of the current value of the quantity on hand. At the end of the consignment period, the company can generally contractually settle with the financial institution/vendor by either delivering an equivalent volume of precious metal or by delivering an amount of cash equal to the current value of the precious metal.

Determining whether the precious metals under this type of arrangement should be recognized as inventory of the company requires a holistic evaluation of the terms of the arrangement and application of judgment. It also may require a detailed understanding of the manner in which the company manages the precious metals inventory and its specific manufacturing processes. The ability of the financial institution/vendor to unilaterally demand return of the inventory may indicate that control remains with the financial institution/vendor. However, this factor alone is not determinative, and all other provisions of the arrangement should be considered.

Often, these arrangements allow the financial institution/vendor to terminate the arrangement with a reasonable notice period. In these cases, these arrangements may provide the company with the option to either physically return the precious metal to the financial institution/vendor or deliver an amount of cash equal to the current value of the precious metal on consignment. However, consideration should be given to whether the company has the ability to return the physical product and the practicality of extracting the precious metal from work-in-process or finished goods inventory. For example, the cost of extracting the precious metal from the work-in-process or finished goods inventory could be considered so significant that it is impracticable for the company to return precious metals already incorporated into the production cycle. If the likelihood of returning the precious metals to the financial institution/vendor is considered remote, the company should recognize the inventory on its balance sheet when the precious metal is incorporated into the work in process or finished goods.

If the company determines that it has control of the precious metal, and accordingly should record inventory, the company would record a corresponding liability. Consistent with ASC 330-10-30-1, the inventory asset and corresponding liability would be recorded at cost, which would generally be the fair value of the precious metal on the date control was obtained by the company (spot price). The company should also evaluate whether the liability is indexed to precious metals prices, including evaluating whether a derivative is present in the arrangement pursuant to ASC 815.

## **1.3 Inventory costing**

The primary basis of accounting for inventories is cost, provided cost is not higher than the net amount realizable from the subsequent sale of the inventories (refer to IV 1.3.2). Cost may be determined using a variety of cost flow assumptions, such as first-in, first-out (FIFO), average cost, or last-in, first-out (LIFO). Regardless of the cost flow assumption chosen, the nature of costs includable in inventory will be consistent. Although many companies may use a standard costing approach in their operations, for financial reporting purposes, variances between actual costs and standard costs must be absorbed so as to reflect actual costs in inventory, subject to the considerations in ASC 330-10-30-3 through ASC 330-10-30-8.

### **1.3.1 Inventory elements of cost**

The definition of cost as applied to inventories means, in principle, the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location. It is understood to mean acquisition and production costs, and its determination involves many considerations. Abnormal costs related to freight, handling, and wasted materials (spoilage) should be included in current period charges rather than deferred as a portion of inventory costs. In the context of freight and handling, “abnormal” generally means those costs related to activities that are duplicative or redundant—that is, not a normal element of the supply chain or production process (e.g., movement from one warehouse to another warehouse as a result of an unplanned shutdown at the primary manufacturing facility or a natural disaster). Higher than normal or higher than anticipated costs for otherwise routine activities are not “abnormal costs” in this context. In addition, the concept of wasted materials (spoilage) refers specifically to goods that are damaged or destroyed or lost (i.e., production yield) during the production process. Merely incurring higher costs when acquiring inventory from third parties is not considered “wasted materials.” Those higher costs should be capitalized, subject to lower of cost and net realizable value considerations.

Companies that hold or enter into firm commitments to purchase inventories that are commodities or to protect against fluctuations in market prices of inventories may enter into futures contracts to hedge price risk associated with such inventories or transactions. Under ASC 815, all derivative instruments must be recognized and subsequently measured on an entity’s balance sheet at fair value. The accounting for changes in fair value of a derivative instrument for a period will depend on the intended use of the derivative instrument and on whether it qualifies for hedge accounting. See PwC’s *Derivatives and hedging* guide, for guidance on accounting for hedging activities.

### **1.3.2 Lower of cost and net realizable value**

For inventories measured using any method other than LIFO or the retail inventory method (RIM), ASC 330-10-35 establishes the lower of cost and net realizable value rule as the guiding principle for measuring inventories. For inventories measured using RIM, refer to IV 2. For inventories measured using the LIFO cost flow assumption, refer to IV 3.8.



ASC 330 defines “net realizable value” (NRV) as the estimated selling price in the ordinary course of business less reasonably predictable costs of completion, disposal, and transportation. Additionally, ASC 330-10-35-4 states that no loss should be recognized on inventories unless it is clear that a loss has been sustained.

In applying the lower of cost and NRV principle to raw materials and work-in-progress inventories, it is necessary to estimate the costs to convert those items into saleable finished goods in order to determine NRV. In determining the net amount to be realized on subsequent sales, selling costs should include only direct items, such as shipping costs and commissions on sales.

Determining NRV at the balance sheet date requires the application of professional judgment, and all available data, including changes in product prices that have occurred or are expected to occur subsequent to the balance sheet date, should be considered. For example, increases in prices subsequent to the balance sheet date but prior to issuance of the financial statements would likely demonstrate that the decline in prices at the balance sheet date was temporary, indicating that a lesser or no NRV allowance is required. However, a subsequent decrease in prices may indicate the need for an NRV adjustment at the balance sheet date. Thus, a decrease in selling price subsequent to the balance sheet date that is not the result of unusual circumstances, such as abrupt and significant but short-lived changes in supply and/or demand for the item, generally should be considered in determining NRV at the balance sheet date. See FSP 28.5.3 for additional details on recognized subsequent events for inventory.

Example IV 1-1 illustrates the impact of subsequent events on inventory valuation.

### **EXAMPLE IV 1-1**

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#### **Assessing subsequent events for inventory valuation**

During January 2020, Company A enters into a global restructuring program under which it will close certain facilities and discontinue certain product offerings. Most of the product offerings to be discontinued are currently profitable. The plan will be executed in phases beginning in October 20X0 and will continue for a period of two years. Each phase of the plan is subject to several levels of operational review and revision before ultimate approval by the CEO. Plans for product discontinuance may be revised significantly during review and may be rejected by the CEO. If products are discontinued, Company A will attempt to sell the inventory at salvage value or discard it.

The first phase is approved by the CEO in January 20X1 prior to the issuance of Company A’s calendar year-end financial statements.

Should the effect of the discontinuance be considered in the NRV assessment?

#### *Analysis*

Yes. Although the products in question are profitable at the balance sheet date, all information related to inventory valuation should be taken into account through the issuance of the financial statements. Company A had a global reorganization plan in place prior to the balance sheet date. The fact that the phase of the plan in question was not approved until after the balance sheet date would not provide a basis to defer the loss. This is in contrast to when a specific event results in the loss of value of the inventory, such as due to a post balance sheet fire. In that case, (i.e., a clear triggering event occurring after the balance sheet date), the inventory would be impaired in the same period as the specific event occurred.

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### **1.3.2.1 Unit of account for NRV assessment**

ASC 330-10-35-8 indicates that, depending on the character and composition of the inventory, the lower of cost and NRV test may be performed on an item-by-item basis, by major category of inventory, or at any other level that most clearly reflects periodic income such that losses are not inappropriately deferred. The method used should be consistently applied. Raw material inventories related to a single finished product should be grouped together for the purpose of evaluating the need for an NRV write-down. Generally, there is no need to write down individual components of a particular finished product if the net realizable value of the finished product is greater than the aggregate costs of the components, the costs of production, and direct selling expenses.

The greater the diversification of finished goods, inventories, and lines of business in which an entity operates, the greater the need for care in determining the appropriate unit of account when performing the net realizable value assessment. In general, we believe it would be inappropriate to apply a broad (e.g., entity-wide) approach to the lower of cost and NRV valuation when offsetting unrelated gains mask losses.

### **1.3.2.2 Adverse purchase commitments**

Losses expected to arise from firm, non-cancelable and unhedged commitments for the future purchase of inventory items should be recognized unless the losses are recoverable through firm sales contracts or other means pursuant to ASC 330-10-35-17 through ASC 330-10-35-18.

### **1.3.2.3 Declines in NRV at interim dates**

ASC 270-10-45-6 and ASC 330-10-55-2 require that inventories be written down during an interim period to the lower of cost and NRV unless it is reasonably expected that the net realizable value will recover before the earlier of the inventory being sold and the end of the fiscal year. Situations in which an interim write-down would not be necessary are generally limited to seasonal price fluctuations.

As detailed in ASC 270-10-45-6, inventory losses from NRV declines should not be deferred beyond the interim period in which the decline occurs if they are not expected to be restored prior to the inventory being sold or the end of the fiscal year. Recoveries of such losses on the same inventory in later interim periods of the same fiscal year through NRV recoveries should be recognized as gains in the later interim period. Such gains cannot exceed previously recognized losses.

As indicated in SAB Topic 5.BB, based on ASC 330-10-35-14, a write-down of inventory to the lower of cost and NRV at the close of a fiscal period creates a new cost basis that subsequently cannot be marked up based on changes in underlying circumstances after the company's fiscal year-end. Based on this guidance, lower of cost and NRV write-downs recorded during an interim period can be reversed (partially or fully) only in subsequent interim periods of the same fiscal year if NRV recovers prior to the earlier of the inventory being sold and the end of the same fiscal year.

### 1.3.2.4 **Mark-to-market inventories**

ASC 330-10-35-15 permits the use of “mark-to-market” accounting for certain inventories.

#### **Excerpt from ASC 330-10-35-15**

Precious metals having a fixed monetary value with no substantial cost of marketing may be stated at such monetary value; any other exceptions must be justifiable by inability to determine appropriate approximate costs, immediate marketability at quoted market price, and the characteristic of unit interchangeability.

We expect the circumstances in which inventories can be carried at market to be extremely rare. In particular, ASC 932-330-35-1 provides accounting guidance for oil and gas companies and specifically prohibits measuring physical inventory at fair value, except when indicated by the authoritative literature.

#### **ASC 932-330-35-1**

Energy trading contracts that are not accounted for as derivatives in accordance with Topic 815 on derivatives and hedging shall not be measured subsequently at fair value through earnings. Entities shall not measure physical inventories at fair value, except as provided by guidance in other Topics.

Except when explicitly indicated by the authoritative literature, no basis exists to carry inventories at fair value. For example, if an entity is a broker dealer subject to the specific guidance of ASC 940, *Financial Services - Brokers and Dealers*, then certain of its commodity inventories may be reported at fair value. However, we believe the entity must be specifically within the scope of ASC 940 and cannot analogize to the guidance if it is outside its scope.

### 1.3.2.5 **Other lower of cost and net realizable value matters**

If there are circumstances in which sales incentives offered voluntarily by a vendor and without charge to customers may result in a loss on the sale of a product, entities should apply the guidance for consideration payable to a customer in ASC 606-10-32-25 through ASC 606-10-32-27 (as discussed in RR 4.6). Although a liability for a sales incentive offered by a vendor should be recognized according to the applicable guidance, companies should consider whether offers of sales incentives will result in a loss on the sale, which as noted in ASC 330-10-35-13, may indicate an impairment of existing inventory.

ASC 830-10-55-8 through ASC 830-10-55-9 and ASC 830-10-55-15 through ASC 830-10-55-19 describe the application of the lower of cost and NRV measurement principle for inventories held by an entity whose books and records are remeasured from local currency to the functional currency. See FX 5.4.1.2 for further discussion.

Refer to DH 3.2.4 for discussion of contracts that initially qualified for the “normal purchase normal sale” exception under ASC 815, for which physical delivery of the underlying asset is no longer probable and the contract is required to be accounted for as a derivative.

## 1.4 *Full absorption costing*

As noted in IV 1.3.1, inventory is initially measured at cost, which includes the cost of materials, and, for work-in-process and finished goods, the costs incurred directly or indirectly in production, which includes labor and overhead. Full absorption costing refers to the process of allocating (absorbing) overhead into the cost of inventory.

ASC 330-10-30-1 through ASC 330-10-30-8 indicates that variable production overhead costs should be allocated to each unit of production on the basis of the actual use of the production facilities. The allocation of fixed production overhead costs, however, is required to be based on the “normal capacity” of the production facilities, which is defined as the production expected to be achieved over a number of periods under normal circumstances, taking into consideration loss of capacity resulting from planned maintenance. The range of normal capacity will vary based on business and industry factors.

The amount of fixed overhead costs allocated to each unit of production should not be increased as a consequence of abnormally low production or an idle plant. Abnormal amounts of freight, handling costs, and wasted material (spoilage) should be recognized as current period charges and not included in the cost of inventory. Judgment is required to determine what represents an abnormally low production level and an abnormal amount of production costs.

### 1.4.1 *Full absorption costing — tax considerations*

In the US, the IRS has specific rules for the costs that must be capitalized (absorbed) into inventory and entities may desire, when appropriate, to conform inventory accounting for financial reporting and tax purposes.

ASC 330-10-55-3 and ASC 330-10-55-4 state that the fact that a cost is capitalized for tax purposes does not, in itself, indicate that it is preferable, or even appropriate, to capitalize that cost for financial reporting purposes. Certain of the additional costs that are required to be capitalized for tax purposes may also be capitalizable for financial reporting purposes, depending on factors such as the nature of an enterprise's operations and industry practice. See Figure IV 1-1 in IV 1.4.4 for examples of inventoriable costs for financial reporting. We believe that usual material, labor, and overhead elements related to production should be included in inventory costs for both financial reporting and tax purposes.

### 1.4.2 *Full absorption costing — cost flow assumptions*

The primary objective in selecting an inventory costing method is to most clearly reflect periodic income. In other words, to match the specific costs of an item sold to its related revenues, which may be difficult in practice depending on an entity's circumstances. As a result, the general acceptance of several assumptions with respect to the flow of inventory costs has developed as a practical basis for the measurement of periodic income. The most commonly used inventory costing methods include first-in first-out (FIFO), average cost, and last-in first-out (LIFO). The method selected should be consistent with the primary objective and applied consistently period to period.

Many companies use standard cost to account for their inventories. Standard cost represents the expected per unit cost of direct material, direct labor, and manufacturing overhead for a product typically based on budgets and forecasts. Use of standard cost is acceptable, provided the standards

are adjusted at reasonable intervals to reflect current conditions and variances between actual costs and standards are absorbed into inventory so that, at the balance sheet date, the standard cost approximates actual cost under one of the recognized costing methods (e.g., FIFO, average cost, LIFO).

Regardless of how frequently standard cost is updated, actual cost will always differ from the standard, resulting in inventory variances (favorable or unfavorable). At each reporting date, an entity should evaluate whether the inventory balances stated at standard costs need to be adjusted to reflect the variances (i.e., capitalize the variances to adjust inventory to actual cost). When costs are required to be included in inventory that are not captured by an entity's cost accounting system, but are added during the closing process, consideration should be given to ensure the assessment of lower of cost and NRV (see IV 1.3.2) appropriately considers the adjusted inventory costs.

### 1.4.3 **Full absorption costing – accounting changes**

Any change in the composition of the elements of cost included in inventory or a change in the cost flow assumption (e.g., from LIFO to FIFO) is a change in accounting principle under ASC 250. Any such change must be justified as preferable. See FSP 30 for additional information on justifying preferability and reporting a change in accounting principle.

Conversely, the normal process of revising overhead absorption rates or fringe benefit accrual rates is not a change in accounting. Rather, those types of revisions are changes in estimates and are applied prospectively.

In assessing whether a change in the composition of inventory costs is preferable, there is a presumption that omission from inventories of conventional overhead cost elements is not preferable (i.e., a general preference for full absorption costing). In addition, ASC 250-10-55-1 requires that for a change to be preferable, it must constitute an improvement in financial reporting and that preferability among principles cannot be determined on the basis of the income tax effect alone.

See IV 3.5 for additional guidance on accounting changes related to LIFO inventory.

### 1.4.4 **Book capitalization**

Figure IV 1-1 illustrates various costs and whether such costs are inventoriable costs for purposes of financial reporting. Note that cost capitalization may be different for tax purposes.

#### **Figure IV 1-1**

##### **Analysis of indirect production costs for full absorption**

	<b>Usually an inventoriable cost</b>	<b>Not usually an inventoriable cost</b>
Cost of indirect materials and supplies	X	
Tools and equipment used in production but not capitalized	X	
Costs of quality control and inspection	X	

	<b>Usually an inventoriable cost</b>	<b>Not usually an inventoriable cost</b>
Costs attributable to rework labor, scrap, and spoilage		X
Losses from casualty or theft		X
Distribution and warehousing costs (finished goods)	X	
Vendor rebates and other credits (1)	(2)	(2)
Depreciation for assets related to or necessary for production or manufacturing	X	
Cost depletion (except depletion on intercompany sales)	X	
Repairs and maintenance of production equipment	X	
Utilities	X	
Rent	X	
Bidding costs		X
Engineering and design expense (to the extent not research and development)	(3)	(3)
Research and development expenses		X
Factory administrative expenses	X	
Insurance related to production	X	
Marketing, advertising, and selling expenses		X
Indirect labor and supervisory wages related to production, including basic compensation, overtime pay, vacation and holiday pay, and payroll taxes	X	
General and administrative expenses attributable to business activities as a whole (i.e., not directly or indirectly related to manufacturing, retailing, or wholesaling operations) such as costs of recruiting, billing, and accounts receivable		X
Officers' salaries related to business activity as a whole		X
Officers' salaries related to production	(4)	(4)
Pension cost representing current service costs (4)	X	
Pension contributions to multi-employer plans (4)	X	
Profit-sharing contributions (4)	X	

	<b>Usually an inventoriable cost</b>	<b>Not usually an inventoriable cost</b>
Other employee benefit costs, including worker's compensation expenses, payments under wage continuation plans, amounts includable in income of an employee under nonqualified pension, profit-sharing and stock bonus plans, premiums on life and health insurance, incentive compensation and miscellaneous employee benefits (4) (5)	X	
Taxes allowable as a deduction under Section 164, excluding state, local, and foreign income taxes	X	
Income taxes attributable to income received on sale of inventory		X

## Notes:

- (1) Consideration should be given to the impact of applying authoritative guidance, including ASC 705-20, *Costs of sales and services – Accounting for consideration received from a vendor*.
- (2) Individual facts and circumstances should be considered to determine if these costs are capitalizable. For example, capitalization of such costs are not unusual in certain retail businesses.
- (3) Individual facts and circumstances should be considered to determine if these costs are capitalizable based on whether the costs are research and development expenses. Officers' salaries related to production are included or excluded depending on the nature of the business and/or how specifically officers' duties can be identified as being directly related to the production effort.
- (4) Applies to employees involved in or necessary for production or manufacturing operations. Pursuant to ASC 715-20-45-3A, only the service costs component of net periodic benefit expense is eligible for capitalization as part of the cost of inventories.
- (5) Certain elements, such as recreational facilities for employees or expenses in support of recreation and similar costs, are frequently not capitalizable.

## 1.5 Other inventory costing matters

### 1.5.1 Spare parts

Refer to FSP 8.4.2, FSP 8.6, PPE 1.5.3, and IV 1.5.2 for the accounting for spare parts inventory.

### 1.5.2 Stores inventories

It is common for manufacturing companies to maintain “stores” items, which are spare maintenance materials and parts kept on hand as backup components of major production lines. These items are considered essential to the operations of the facility. Keeping stores items on site is a significant investment that is made to prevent or limit lost production hours when key parts of the machines fail.

It is appropriate to capitalize stores items because they have a service potential (when a part on a machine breaks down) and will provide future economic benefit to the company. There is no specific authoritative literature regarding stores items.

Refer to FSP 8.6 for discussion of the financial statement presentation of stores items.

### **1.5.3 Demonstration units**

Providing sales representatives and potential customers with demonstration (“demo”) or loaned units (i.e., products/goods that might otherwise be held in inventory for sale) is a common practice among technology companies. These units typically remain with the customer for a period of time before sale to the customer or return to the company for refurbishment. Demonstration units are classified as inventory or fixed assets depending on a number of factors, including the nature of the product, the length of time the units remain in the field prior to being sold, and whether it is management's intent to sell the units. The longer the unit remains in the field before being sold, the more likely it is that the equipment is a productive asset of the company and should be classified as a fixed asset and depreciated down to its estimated recoverable value over its estimated useful life. Units that remain in the field for a relatively short period prior to sale are generally classified as inventory on consignment. Additionally, equipment that can be readily repaired or restored is more likely to be inventory than is a product that cannot. The need for a reserve for estimated costs to refurbish the inventory or to write the units down to net realizable value as a result of technological advances should be considered (see IV 1.3.2). In addition, on occasion, demonstration units may be provided to customers as a sales incentive (see IV 1.5.5).

### **1.5.4 Vendor rebates**

ASC 705-20 provides accounting guidance on how a customer (including a reseller) of a vendor's products should account for cash consideration (as well as sales incentives) received from a vendor. Under the provisions of ASC 705-20-25-1, cash consideration received by a customer from a vendor is a reduction of the price of the vendor's products or services. Such payments should, therefore, be characterized as a reduction of cost of sales when recognized in the customer's income statement, unless the consideration is either a payment for distinct goods or services transferred to the vendor, a reimbursement of costs incurred by the customer to sell the vendor's products, or a payment for sales incentives offered to customers by manufacturers. Additionally, a rebate or refund, payable if a customer completes a specified cumulative level of purchases or remains a customer for a specified time period, should be recognized as a reduction of the cost of the vendor's products based on a systematic and rational allocation as a customer earns the rebate or refund, so long as the amounts to be earned are probable and reasonably estimable.

Depending on a company's level of inventory, frequency of inventory turns, and inventory costing methods used, cash consideration from a vendor may be required to be accounted for as a reduction of the price of a vendor's product and, therefore, such consideration should be considered when determining the cost of a company's inventory. ASC 705-20-25-10 through ASC 705-20-25-12 also indicates that rebates or refunds that are probable and estimable should be considered in valuing inventory. In addition, for companies that use the LIFO method for valuing inventory, cash consideration from a vendor required to be included as a reduction of the price of the vendor's products should be considered part of the cost of current year purchases and may require special consideration when valuing LIFO increments. See IV 3 for additional guidance on valuing LIFO increments.

### **1.5.5 Vendor incentives offered to reseller's customers**

ASC 705-20-25-4 through ASC 705-20-25-9 provides accounting guidance on a reseller's characterization of sales incentives offered to consumers or other end users by manufacturers (i.e., manufacturers' coupons and other vendor-specific coupons). The guidance provides that consideration received by a reseller from the vendor in exchange for a vendor incentive tendered by a consumer (e.g.,



a manufacturer's coupon) should not be reported as a reduction of the cost of the reseller's purchases from the vendor, provided that the vendor incentive offered directly to consumers has the following characteristics:

- It can be tendered by a consumer at any reseller in partial payment of the price charged by the reseller
- The reseller receives a direct reimbursement from the vendor based on the face amount of the incentive
- It is not part of any broader vendor-reseller incentive program or cooperative promotional program
- An agency relationship with respect to the incentive exists between the vendor and reseller, whether expressed or implied

If the consideration received has these characteristics, it would be characterized as revenue (or other income, as appropriate) and accounted for in accordance with ASC 705-20-25-4 through ASC 705-20-25-12, as applicable. Refer to RR 4.2 for additional considerations on determining the transaction price.

All other consideration received by a reseller from a vendor is subject to the guidance in ASC 705-20. See IV 1.5.4 for additional details.

### **1.5.6 Vendor allowances**

Vendor allowances for construction of fixed assets by the retailer should be evaluated under ASC 705-20-25 to determine the appropriate accounting. Under ASC 705-20-25-1 through ASC 705-20-25-3, unless certain conditions for the use of the cash are defined, cash consideration received by a retailer from a vendor is presumed to be a reduction of the prices of the vendor's products and thus a reduction in inventoriable costs. If the cash consideration is used for a specific purpose as determined by the vendor (e.g., advertising), it may be appropriate for the retailer to apply the consideration as a reduction of expenses for advertising as noted in ASC 720-35.

### **1.5.7 Cost of goods sold**

There is diversity in practice as to the types of costs companies include in cost of goods sold when those costs are not directly assignable to the inventory purchased. In addition to the allocation of merchandise-related costs (e.g., freight, duty, broker fees, import rights), many companies include other costs incurred in the process of acquiring inventory and making it ready for sale. These expenses may include buying, occupancy, warehouse, and distribution and delivery expenses. Although these expenses may be classified as cost of goods sold, they do not necessarily flow through inventory. ASC 330-10-30-7, addressing the initial measurement of inventory, excludes abnormal freight, handling, and amounts of wasted materials (spoilage) from the inventory cost pool to be capitalized. Fixed overhead costs for a normal capacity level should be considered for capitalization.

The classification of expenses as cost of goods sold will depend upon their nature and upon the accounting policies followed by the company. The practice of including significant amounts of non-merchandise costs in cost of goods sold should be disclosed by the company in the notes to the financial statements.

### **1.5.8 *Merchandise purchase order terms***

Purchase order terms and procurement contracts generally include provisions related to taxes, duties, cash payment terms, insurance, rights of inspection and return, and terms relevant to the vendor's revenue recognition. Often additional brokers, buying agents, quota holders, or others may have rights and duties along the supply chain. Entities often record inventory at the earlier of (1) the time of receipt, (2) receipt of invoice, or (3) payment, but entities should consider contractual terms that may require the recognition of inventory at an earlier date, based on when control is obtained. Some vendors have negotiated with companies to have specific transfer of title terms (e.g., FOB shipping point) or other indicators of control to clarify the vendor's revenue recognition. Shipping terms generally specify when title transfers and are a trigger for the entity's legal obligation to pay for the goods. Therefore, terms such as FOB shipping point may indicate control has been obtained and require the entity to recognize the in-transit inventory.

Entities may utilize letters of credit for overseas purchases. The shipping and payment terms of these letters may vary, which could result in different accounting conclusions as it relates to the timing of recording inventory purchases.

See IV 1.2 for further discussion of transfer of control.

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# ***Chapter 2:*** ***Retail inventory method***

## 2.1 Retail inventory method overview

The retail inventory method (RIM) is commonly used by retail companies for inventory accounting and management reporting purposes. RIM has long been considered an acceptable inventory method under generally accepted accounting principles. However, authoritative literature does not provide specific guidance on the application of RIM. As such, entities need to consider whether their application of RIM is consistent with general inventory principles and reasonable in relation to their particular facts and circumstances. The primary source of existing FASB authoritative guidance on inventory is ASC 330, *Inventory*.

RIM is an averaging technique used by retailers to reduce the amount of recordkeeping associated with accounting for inventories. In general terms, RIM allows retailers to compute an average cost-to-retail percentage (commonly referred to as a cost complement percentage) used to value ending inventories. The use of RIM eliminates the need to maintain detailed inventory records on a cost basis and allows retail companies to price physical inventory counts at estimated cost based on the retail value of merchandise.

Some key concepts under RIM are:

- **Initial markon** – The original retail value recorded for an item (or a group of items) over its cost. For example, a purchase with a recorded cost of \$220 originally marked at a retail amount of \$400 has an initial markon of \$180.
- **Markup** – An additional markon to increase the original retail price. For example, assume a purchase that cost \$220 is originally marked to sell for \$400. If the retail price is increased to \$420, the markup is \$20 and the markon increases from \$180 to \$200.
- **Markup cancellation** – A reduction in the amount of a prior markup. Markup cancellations are generally used to correct unintentional errors in the original markup, or when the original markup is of a special nature and understood to be temporary at the time it was made. A markup cancellation should not bring the retail price down to an amount lower than the initial markon. In addition, markup cancellations should only be taken to correct markups on purchases during the current season. They should not be taken to correct markups on opening inventory amounts, which should be accounted for as markdowns. Markup cancellations may also be used in the rare case of a major change in merchandising philosophy, for example, a change to “everyday low pricing.”
- **Markdowns** – a decrease in the original sales price. Markdowns are generally made to motivate the purchase of slow-moving inventory, for special sales events, or to meet competitors’ prices. Markdowns are usually characterized as permanent or temporary in nature, based on whether the company expects to adjust the sales price after a markdown to equal or exceed the original sales price (i.e., a permanent markdown would be inventory that is not expected to be sold for the original sales price in the future). The classification of markdowns is significant to the RIM calculation in that generally permanent markdowns affect inventory and cost of goods sold immediately in the period taken whereas temporary markdowns are generally recognized when the inventory is sold.
- **Markdown cancellation** – An upward revision of previous markdowns. A markdown cancellation should not exceed the markdown previously taken.

### 2.1.1 Traditional retail inventory method

Traditional RIM (also referred to as FIFO RIM) determines inventory cost based on the lower of FIFO cost or market valuation of inventory. The RIM methodology utilizes a cost complement percentage that represents the relationship of the cost of goods to their retail value. The objective is to establish the relationship between cost and retail price prior to subsequent retail price adjustments (e.g., markdowns). The cost complement percentage is developed over a representative accumulation period (e.g., annually or seasonally). Inventories are usually grouped by department, class, or style (and sometimes by store as well). Groupings normally contain related merchandise with similar markon percentages. Large department stores, for example, may have several hundred different groupings. Some retailers calculate a separate cost complement for each stock keeping unit (SKU) in inventory.

Figure IV 2-1 illustrates how the cost complement percentage is calculated.

**Figure IV 2-1**  
Calculation of cost complement percentage

	Cost	Retail	Cost complement %
Beginning inventory	5,000	9,000	
Net purchases, at initial markon (1)	46,000	87,000	
Net markups (2)	–	4,000	
	<b>51,000</b>	<b>100,000</b>	<b>51%</b>

(1) Net purchases are calculated as purchases less vendor returns and appropriate vendor allowances.

(2) Net markups do not impact the cost and include markups less markup cancellations.

The cost complement percentage is applied to ending inventory at retail value, based on a physical inventory taken in retail dollars, net of markdowns, or based on perpetual inventory records maintained in retail dollars, to determine the cost of ending inventory and cost of goods sold as illustrated in Example IV 2-1.

Retail dollar book inventory using perpetual inventory records can be determined by reducing total goods available for sale at retail value by net sales (sales less sales returns), net markdowns (markdowns less markdown cancellations) and other retail price reductions (e.g., shrinkage provision).

**EXAMPLE IV 2-1****Traditional retail inventory method**

Retail Company has opening inventory with a cost of \$5,000 (determined using the retail inventory method) and a retail value of \$9,000.

Purchases during the period had a net cost of \$49,000 and a retail value of \$92,000. Purchases totaling \$3,000, with a retail value of \$5,000 were subsequently returned to vendors.

Additional markups of \$6,000 were made during the period. Markup cancellations of \$2,000 were taken due to an error in the computation of the original retail value.

Retail sales during the period were \$85,000, of which \$5,000 was returned by customers.

Markdowns of \$8,000 were taken during the period; \$1,400 of these markdowns were subsequently canceled.

Past physical inventories have indicated that shrinkage is has been generally consistent at 3% of net retail sales.

How would the Company calculate the amounts to be reflected in costs of goods sold and inventory as of period end using the retail method?

*Analysis*

Based on the facts provided, the cost complement percentage would be calculated as follows:

	<b>Cost</b>	<b>Retail</b>
Opening inventory	\$5,000	\$9,000
Purchases	49,000	92,000
Purchase returns	(3,000)	(5,000)
Additional markups		6,000
Markup cancellations		(2,000)
Goods available for sale	\$51,000	\$100,000
Cost complement percentage is 51% (\$51,000/\$100,000)		

The cost of goods sold would be calculated as follows:

	Cost	Retail
Goods available for sale	\$51,000	\$100,000
Sales		(85,000)
Sales returns		5,000
Markdowns		(8,000)
Markdown cancellations		1,400
Shrinkage provision		(2,400)
Retail reductions		(89,000)
Ending inventory	5,610*	\$11,000
Cost of goods sold	\$45,390	

\*Ending inventory at cost is calculated as ending inventory at retail (\$11,000) multiplied by the cost complement percentage (51%).

## **2.2 Challenges in the application of the retail inventory method**

### **2.2.1 Accounting for markups and markdowns**

Markups and markup cancellations generally should be accounted for “above the line” (i.e., as an adjustment to retail value in the calculation of the cost complement percentage). If a markup is reflected below the line (i.e., excluded from the cost complement calculation), the retail value used in the cost complement percentage calculation would be understated, resulting in a higher cost complement percentage and an overstated ending inventory balance.

On the other hand, markdowns and markdown cancellations should not be included in the computation of the FIFO RIM cost complement percentage. If included, the retail value used to compute the cost complement will be understated, resulting in a higher cost complement percentage and an overstated ending inventory balance.

The improper accounting for markups and markdowns can have a significant effect on the profit of a retailer. Some of the more common problems in this area include:

- The determination of whether a reduction in retail price is a markup cancellation or a markdown affects the computation of the cost complement percentage. Entities should have clearly defined policies and procedures for how to determine the appropriate classification.
- Improper cutoff in the recording of markdowns may lead to markdowns being deferred to the next accounting period, and ending inventory at retail and cost being overstated.

- Failure to account for point-of-sale markdowns recorded in the retailer's point-of-sale system that are not captured in the retail inventory ledger may lead to ending inventory at retail and cost being overstated.
- Failure to record markdowns taken on the floor may lead to ending inventory at retail and cost being overstated. At the physical inventory count, the error will appear as a shortage.

### **2.2.2 *Averaging of high markon and low markon goods***

Since RIM is an averaging method, variations in the data can result in distortions of inventory amounts. Having high markon goods or low markon goods can overstate or understate inventory cost, respectively, if there is a disparity between the proportions of high and low markon goods used in the determination of the cost complement percentage as compared to the proportion of such goods in ending inventory.

Low markon goods tend to turn over at a faster rate than high markon goods, resulting in a higher proportion of low markon goods in the cost complement percentage calculation than represented in ending inventory. The resulting higher cost complement percentage will be too high, resulting in an overstatement of ending inventory and an understatement of cost of goods sold.

In determining inventory groupings, similar markon percentages and turnover characteristics should be considered to mitigate the averaging effect inherent in the retail inventory method and ultimately report accurate ending inventory balances and costs of goods sold. Inaccuracies can be reduced by applying RIM at the departmental level; however, it may be necessary to further subdivide departments into classes of goods for purposes of computing retail inventory. In particular, tax rules in the US state that a retailer maintaining more than one department or dealing in classes of goods carrying different percentages of gross profit should not use a percentage of profit based upon an average of the entire business, but should compute and use the proper percentages for the respective departments or classes of goods when determining inventory.

Depending on the facts and circumstances, a change in the inventory groupings may be considered a change in accounting principle for book purposes, subject to the requirements of ASC 250, *Accounting Changes and Error Corrections*, and an accounting method change for tax purposes, subject to Section 446 of the Internal Revenue Code.

### **2.2.3 *Seasonality and the significance of accumulation periods***

Similar to the averaging of high markon and low markon goods, seasonality of margins can also result in inventory distortions. Markon percentages may fluctuate significantly from month to month and progressively throughout a season. These fluctuations could result in an overall cost complement percentage that is not representative of the ending inventory on hand.

In determining the cost complement accumulation period, consideration should be given to the rate of turnover and the consistency of markons over time. If inventory turns quickly (within 3 months or less), shorter accumulation periods may be appropriate. In these instances, the more recent months' markons will be more representative of the markons in the ending inventory. On the other hand, if inventory turns at a slower rate, a longer accumulation period may be reasonable. Judgment is involved in determining an appropriate accumulation period and different accumulation periods can be selected for inventory in different departments based on the rate of turnover and seasonal



variability of merchandise within each department. For tax purposes, the IRS requires the use of annual accumulation periods.

Similar to a change in inventory groupings, a change in the accumulation period may be considered a change in accounting principle (for book purposes) or a change in accounting method (for tax purposes), subject to the requirements of ASC 250 and Section 446 of the Internal Revenue Code, respectively.

#### **2.2.4 Retail inventory method – vendor allowances**

The following summarizes the effect of vendor allowances on RIM.

- **Vendor allowances for overcharges** – credited directly to the purchases account, reducing the cost of inventory and, as a result, the cost complement percentage.
- **Advertising allowances** – those meeting the criteria to be credited to advertising expense would not impact the inventory accounts or the cost complement percentage in accordance with ASC 705-20. Advertising allowances that are not reimbursements of specific, incremental, identifiable costs incurred by the retailer represent a reduction of the purchase price of the goods acquired from the vendor and, accordingly, should be credited to the purchases account.
- **Price protection allowances (also known as markdown allowances)** – credited directly to the purchases account at cost, reducing the cost of inventory. If a corresponding reduction in the marked retail price is made, a reduction should also be made to the retail amount of the purchase in the retail inventory ledger (i.e., perpetual inventory records). However, if the actual retail price reduction by the retailer exceeds the retail amount of the vendor’s allowance, a markdown should be recorded for the excess, which would have no effect on the inventory cost used in the cost complement percentage.

A markdown allowance should reduce markdowns in the period described in the vendor allowance agreement. Such allowances are often negotiated with vendors after a designated selling season (e.g., the fall season) and an issue can arise with respect to the timing of recognition of these allowances. To the extent that the merchandise inventory to which the allowances relate has been sold through, and the allowances are obtained through the reduction of purchase price on the next season's purchases, we generally expect the allowances to be recognized in the following season as a reduction to the cost complement (resulting in an increase to gross profit) because the retailer would likely not have obtained such allowances without the actual or expected future purchases from the vendor.

Finally, “scan-down” or “scan-back” arrangements also warrant consideration under ASC 705, *Costs of Sales and Services*. Under these arrangements, retailers earn allowances (consideration) from the vendor when a product is scanned (sold) at the store. ASC 705-20 provides guidance on accounting for consideration received from vendors.

- **Non-compliance charges** – a charge back to vendors for non-compliance with retailer’s procurement rules (e.g., early/late shipments) generally credited to distribution costs.

### **2.2.5 Retail inventory method — cash discounts**

Cash discounts may be offered by vendors on an ad hoc basis or as part of a volume discount program. Cash discounts should be credited directly to the purchases account at cost, reducing the cost of inventory and the cost complement percentage. If quantity discounts are received based on purchases for an entire season or year, an estimate should be made of the discount to be received and the purchases account at cost should be credited for the estimated allowance.

## **2.3 Inventory reserves**

When applying the inventory retail method, inventory balances are adjusted for shrinking, aging, obsolescence, seasonality, and permanent markdown accruals.

### **2.3.1 Shrinkage**

Shrinkage can often be material to a retailer's bottom-line earnings. The portability of many retail goods makes such merchandise an easy target for shoplifters in the absence of adequate security measures. While the causes of shrinkage vary by type of retailer, company, geographic region, and even individual store, the most common causes include shoplifting, employee theft, and paperwork error. Food retailers also experience significant shrinkage from product spoilage. As shrinkage at most retailers can only be identified upon the performance of a physical inventory, common retail practice involves the recording of accruals to reflect an estimated inventory shortage. These accrual rates should be periodically adjusted based on actual physical inventory results to reflect current experience. Most retailers estimate shrinkage between physical inventories as a percentage of sales, often basing the percentage on historical shrinkage rates adjusted for the effects of any trends or other known factors that could affect inventory shrinkage.

### **2.3.2 Aging, obsolescence, and seasonality**

Most retail inventories are affected by aging, obsolescence, and seasonality. The nature and extent of these factors is determined by the types of inventory maintained. The timely clearance of inventory subject to such factors is important in order to minimize the carrying costs of the inventory and reduce realizability concerns. In many instances, it is more cost effective for a retailer to markdown a seasonal item in inventory instead of storing it during the offseason (and incurring carrying charges) only to have to mark it down at the beginning of the next season because it is old merchandise. Declines in inventory value due to age, obsolescence or seasonality are considered in the lower of cost or market analysis pursuant to ASC 330-10-35-1C through ASC 330-10-35-7.

### **2.3.3 Permanent markdown accruals**

For entities that use RIM, there is no specific GAAP that requires accrual of future permanent markdowns. However, we believe it is consistent with the lower of cost or market principle in ASC 330-10-35 to account for future permanent markdowns on either an “as incurred” or accrual basis. For companies that follow an as incurred policy, permanent markdowns may be recorded on the date reflected in a company's point of sale system (i.e., the date available to customers) or on an “as approved” basis (i.e., when management decides to sell the product for less). For companies that accrue for permanent markdowns, such accruals should reflect an estimate of permanent markdowns to be taken through the ultimate disposition of the inventory on hand. That said, permanent

markdowns that occur subsequent to a period end resulting from factors specifically related to the subsequent period would not require accrual as of the prior period end.

Some inventory markdowns may be directly attributable to a decision to exit or restructure an activity. However, it may be difficult to distinguish such markdowns from inventory markdowns attributable to external market factors. Inventory markdowns generally are considered to be normal, recurring activities integral to the management of the ongoing business, and should be classified as a component of cost of goods sold rather than as a restructuring cost consistent with ASC 420-10-S99-3.

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# ***Chapter 3:*** ***LIFO inventories***

## 3.1 LIFO inventories overview

LIFO has long been considered an acceptable inventory method under generally accepted accounting principles. However, authoritative accounting literature does not provide specific definitive guidance on how to apply LIFO or specify the financial statement disclosures that should be made by companies using LIFO. Although the SEC and other professional bodies have issued a number of releases and publications dealing with LIFO, many LIFO accounting and disclosure practices are derived principally from Internal Revenue Service (IRS) regulations.

The use of the LIFO cost flow assumption for tax purposes is conditioned on a company's use of LIFO for the purpose of reports or primary financial statements issued to shareholders, partners, other proprietors, beneficiaries, or for credit purposes. If a company violates this financial conformity requirement, the IRS may terminate the entity's LIFO election.

The IRS LIFO conformity requirement requires that only the primary financial statements be issued on a LIFO basis. Supplemental disclosure of non-LIFO information is allowed, as long as it accompanies the primary financial statement, and is clearly labeled as being supplemental (see IV 3.4.2). In addition, a different LIFO method may be used for book and tax purposes.

In Financial Reporting Policies (FRP) Section 205, the SEC staff has provided guidance for the disclosure of non-LIFO information by LIFO inventory companies that differs in some respects from the IRS requirements (see IV 3.4.2 for information on the SEC guidance).

Another source of guidance on LIFO is the issues paper issued by the AICPA Financial Reporting Executive Committee (FinREC), *Identification and Discussion of Certain Financial Accounting and Reporting Issues Concerning LIFO Inventories* (the "FinREC LIFO guidance"), which, while technically non-authoritative, in view of the general lack of authoritative accounting guidance on the topic, was endorsed by the SEC staff in SAB Topic 5.L.

### **SAB Topic 5.L**

In the absence of existing authoritative literature on LIFO accounting, the staff believes that registrants and their independent accountants should look to the [FinREC LIFO guidance] for guidance in determining what constitutes acceptable LIFO accounting practice.... In the event that the registrant and its independent accountants conclude that the registrant's LIFO practices are preferable in the circumstances [to the advisory conclusions set forth in the FinREC LIFO guidance], they should be prepared to justify their position in the event that a question is raised by the staff.

Companies should refer to the FinREC LIFO guidance and be prepared to justify any departures. Significant conclusions from the LIFO guidance relevant to financial reporting are summarized in the following sections.

## 3.2 LIFO methods

LIFO cost may be computed using either the specific-goods method or the dollar-value method. The dollar-value approach is more common and encompasses several acceptable computational techniques.

### **3.2.1 Specific-goods LIFO**

Under the specific-goods method, calculations are based on physical units and require separate computations for similar products or items in inventory. Therefore, this method is generally used only in situations involving a limited number of inventory items or basic commodities that can be measured in terms of a common denominator, such as pounds, gallons, or feet. The quantity of each type of item in ending inventory is compared to the quantity of similar items in beginning inventory. Increments (i.e., the layer or increase in inventory quantities generated during the current period) are priced at current-year cost and decrements (i.e., a decrease in quantities often referred to as liquidations or erosions) are included in cost of sales at the unit cost of each respective layer, beginning with the most recent.

Since a separate calculation is made for each type of item, the specific-goods approach may result in numerous liquidations if the quantities of individual inventory items fluctuate from year to year (even though the total number of inventory items remains constant). An increase in the quantity of one item does not offset a decrease in another unless the two items are similar enough to be considered a single specific good (e.g., gasoline of different octane ratings). The specific-goods method, therefore, requires that records be maintained of the quantities and costs of each inventory item for each year in which an increment occurred.

### **3.2.2 Dollar-value LIFO**

Under dollar-value LIFO, inventory quantities are measured in terms of “base-year” dollar value rather than on physical units. Inventory is divided into “pools” of similar items and quantities for each pool are determined based on the cost of items as of a specific date (the base year). The base year is typically the beginning of the year in which LIFO is elected. Increments and decrements are determined by comparing the ending inventory at its base-year cost with the opening inventory at base-year cost. Increments are valued at current-year cost. Decrements are removed from inventory at historical LIFO cost for each respective layer on a LIFO basis. Since a dollar-value pool contains a broad mix of inventory items, new items may be introduced and old items may disappear without causing any decrements in the pool.

The key element in any application of dollar-value LIFO is the calculation of an inflation index, which is needed to relate current costs in inventory to base year costs. The following methods can be used to calculate the inflation index.

#### **3.2.2.1 Dollar-value LIFO — double extension**

Under the double-extension method, total base-year cost of ending inventory (for computing increments and decrements) is determined by extending each item at its base-year cost. Each item is also extended at current-year cost to develop an index of current-year cost to base-year cost. That cumulative index is applied to any increment (increase in the quantity of base-year dollars in year-end inventory) in order to value the increment (layer) at current-year cost.

#### **3.2.2.2 Dollar-value LIFO — index method**

The index method permits the double extension of a sample of products to represent the inventory population. Under the index method, the inventory at current-year cost is converted to base-year cost using an index developed from a sample of inventory. The index may be computed by double-extending a representative portion of the inventory in a pool or by using sound and consistent

statistical methods. Once the base-year cost has been determined, increments are measured in the same manner as under the double-extension method. For tax LIFO calculations, the IRS has historically concluded that the calculation of the index should include all inventory segments. For example, the IRS may object to a sampling method that excludes new inventory items from the index calculation.

### **3.2.2.3 *Dollar-value LIFO – link-chain method***

Under the link-chain method, an index is computed that measures the price-level change for the current year based on the ratio of the year-end inventory at current-year costs to the year-end inventory at prior-year costs. The current-year index may be computed by extending 100% of the items or a sample of items in inventory. By multiplying the current-year index by the prior cumulative index, a new cumulative index is developed that, when applied to the closing inventory at current-year prices, results in the calculation of the closing inventory at base-year cost. The closing inventory at base-year cost is then compared to opening inventory at base-year cost to determine whether an increment or decrement has occurred. For tax purposes, the IRS regulations limit the availability of the link-chain method to companies that can demonstrate that, because of frequent changes in inventory items, the double-extension or index method is not practical. As with the index method, the IRS has historically concluded that all inventory segments should be included in the calculation of the index (e.g., new items cannot be excluded).

### **3.2.2.4 *Dollar-value LIFO – published indices***

Instead of computing their own indices, retail department stores may use the Department Store Inventory Price Indices prepared monthly by the Bureau of Labor Statistics. Under this method, a single index is used for each department. In addition, specialty stores are allowed to use the Department Store Inventory Price Indices if they have a fairly broad variety of items comparable to a department in a department store.

### **3.2.2.5 *Simplified LIFO***

IRS Regulations permit the use of a simplified LIFO inventory method for tax purposes. Entities can elect to use a separate pool for each major category of inventory items and use a single published index for each pool.

Under this simplified approach, businesses can elect to establish LIFO pools using special rules provided under the Inventory Price Index Computation (IPIC) method. Under the IPIC method, the computations of inflation are based on externally published index reports (e.g., the Consumer Price Index Detailed Report or the Producer Price Index Detailed Report).

Given that IPIC is determined using externally-published indices that are general in nature, this method generally does not reflect a specific entity's inventory costing unique to its individual circumstances, meaning it does not consider, for example, the specific entity's vendor rebate and allowance programs, sourcing decisions, or price fluctuations based on inventory quantity discounts. In order for the application of IPIC to be considered acceptable for financial reporting purposes, the results of applying IPIC would need to be reviewed annually to ensure that they are consistent with the entity's actual cost experience. Therefore, much if not all of the potential administrative relief of using a simplified method for tax purposes would be unlikely to be realized. Except in circumstances when it can be demonstrated that the use of IPIC approximates the financial reporting results had an

acceptable LIFO method for valuing inventory been used, we do not believe the use of IPIC or another simplified index method is appropriate.

### **3.3 LIFO inventories in business combinations**

ASC 805-20-30-1 requires identifiable assets, including inventories, to be measured at their acquisition date fair values. As such, at the time of purchase, for financial reporting purposes, a new base year is established and all previous LIFO layer history is eliminated. However, in a nontaxable transaction, the tax basis of the acquired LIFO inventories may differ from fair value, in which case the historical LIFO layers for tax purposes may remain intact.

If LIFO inventory acquired in a business combination is combined with an acquirer's existing pool, the acquired inventory should be treated as an inventory purchase of the current year. If there is an increment as a result of this acquisition, or otherwise, the acquired inventory will be included in the measurement of the increment. Otherwise, the cost of the acquired inventory would be included in the measurement of the decrement charged to cost of sales in the period of the acquisition.

A LIFO increment that occurs in the year of a business combination will impact the calculation of the current year index. The current year index should not consider the step-up to fair value of the acquired company's inventory to avoid distortion. However, if acquired LIFO inventory is considered a new pool (e.g., because it is in a different business), the cost (i.e., the fair value purchase price) of the inventory should be treated as the base inventory value.

### **3.4 Book/tax LIFO conformity requirements**

The IRS requires LIFO to be used for both tax and financial statement purposes in the primary income statement. However, the LIFO costing method used for financial reporting purposes may be different from the method used for tax purposes (e.g., double-extension for book and link-chain for tax) and costs required to be included under the uniform capitalization rules for tax purposes may be different from costs that are inventoriable for financial reporting purposes (see IV 3.4.1 for additional discussion). In addition, under IRS regulations, the use of non-LIFO valuations in the following do not violate the conformity requirement:

- Disclosures of supplemental information in financial statement notes or management's discussion and analysis of operations
- Reports or credit statements generally covering less than the taxable year
- Internal management reports
- Using lower of LIFO cost or market in financial reports (see IV 3.8)
- In situations when accounting for business combinations under GAAP differs from the required LIFO tax accounting, resulting in temporary differences under ASC 740

#### **3.4.1 Book/tax LIFO accounting differences**

Although the IRS conformity regulations require companies to use LIFO for both tax and financial statement purposes, the specific application of LIFO may differ without violating the conformity



requirement. Differences between the book and tax application of LIFO generally result in temporary differences that should be accounted for in accordance with ASC 740.

While different book/tax LIFO methods may be used without violating the LIFO conformity requirement, the difference may cause the IRS to challenge the propriety of the tax method. For example, the use of different prices for new items for book and tax purposes may cause the IRS to challenge the tax pricing method.

The following are some book/tax LIFO accounting differences that the IRS has specifically identified as allowable under the conformity regulations:

- **Inventoriable costs** — For tax purposes, the uniform capitalization rules (Internal Revenue Code section 263A) may require costs to be inventoried for tax purposes that are required to be treated as period costs under GAAP (see Figure IV 1-1 at IV 1.4.4).
- **Pools** — Companies may adopt a pool structure for financial reporting purposes that is different from the one they use for tax purposes. However, the financial reporting treatment is one of the criteria used by the IRS to evaluate a company's pooling structure for tax purposes.
- **LIFO methods** — Dollar-value computational methods may be different for book and tax reporting (see IV 3.2.2 for a description of the alternative methods).
- **Indices** — Different methods may be used to determine indices for the double-extension and link-chain methods.
- **Accounting periods** — Companies may use different fiscal year-ends for financial reporting purposes and federal income tax purposes. The FinREC LIFO guidance concludes that, when a company uses LIFO for income tax purposes and it has a financial reporting year-end that differs from its tax year-end, it should make a separate LIFO calculation for financial reporting purposes using its financial reporting year as a discrete period for that purpose.
- **Valuing increments** — Companies may use different increment pricing methods for book and tax purposes (i.e., the earliest, average, or latest purchase price method).
- **Business combinations** — For book purposes, the provisions of ASC 805 must be followed to determine the cost of inventory acquired in a business combination. Tax accounting may differ.

### **3.4.2 Supplemental disclosure of non-LIFO information**

Companies using the LIFO inventory method may, in general, use a non-LIFO method to disclose information that supplements or explains the contents of the primary financial statements without violating the LIFO conformity requirements.

Notwithstanding any other considerations relevant to the disclosure of non-GAAP financial information by SEC registrants, the IRS has stipulated the following disclosure requirements for non-LIFO information disclosed in primary financial statements and other reports:

- **Notes** — Non-LIFO inventory information may be disclosed in the notes to the financial statements if (1) all the inventory-related notes are presented together and (2) they accompany the income statement in a single report. Although non-LIFO information may not be reported on the

face of a primary income statement as “supplemental information,” non-LIFO information may be presented in footnotes on the same page as the income statement as long as all footnotes relating to the income statement are presented together.

- **Balance sheet** — IRS LIFO conformity requirements allow balance sheet disclosure of the asset value of inventory determined using a non-LIFO method. However, if the non-LIFO amounts are included in a GAAP balance sheet, they should be disclosed parenthetically or in a similar supplemental manner. Disclosure of inventory computed using a non-LIFO method is permitted only if (1) the disclosure is contained in a footnote to the balance sheet or presented parenthetically on its face or (2) the balance sheet is appropriately identified as supplemental or explanatory (e.g., a pro forma balance sheet reflecting inventory on a non-LIFO basis).
- **Appendices and supplements to the income statement** — Non-LIFO information may be reported in an appendix or supplement to a company’s income statement if the appendix or supplement (1) accompanies the income statement in a single report and (2) the information reported in the appendix or supplement is clearly identified as a supplement to or explanation of the primary statement.
- **Other reports** — Supplementary or explanatory non-LIFO income statement information (e.g., cost of goods sold, net income, earnings per share) may be disclosed in other reports without violating the LIFO conformity requirements. “Other reports” are items such as news releases, letters to shareholders or other owners, oral statements at press conferences, shareholders’ meetings, or securities analysts’ meetings, and sections of an annual report (such as the president’s letter, management’s discussion and analysis, and the statement of cash flows). The non-LIFO information in these reports must (1) be clearly identified as supplementary or explanatory and (2) repeat the LIFO-based amount of the specific item of information (e.g., cost of goods sold, net income, earnings per share) being supplemented. It is not necessary to repeat the LIFO-based amount if the only supplementary or explanatory disclosure is the effect of using a non-LIFO method instead of a LIFO method. For example, reiteration of LIFO income is required if FIFO income is disclosed, but not if the only disclosure is the difference in income when using FIFO versus LIFO.
- **Internal management reports** — Companies using LIFO may prepare internal management reports based on non-LIFO information. Generally, reports not distributed outside the company would be considered internal management reports. If shareholders receive internal management reports in their capacity as directors, the reports should be clearly identified as internal management reports and not as shareholder reports. If a subsidiary is a member of a group and issues financial reports to its parent, these reports are not internal management reports and are therefore subject to the LIFO conformity requirements. On the other hand, the subsidiary may issue internal management reports to its managers who are also shareholders of the parent. These reports should be clearly identified as internal management reports and their use should be restricted to management purposes.

The SEC staff’s position in SEC FRP 205 differs in some respects from the IRS LIFO conformity disclosure requirements described above. When such additional supplemental disclosures are presented, the registrant should consider FRP 205, which indicates the SEC’s concerns regarding disclosure of non-LIFO information is mitigated if registrants (1) state clearly that the use of LIFO results in a better matching of costs and revenues, (2) explain why the non-LIFO disclosures are provided, and (3) present information about how the supplemental non-LIFO income amounts were calculated.

The LIFO conformity rules are complex. Since a violation of these rules could result in an involuntary termination of the LIFO method (i.e., the LIFO reserve would be included in income in the year of the conformity violation), which would trigger current income tax consequences, care should be exercised when preparing the disclosure of any non-LIFO information.

### **3.5 Accounting changes to/from LIFO**

A change to LIFO from another costing method or a change to another costing method from LIFO is a change in accounting principle. Under ASC 250-10-45-2, a change in accounting principle can only be made if the use of an allowable alternative is preferable. SAB Topic 6.G.2.b provides interpretive guidance on how a company may justify the preferability of one accounting principle over another. See IV 3.5.2 for considerations specific to changes from LIFO to another method.

#### **3.5.1 Accounting changes to LIFO**

A change in accounting principle generally must be reported through retrospective application of the new principle to all periods presented. Given the need to establish a base-year cost (or quantity, if using the specific-goods approach), the retrospective application of LIFO may be impracticable, as indicated in ASC 250-10-45-7 and Example 1 in ASC 250-10-55-3.

As noted in the FinREC LIFO guidance, if a company changes to LIFO, there is a presumption that it would do so for all inventories. This presumption can be overcome only if the company has a valid business reason for not fully adopting LIFO and can justify the preferability of continuing to use the non-LIFO method for the remaining inventories. The FinREC LIFO guidance discusses various business reasons for not fully adopting LIFO. For example, a company may want to adopt LIFO only for inventory categories that are substantially affected by inflation, or exclude certain inventories from LIFO if quantities fluctuate greatly, significant reductions are anticipated, or prices are volatile.

If a company adopts LIFO for certain domestic inventories, LIFO should be applied to similar inventory categories at international locations unless there are valid reasons not to do so. Such reasons may include no or low inflation in the foreign country or inventory that is subject to different economic considerations. Another valid reason for not applying LIFO for all inventories is that certain foreign jurisdictions do not recognize LIFO for tax purposes.

Companies that have not fully adopted LIFO should disclose the dollar amount of ending inventories carried at LIFO cost and the related LIFO reserve. Companies that change their methodology should disclose the justification for the change.

#### **3.5.2 Accounting changes from LIFO**

A change from LIFO to another method should be accounted for by retrospectively adjusting the financial statements for all prior periods presented in accordance with ASC 250. Because perpetual inventory records are generally kept on a FIFO or average cost basis, unlike a change to LIFO, the impracticability exception is unlikely to be available for a change from LIFO.

In order to comply with the disclosure requirements in ASC 250-10-50-1(b)2, an entity would need to perform a LIFO calculation in the year of the change, even if the change was adopted in the first fiscal quarter. For example, a public company with a calendar year-end that changes from LIFO to FIFO in the first quarter of 20X1 would be required to show the effects of the change for the full year ended December 31, 20X1 in its 20X1 annual financial statements.

Circumstances in which a change from the LIFO method has been justified include the following:

- FIFO is used by peer group companies.
- The company's financial distress has lead creditors to place greater emphasis on the balance sheet.
- LIFO is not being used internationally.
- The company has experienced increased productivity gains (e.g., because of technological advances) resulting in a decline in the unit cost of inventory.
- There has been a permanent decline in inventory costs because of supply and demand in the marketplace.
- The change will provide for a better matching of expenses with revenues (currently and for the foreseeable future).

The following reasons are generally not persuasive in justifying a change from LIFO:

- The change will provide the company additional equity and, therefore, facilitate compliance with existing debt covenants.
- The internal cost of performing the LIFO calculation is too great.
- The company does not expect future inflation as high as it was when the company initially adopted LIFO.
- The company does not use LIFO for internal management purposes.

See FSP 30 for additional details on the disclosure requirements related to accounting changes.

As a result of the IRS conformity regulations, changing from LIFO to FIFO for book purposes will likely trigger the need to change from LIFO to another method for tax purposes.

### **3.5.3 Changes in method of applying LIFO**

As discussed in Chapter 9 of the FinREC LIFO guidance, a change in the method of applying LIFO (e.g., a change to dollar value from specific goods, a change from double extension to link chain, a change from a single pool to multiple pools) is a change in accounting principle, unless, as noted in ASC 250-10-45-1b, the change is necessitated by transactions or events that are clearly different in substance from those previously occurring. Otherwise, any such change is acceptable only if the company can provide justification for the preferability of the new method.

## **3.6 LIFO liquidations**

LIFO liquidations, which may also be referred to as decrements, refer to situations when inventories in old LIFO layers, carried at their (presumably) lower acquisition costs are liquidated. All other things being equal, LIFO liquidation increases current year income. In these situations, the principle underlying the LIFO method of inventory pricing—that current costs are matched with current revenue—will be negated. SEC SAB Topic 11.F requires disclosure (either in a footnote or

parenthetically on the face of the income statement) of the impact of LIFO liquidations on net income and earnings per share. See FSP 8.4.3.

It would not be appropriate to defer the effect of the liquidation at year-end even if affected inventories are expected to be replaced soon after year-end. See IV 3.7.1 for interim reporting considerations for LIFO decrements.

### **3.6.1 Measurement of amount to be disclosed in LIFO liquidation**

The basic objective of the LIFO inventory method is to match current costs with current revenues. Thus, the required disclosure of the effect of LIFO liquidations on pre-tax income and earnings per share should be based on decrements in specific LIFO pools and should be measured as the difference between the actual charge to cost of sales and the charge that would have been made if the quantities in the depleted pools had been replaced using the company's customary method of applying LIFO. Neither the effects of increments in other pools nor the effects of price increases applicable to quantities sold and replaced should be offset in determining the amount to be disclosed.

In practice, calculating the impact may be difficult because of the method used for pricing LIFO increments. For example, if a company using a dollar-value inventory method has a liquidation in the first quarter, the theoretical effect on cost of sales is based on the cost of replacing the inventory at the time it was sold. If the company uses the year-end price or index to compute the effect of the liquidation, some distortion could result. The same problem could arise if the liquidation occurred late in the year but the company uses a price or index from early in the year to compute the effect. Because precise information as to replacement cost at the time of liquidation may not be available, the price or index that would have been used to value a current year increment, had there been one, is usually used to compute the effect of the liquidation.

In situations when the specific period and reason for the LIFO decrement can be identified, however, it is appropriate to compute the income effect with reference to the costs of the particular period. For example, assume a decrement occurs in the third quarter of the year because of a strike or other unforeseen event and the company knows that the decrement will not be restored before year end. The computation of the income effect of the liquidation with reference to third quarter inventory costs would be appropriate even though the company ordinarily uses first quarter costs to value LIFO increments.

The effect on pre-tax income of a liquidation can frequently be determined as follows:

- **Quantity method** – units liquidated by layer multiplied by the difference between the unit price that would have been used to price a LIFO increment in the current year and the unit prices at LIFO of each layer liquidated
- **Dollar-value method** – base-year dollars liquidated by layer multiplied by the difference between the price index that would have been used to price a LIFO increment in the current year and the price index of each layer liquidated. This approach is easier to apply when pools are defined as natural business units. See Sections 4 and 5 of the FinREC LIFO guidance for application examples.

## 3.7 LIFO – interim reporting

For most companies, a detailed LIFO calculation is performed only once a year, at year-end. However, ASC 270-10-45-2 requires that accounting principles applied to interim periods conform to those used in preparing the annual financial statements. Thus, companies that apply LIFO must report interim results of operations using LIFO.

Two acceptable methods are commonly used in practice to estimate the effect of LIFO on interim periods: (a) an allocation of the projected year-end LIFO calculation, and (b) an interim year-to-date LIFO calculation based on actual changes in inventory levels (but excluding the effects of decrements expected to be reinstated by year-end).

Separate, discrete interim LIFO calculations that include recognition of the effects of decrements expected to be reinstated by year-end are inappropriate because that approach would change the valuation of any layers liquidated and reinstated during the year.

A change in the method of recognizing the effect of either increments or decrements is a change in accounting principle covered by ASC 250, which is acceptable only if preferable. See FSP 30.

### 3.7.1 LIFO – interim decrements

Companies that use LIFO may encounter a liquidation of a layer at an interim date that is expected to be replaced by year-end. In this situation, under ASC 270-10-45-6, the inventory at the interim reporting date should not give effect to the LIFO liquidation, and cost of sales for the interim reporting period should include the expected cost of replacement of the liquidated LIFO base. The authoritative literature does not, however, state either how the adjustment for such liquidation should be determined or how it should be reflected in the balance sheet.

There are two acceptable methods for determining the amount of the adjustment to eliminate the effect of an interim liquidation that is expected to be replaced by year-end:

- **The deferral approach.** The objective of this approach is to adjust cost of sales to what it would have been if there had been no liquidation. The adjustment is determined by comparing the current replacement cost in the period of liquidation with the LIFO inventory cost of the liquidated layers.
- **The liability approach.** The objective of this approach is to charge cost of sales in the liquidation period for the expected future replacement cost of the liquidated layers. The adjustment is determined based on projections of the prices that a company estimates will be paid to replace the inventory in the future period.

The liability approach more closely parallels the requirement in ASC 270, *Interim Reporting* and minimizes the distortion of future income that will result from the charge or credit in the future period for any difference between the amount accrued and the actual replacement cost. On the other hand, the deferral approach is less subjective and may be the only practical approach when future inventory prices cannot be reasonably estimated. Under the liability approach, futures contracts may be a source to estimate replacement cost. Under either approach, actual internal production costs should be considered if that is the expected method of replacement.

There are also two acceptable ways to reflect this adjustment in the balance sheet: (a) record it as a credit in the current liabilities section of the balance sheet or (b) record it as a credit (reserve) in the inventory account. Either balance sheet presentation may be used with either of the measurement methods.

A company that applies LIFO in interim periods through an allocation of the projected year-end LIFO calculation may include the effect of a LIFO inventory liquidation as part of the year-end LIFO adjustment that is allocated to all interim periods. Other companies that prepare year-to-date calculations at interim reporting dates should recognize the effect of LIFO liquidations that are not expected to be replaced by year-end in the interim period in which the liquidation occurs. Interim periods should generally be accounted for as discrete accounting periods. Therefore, interim LIFO liquidations that are determined to be permanent (not expected, based on substantial evidence, to be replaced by year end) should be recognized in the discrete accounting periods in which they occur. This position is supported by ASC 330-10-55-2.

### **3.7.2 LIFO – interim increments**

Increments that occur in an interim period that are not expected to reverse by year-end should be valued based on the company's annual increment valuation method (i.e., earliest, average, or latest purchase price method). Depending on the method, an increment that occurs early in the year may have to be revalued later in the year if prices change.

Companies may use a different approach to value temporary interim increments that are expected to reverse by year-end to avoid distorting interim results of operations. Since cost of sales of the quarter in which an increment occurs is charged for the difference between current quarter costs and the costs used to value the increment, the most reasonable matching of costs and revenues in interim periods can be obtained by pricing temporary increments at current quarter costs.

Companies that apply LIFO in interim periods through an allocation of the projected year-end LIFO calculation are not required to identify and account for interim increments separately. On the other hand, these companies should periodically update their estimates of the year-end LIFO adjustment (including the valuation of a projected increment).

## **3.8 Lower of cost or market considerations when using LIFO**

Although LIFO costs are generally lower than FIFO costs, which would ordinarily be expected to approximate replacement cost or a relationship to current selling prices, the use of LIFO does not eliminate the need to reflect inventory at the lower of cost-or-market.

### **3.8.1 LIFO lower of cost or market considerations – general guidance**

Under ASC 330-10-35-8, the lower of cost or market rule can be applied to LIFO inventories “either directly to each item or to the total of the inventory (or, in some cases, to the total of the components of each major category). The method shall be that which most clearly reflects periodic income.”

The FinREC LIFO guidance considers in broad terms the appropriate application of this principle and includes the following conclusions:

- LIFO pools generally constitute reasonable groupings for purposes of evaluating lower of cost or market. For companies using dollar-value LIFO, the lower of cost or market test should generally be applied to inventory in a particular pool. Aggregating similar pools (e.g., those involving an integrated product relationship or similar product lines) may also be appropriate, but aggregating dissimilar pools is generally not appropriate.
- The analysis for excess and obsolete reserves on LIFO inventory should be performed at the individual item level. Thus, a company that uses dollar-value LIFO should also record lower of cost or market reserves for individual obsolete or discontinued inventory items, even if a reserve is not necessary when measured in total for a particular pool.

Similar to the discussion in IV 1.3.2.3 for inventories measured using FIFO or average cost, lower of cost or market declines that are expected to be restored within the fiscal year, prior to the inventory being sold, should not be recognized in an interim period. If recovery is not expected prior to the inventory being sold or the end of the same fiscal year, declines in market value below LIFO cost should be recognized in the interim period in which they occur.

### **3.8.2 LIFO – individual item reserve methodologies**

The FinREC LIFO guidance discusses potential alternatives to how to determine the LIFO cost of individual items included in a LIFO inventory pool, which is necessary to determine the appropriate lower of cost or market adjustment when using an individual item approach. The LIFO cost of each individual item can be determined:

- Using a weighted average of the base year and total LIFO cost;
- Using the ratio of total LIFO to FIFO cost; or
- By performing the LIFO calculations with and without each of the individual items, and assuming the incremental differences represent the LIFO carrying amounts for each item.

### **3.8.3 LIFO – reversal of valuation reserves**

ASC 330-10-35-14 discusses the new cost basis after a write down.

#### **ASC 330-10-35-14**

In the case of goods which have been written down below cost at the close of a fiscal year, such reduced amount is to be considered the cost for subsequent accounting purposes.

In accordance with ASC 330, the reduced cost of inventory would be recognized in income when the goods are subsequently sold. However, under the LIFO cost flow assumption, inventory is not considered sold as each physical unit is transferred to a customer. Inventory is only considered sold when the overall inventory quantity in a LIFO pool declines. Thus, it is unclear how this guidance should be applied in a LIFO context.



The FinREC LIFO guidance concludes that a company should reverse its lower of cost or market reserves after it disposes of the physical units of inventory for which reserves were provided. Physical units subsequently acquired should be recorded at LIFO cost without the reserve. Therefore, a company would reverse the lower of cost or market reserves related to remaining inventory items if the inventory turns over in a subsequent period. Reserves related to obsolete or discontinued items that will not be replaced should be reversed when the items are removed from inventory (whether sold or scrapped).

The FinREC LIFO guidance does not specifically address the appropriate accounting when the market recovers but the inventory has not turned over or been disposed of. However, under ASC 330-10-35-14, adjustment of the reserve (other than in a subsequent interim period of the same fiscal year) prior to disposition of the related inventory is not permitted.

### **3.9 Special considerations for LIFO inventories**

In SEC FRP 205, the SEC cautioned registrants against the use of certain misleading accounting techniques that conflict with the conceptual application of the LIFO method.

#### **3.9.1 Incorporating new items into LIFO calculations**

One common problem in LIFO application involves determining whether items are “new items.” This is because the accounting for inventory added into the LIFO pools is different for new items and existing inventory. Financial results can vary significantly depending on how new items are defined and the computation methodology used to incorporate them into the LIFO calculations (e.g., the pricing index can become distorted if the current cost of the item is used as the base year cost). Neither GAAP nor IRS regulations or rules contain a specific definition of “new items,” and, over time, some interpretations have been challenged by both the SEC and the IRS. In general, items should not be considered new items simply because of insignificant or arbitrary differences in attributes (e.g., slight differences in chemical composition, changes in manufacturing or production line location, or differences in supply sources). The FinREC LIFO guidance provides the following additional guidance that may be used to identify a new inventory item:

- It should be “a raw material, product, or cost component not previously present in significant quantities in inventory.”
- It “should not be commingled physically with other materials or products so that its identity is lost and it should be accounted for separately.”
- It “should have qualities (physical, chemical, or both) significantly different from those of previously inventoried items.”
- It should not be “treated as fungible with items already in the pool.”
- “Changes in the market value of an item or merely purchasing a virtually identical item from a different supplier does not make the item a new item.”

When adding new items to a pool, the FinREC LIFO guidance recommends that the base-year cost be reconstructed. This is consistent with the concern expressed in SAB Topic 5.L that “when the effects of inflation on the cost of new products are measured by making a comparison with current cost as the base-year cost, rather than a reconstructed base-year cost, income is improperly increased.” If the

base-year cost of a new item is not objectively determinable, the FinREC guidance says it should be estimated “based on the most objectively determinable sources available, such as (in order of objectivity): published vendor price lists, vendor quotes, and general industry indexes.”

A lot of new items with an aggregate current cost that is a significant portion of the entire LIFO inventory could result in a material difference in the ending LIFO carrying amount if the current cost is used rather than the reconstructed base-year cost (i.e., current year inflation or cumulative inflation relative to the base year would be understated). Generally, in a period of rising prices, the failure to reconstruct base-year costs produces a higher inventory amount, presumably a higher tax bill, and higher reported net income. In addition, even if the effect of using current cost for new items in any given year may not be material in a single year, the cumulative effect of such a practice may be significant and is inconsistent with the LIFO principle.

Generally, the reconstructed base-year cost should be used to price new items added to existing LIFO pools. However, in certain limited circumstances it may be acceptable to value new items added to an existing pool at current-year cost. The use of current-year cost to price new items added to an existing pool may be appropriate if (1) the new items are clearly not similar to existing items in the pool and (2) the use of current-year cost does not distort the index that applies to other items in the pool. The use of the link-chain method or the substitute base-year approach would avoid such a distortion.

Section 4 of the FinREC LIFO guidance illustrates the difference in computed LIFO value if current-year cost, rather than reconstructed base-year cost, is used for a new item.

Reconstructing base-year costs may become more difficult the longer dollar-value LIFO is used. One way of minimizing this difficulty is to use the link-chain method to determine the price change for the year. Under the link-chain method, items in closing inventory are valued at prior year costs (rather than base-year costs) and current year costs are used to derive the current year’s index. This index is then linked to the cumulative index for the preceding year. The FinREC LIFO guidance notes that “if the link chain technique is used, reconstruction of prior years’ costs is unnecessary because that technique produces approximately the same results as reconstruction.”

A company that has applied LIFO for a long time may sometimes find it impractical, if not impossible, to reconstruct base-year costs of items previously reported on a non-LIFO basis. Under the substitute base-year approach described in the FinREC LIFO guidance, beginning-of-the-year costs for some year after the original base year, rather than the original base-year costs, are used to determine changes in dollar-value LIFO pools. Prior layers are retained, but the indices are expressed as a percentage of costs of the substitute base year. Under this approach, new items are priced at current-year costs rather than at reconstructed base-year costs. The IRS permits companies to use the substitute base-year approach in many circumstances. Similarly, the FinREC LIFO guidance concludes that “a company may use the substitute base-year technique for financial reporting purposes.”

### **3.9.2 LIFO transfer of inventory within a consolidated group**

Inventory may transfer between LIFO pools or from a LIFO pool to inventory accounted for at FIFO, either within a company or between subsidiaries or divisions of a reporting entity. These intercompany transfers can be particularly complex if a LIFO inventory liquidation has occurred during the year in any of the transferring LIFO pools. ASC 810-10-10-1 provides a reminder concerning the premise of consolidated financial statements.

**Excerpt from ASC 810-10-10-1**

The purpose of consolidated financial statements is to present...the results of operations and the financial position of a parent and all its subsidiaries as if the consolidated group were a single economic entity.

Consistent with the premise in ASC 810-10-10-1, under ASC 810-10-55-2 through ASC 810-10-55-4, intra-entity profit or loss on assets remaining within the consolidated group should be eliminated. Results of operations and financial position, therefore, should not be affected by inventory transfers within a reporting entity, including transfers with investments accounted for using the equity method. Inventory transferred between or from LIFO pools may cause LIFO inventory liquidations, which could affect the amount of intercompany profit to be eliminated. Many different approaches are used by entities to eliminate such profit. Each reporting entity should adopt an approach that, if consistently applied, defers reporting intercompany profits from transfers within a reporting entity until such profits are realized by the reporting entity through dispositions outside the consolidated group. The approach should be suited to the entity's individual circumstances.

There is diversity in the accounting for unrealized LIFO liquidation profit. Some companies continue to consider the profit to be unrealized as long as the ending inventory of the reporting entity (whether it is the inventory of the consolidated group or at an entity accounted for using the equity method) is equal to or greater than the prior year's inventory. Other companies follow the inventory method of the receiving pool. For example, if the receiving pool uses FIFO, the profit would be realized when the inventory is sold and would not be eliminated in consolidation or in equity method accounting. In the absence of any authoritative literature, either is acceptable, but companies should apply the selected approach consistently.

### **3.10 Retail industry LIFO practices**

Retailers may use the LIFO method for inventory valued at cost or for inventory valued under the retail inventory method (RIM). When using LIFO for inventory valued using the retail inventory method, inventory is valued using retail dollars, and increments and decrements are converted from retail dollars to cost using a cost complement percentage or index. Some retailers use an internally-developed LIFO index for book purposes and an externally-developed Bureau of Labor Statistics LIFO index for tax purposes. The book and tax LIFO indexes, as well as other aspects of the LIFO computations, may differ without violating the LIFO conformity rule.

#### **3.10.1 Application of LIFO when using RIM**

The following is an overview of the basic principles on how LIFO is applied when using RIM:

- The inventory in each pool at retail value is reduced to its base-year retail price by the application of the cumulative LIFO index appropriate for the pool, similar to the manner in which a cost-based LIFO index calculation would occur.
- The closing inventory at its base-year retail price is compared to the previous year's closing inventory at its base-year retail price.

- If this comparison indicates an increase in inventory (an increment), such increase is multiplied by the cumulative LIFO index applicable to the current year to get the current year retail value of the increase.
- If this comparison indicates a decrease in inventory (a decrement or liquidation), it is considered to have come from the most recently added LIFO layers. Therefore, deductions to cover the decrease are made from the latest period in which there were additions to inventory and at the prices at which they were previously added to the retail value of the inventory. If there have been no increases, the deductions are taken from the base year at the base-year retail price.
- An increase (i.e., a new LIFO layer) is then adjusted to LIFO cost through the use of the applicable cost complement percentage for the pool for the current year. In the case of a decrease, it is measured at the LIFO cost of the respective liquidated layers, or portion thereof.
- The adjusted increase or decrease (now reduced to LIFO cost) is added to or subtracted from the closing LIFO inventory of the previous year to obtain the closing inventory at LIFO as of the current year-end.
- The current cost of the inventory under the retail inventory method when FIFO is used as determined by the inventory control records is compared to the LIFO closing inventory figure. The difference is the cumulative LIFO adjustment at that year end and represents the net difference between LIFO and FIFO since the base year.
- The cumulative LIFO adjustment at the end of the current year is compared to the cumulative LIFO adjustment at the end of the previous year. The difference represents the annual LIFO adjustment, which is the effect on pretax income for the current year.

Figure IV 3-1 illustrates the application of LIFO when using the retail inventory method.

**Figure IV 3-1**  
Inventory cost and LIFO reserve - retail LIFO method

The following table reflects the calculations necessary to estimate the LIFO cost of merchandise inventory through the application of the retail LIFO method.

	Ending inventory	
	20X3	20X4
Cost – traditional RIM FIFO	\$50,000	\$63,900
Current retail	82,000	100,000
LIFO cost complement*	64%	67%
Cumulative index	1.17	1.25

\*The calculation of the LIFO cost complement is not shown in this example.

Analysis of year-end 20X3 inventory (beginning 20X4 inventory)

Year	LIFO cost complement	Cumulative index	Retail layer (Base-year cost)	LIFO cost	FIFO cost	LIFO reserve
20X1	62%	1.00	\$50,000	\$31,000		
20X2	63%	1.12	10,000	7,056		
20X3	64%	1.17	10,000	7,488		
			\$70,000	\$45,544	\$50,000	\$4,456

The ending LIFO inventory cost, resulting LIFO reserve and LIFO impact on income for 20X4 would be calculated as follows:

12/31/X4 inventory at retail	\$100,000
At base-year retail (\$100,000/1.25)	80,000
12/31/X3 inventory at base-year retail	(70,000)
New layer at base-year retail	\$10,000
Inflation index	× 1.25
New layer at current retail	\$12,500
Current year cost complement	× 67%
New layer at LIFO cost	\$8,375
12/31/X3 inventory at LIFO cost	\$45,544
12/31/X4 inventory at LIFO cost	\$53,919
12/31/X4 inventory at RIM FIFO	63,900
LIFO reserve at 12/31/X4	\$(9,981)
LIFO reserve at 12/31/X3	4,456
LIFO provision – 20X4	\$5,525

## Analysis of year-end 20X4 inventory

Year	LIFO cost complement	Cumulative index	Retail layer (Base-year cost)	LIFO cost	FIFO RIM cost	LIFO reserve
20X1	62%	1.00	\$50,000	\$31,000		
20X2	63%	1.12	10,000	7,056		
20X3	64%	1.17	10,000	7,488		
20X4	67%	1.25	10,000	8,375		
			\$80,000	\$53,919	\$63,900	\$9,981

**3.10.2 Alternative retail LIFO computation**

An alternative approach is used by some retailers that uses the traditional FIFO RIM costs to determine the LIFO index and ending LIFO inventories. This approach is summarized as follows:

- Each LIFO pool at retail value is reduced to cost by applying the applicable cost complement for the respective year.
- The closing inventory at cost is reduced to base-year cost by the application of the cumulative inflation index for the pool.
- The closing inventory at base-year cost is compared to the previous year's closing inventory at base-year cost.
  - If this comparison indicates an increase in inventory (an increment), such increase is multiplied by the cumulative index applicable to the current year to determine the LIFO value of the increase.
  - If this comparison indicates a decrease in inventory (a decrement or liquidation), it is considered to have come from the most recently added layers. Therefore, deductions to cover the decrease are made from the latest period in which there were additions to inventory and at the prices at which they were previously added to the LIFO value of the inventory.
- An increase (i.e., a new LIFO layer) is then adjusted to LIFO cost through the use of the applicable cost complement percentage for the pool for the current year. In the case of a decrease, it is measured at the LIFO cost of the respective liquidated layers, or portion thereof.
- The adjusted increase or decrease (now reduced to LIFO cost) is added to or subtracted from the closing LIFO inventory of the previous year to obtain the closing inventory at LIFO as of the current year-end.
- The current cost of the inventory under the retail inventory method when FIFO is used as determined by the inventory control records is compared to the LIFO closing inventory figure. The

difference is the cumulative LIFO adjustment (reserve) at that year end and represents the net difference between the LIFO and FIFO inventory since the base year.

- The cumulative LIFO adjustment at the end of the current year is compared to the cumulative LIFO adjustment at the end of the previous year. The difference represents the annual LIFO adjustment, which is the effect on pretax income for the current year.

Figure IV 3-2 illustrates an alternative application of LIFO when RIM is used.

### Figure IV 3-2

#### Inventory cost and LIFO reserve – alternative retail LIFO method

The following table illustrates the calculations necessary to estimate the LIFO cost of merchandise inventory through the application of the retail LIFO method.

	Ending inventory	
	20X3	20X4
Cost – RIM FIFO	\$50,000	\$63,900
Current retail	82,000	100,000
LIFO cost complement	64%	67%
Inflation index	1.17	1.25

Analysis of year-end 20X3 inventory (beginning 20X4 inventory)

Year	LIFO cost complement	Cumulative index	Base-year cost	LIFO cost	RIM FIFO cost	LIFO reserve
20X1	62%	1.00	\$31,000	\$31,000		
20X2	63%	1.12	6,800	7,616		
20X3	64%	1.17	7,055	8,254		
			\$44,855	\$46,870	\$50,000	\$3,130

The LIFO inventory and reserve for 20X4 would be calculated as follows:

12/31/X4 inventory at retail	\$100,000
LIFO cost complement	× 67%
12/31/X4 inventory at RIM FIFO cost	\$67,000
Cumulative index	÷ 1.25
12/31/X4 inventory at base year cost	\$53,600
12/31/X3 inventory at base-year cost	(44,855)
20X4 layer at base-year cost	8,745
Cumulative index	× 1.25
20X4 cost layer at current costs	\$10,931
12/31/X3 LIFO inventory	46,870
12/31/X4 inventory at LIFO	\$57,801
12/31/X4 inventory at RIM FIFO cost	63,900
12/31/X4 LIFO reserve	\$6,099
12/31/X3 LIFO reserve	3,130
20X4 LIFO impact	\$2,969

Analysis of year-end 20X4 inventory

Year	LIFO cost complement	Cumulative index	Base-year cost	LIFO cost	RIM FIFO cost	LIFO reserve
20X1	62%	1.00	\$31,000	\$31,000		
20X2	63%	1.12	6,800	7,616		
20X3	64%	1.17	7,055	8,254		
20X4	67%	1.25	8,745	10,931		
			\$53,600	\$57,801	\$63,900	\$6,099



**3.10.3** *Effect on retail LIFO of changes in pricing structure*

The retail LIFO method measures current year increments and decrements assuming that the general pricing structure of retailers (e.g., full service, every day low price, or warehouse) remains the same. If a retailer changes its pricing structure, which suddenly increases or decreases its retail prices, the retail LIFO method may not properly measure the current year increment or decrement because of the distortion that could arise in the index calculation as a result of the price change, which would not reflect an underlying change in cost. If this type of change in pricing structure occurs, a more detailed analysis may be required to ensure the proper measurement of the increment or decrement.