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Precepts of inventory Valuation

Stanley Bissel

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PRECEPTS OF INVENTORY VALUATION

by

Stanley J. Bissel

Bachelor of Science, Valley City State 1974

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Grand Forks, North Dakota

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sheet and the income statement. Since inventory is a current asset, its size and valuation have an impact on important balance sheet, liquidity, working capital and other financial analyses. Also, inventory is a component element in determining

CHAPTER I

INTRODUCTION

AICPA Bulletin Number 43 defines the term "inventory" as follows:

The term inventory is used herein to designate the aggregate of those items of tangible personal property which (1) are held for sale in the ordinary course of business, (2) are in process of production for such sale, or (3) are to be currently consumed in the production of goods or services to be available for sale.¹

Therefore, the term includes merchandise which is to be sold in the normal course of business, and materials and supplies to be used to produce finished goods for sale.

For most manufacturing and mercantile enterprises, inventories constitute a very significant portion of total assets. Therefore, inventory valuation is a very crucial process. Of all the assets appearing on financial statements, inventory usually gives the accountant the most difficult problems. Inventory is subject to various cost adjustments, such as freight-in and cash discounts. It necessitates special recording techniques such as physical counts and cut-offs of sales and purchases. Also, inventory requires many assumptions for areas such as valuation techniques and cost flow.

Another unique feature of inventory is that it appears on, and has a major effect upon, both the balance sheet and the income statement. Thus, the inventory at any given date is the balance of costs applicable to goods on hand remaining after

sheet and the income statement. Since inventory is a current asset, its size and valuation have an impact on important balance sheet, liquidity, working capital and other financial analyses. Also, inventory is a component element in determining cost-of-goods sold on the income statement, thereby having an important effect in the determination of profit.²

The appearance of inventory on both the balance sheet and income statement necessitates the allocation of the total cost of goods or materials available between those that are related to future periods and are carried forward as assets at the end of the period and those that have expired and become expenses of the period. Procedures used to make this allocation tend to favor either the balance sheet figure for inventory, wherein it is desirable to show inventory at cost, or at its future utility to the business, whichever is lower, or the income statement value for inventory, where the purpose is to effect a proper determination of income as between accounting periods. Conservatism with respect to the balance sheet objective may not be conservative in terms of the income statement objective. In recent years, the income measurement objective has been advocated as the major objective.³ The AICPA stated in Accounting Research Bulletin Number 43 that:

in accounting for the goods in the inventory at any point of time, the major objective is the matching of appropriate costs against revenues in order that there may be a proper determination of the realized income. Thus, the inventory at any given date is the balance of costs applicable to goods on hand remaining after

the matching of absorbed costs with concurrent revenues. This balance is appropriately carried to future periods provided it does not exceed an amount properly chargeable against the revenues expected to be obtained from ultimate disposition of the goods carried forward. In practice, this balance is determined by the process of pricing the articles comprised in the inventory.⁴

All of the factors mentioned above lead one to conclude that inventory not only plays a critical role in most manufacturing and mercantile companies, but it is also most susceptible to variations and errors in valuation.

Also, Horace G. Barden, author of Accounting Research Study Number 13, classifies diversities in inventory practice into three general groups:

1. Differences in the composition of product costs and in the allocation of costs to units of production. The questions revolve around determination of the costs to be associated with production operations and used in calculating unit product costs.

2. Differences in cost flow assumptions used in compiling the cost of year-end inventories and cost of products sold. Problems generate from the potential lack of valid comparability between Lifo applications and between Lifo and Fifo applications in substantively similar circumstances.

3. Differences in implementation of the concept of lower of cost or market. Differing interpretations of the meaning of the term "market" and complexities in applying the present rule can result in significant differences in reported results.⁵

Philip E. Meyer advocates an approach to inventory valuation which includes the three diverse areas mentioned in Accounting Research Study Number 13, as well as other important areas. Meyer lists six precepts that can have a material impact on the value of both beginning and ending

inventory. These precepts are:

- (1) Selection of cost basis
- (2) Use of lower of cost or market
- (3) Unrealized intercompany profit
- (4) Use of variable costing
- (5) Inclusion of other costs
- (6) Error⁶

This paper will expand on Meyer's six precepts and endeavor to present a comprehensive view of the components of inventory valuation in view of Accounting Research Study Number 13 and recent Internal Revenue Service rulings. Also, the final chapter will contain a discussion of the current trends in inventory valuation, with emphasis on the current popularity of LIFO, the degree of change to LIFO, and the reasons for the change.

¹American Institute of Certified Public Accountants, APB Accounting Principles, (Chicago: Commerce Clearing House, Inc., 1973), Vol. 1, paragraph 5121.02.

²Philip E. Meyer, "A Basic Approach to Inventory Valuation: A Bird's Eye View," The Practical Accountant, March-April 1974, p. 55.

³Glenn A. Welsch, Charles T. Zlatkovich, and John Arch White, Intermediate Accounting, (Homewood, Ill.: Richard D. Irwin, Inc., 1972), p. 306.

⁴American Institute of Certified Public Accountants, APB Accounting Principles, paragraph 5121.04.

⁵Horace G. Barden, "The Accounting Basis of Inventories," Accounting Research Study No. 13, (New York: AICPA, 1973), p. 11.

⁶Meyer, "A Basic Approach to Inventory Valuation: A Bird's Eye View," pp. 55-57.

association based on certain assumptions of product flows, cost flows, and inventory valuation. The most common methods of association are: (1) specific identification; (2) average cost method; (3) first-in, first-out; (4) normal stock methods; (5) retail method.

CHAPTER II

SELECTION OF COST BASIS

Objectives

Meyer's first precept involves the selection of a cost basis for valuing inventory. That is, an appropriate cost-flow assumption must be made. The primary basis of accounting for inventories is cost. The problem lies in the selection of one of several accepted methods to allocate the identified product costs to the specific quantities of merchandise sold and the specific quantities still on hand. If homogeneous units were acquired, in a single lot or in different lots, at the same unit price, the amount allocated to cost of goods sold would be the same for each unit of product. Therefore, all cost methods would result in the same valuation for inventories and net income, subject to the argument that adjustments for diminished utility of some units may have to be made.

However, circumstances are seldom such that homogeneous units are acquired at the same price. Frequently, the units of product must be acquired at different prices, so that the problem of associating these costs with cost of goods sold and inventory becomes a difficult one. Accountants have attempted to solve this problem by setting up specific rules of

association based on certain assumptions of product flows, cost flows, and inventory valuation. The most common methods of association are: (1) specific identification; (2) average cost methods; (3) first-in, first-out; (4) normal stock methods; (5) retail inventory methods; and (6) the gross profit method. Accountants must analyze the existing condition and their specific objectives and choose the appropriate method.¹

The main objectives of associating costs with inventories have been matching costs with revenues on the income statement and identification of costs with inventories for proper balance sheet presentation. However, when costs are changing over time, these objectives become inaccurate and difficult to achieve, because there is the problem of which costs should be matched with revenues and which costs should remain in inventory. As a result, accountants have been forced to formulate more basic objectives which give emphasis to either the income statement figure of costs of goods sold or the balance sheet figure for inventory, or which attempt to place equal emphasis on both. Eldon S. Hendriksen lists these basic objectives as follows: (1) Costs should be identified as closely as possible with each specified unit of merchandise sold. This objective considers each product a specific venture. The income of each venture is measured by the difference between the specific cost of the product and the revenue generated by the sale of the product. Therefore, the specific cost of each venture is carried forward in the inventory until the corresponding revenue is reported.

(2) Rather than consider the operations of the firm as a series of separate ventures, this objective views the operations as a continual series of transactions. The emphasis is, therefore, on considerations other than the actual physical flow of goods. Since the determination of current income is considered more important than the valuation of inventory, emphasis is placed on the matching of current costs with current revenues on the income statement. The inventory is, then, considered to be composed of a residual of historical costs. It is argued that the fact that the inventory is not valued at current costs will not affect the computation of net income so long as the firm maintains the same level of inventory in the future. Another argument is that this objective provides a current operating income, which excludes "unrealized" gains and losses from price changes relating to the basic inventory. (3) The third objective emphasizes the current valuation of ending inventory. The best valuation method is assumed to be one that is based on the most recent acquisition costs, since the inventory is considered as being continually replaced. The net income, therefore, includes all gains and losses from price changes relating to the goods that are assumed to have been sold. (4) Another objective is to identify the price change gains and losses and measure separately the income generated by buying and selling operations. However, this objective cannot be accomplished by a strict adherence to cost. Some measure of current prices, such as replacement cost, must be

introduced. Current costs are matched with current revenues to determine operating income, and the gains and losses from price changes are measured by comparing current costs with historical costs.²

The American Accounting Association Committee on Accounting Concepts and Standards supported the first objective listed above in its Supplementary Statement Number 6. In 1964, the AAA committee stated that where specific identification was impossible, the first-in, first-out method should be used.³

However, the AICPA, apparently has endorsed the second objective in its Bulletin Number 43 in which it states:

The major objective in selecting a method should be to choose the one which, under the circumstances, most clearly reflects periodic income.⁴

The third objective of stating the inventory as close as possible to current prices has frequently been suggested. However, since the early 1930's, the income measurement objective has been deemed more important than showing current costs on the balance sheet.

The fourth objective of disclosing gains and losses from price changes, cannot be completely achieved by strict adherence to the cost basis of valuation. However, some of the cost methods do achieve this objective in part.⁵

Cost-Flow Methods

Specific Identification

When the items in inventory are relatively large in

size, or high in cost and small in quantity, it may be feasible to keep detailed records so that the actual cost for each item is known. Then, this actual cost can be matched against the revenue from the sale of that item and a truer profit picture can be attained. However, in reality, specific identification is usually impractical. The difficulty of keeping detailed costs of items makes it more feasible to adopt other cost-flow methods.

Another objection to specific identification is that it breaks the business down into separate ventures for each item, rather than looking at the business as an integrated whole. Furthermore, the purported advantage of precision derived from specific identification becomes clouded by the fact that joint costs exist and must be allocated. Any method of allocation would be imprecise and, therefore, lessen the accuracy attributed to specific identification.

It can be argued that specific identification has the disadvantage of profit manipulation by the arbitrary selection of low or high cost items for ending inventory. Also, specific identification actually effects some flow of goods assumption even if the manager of the business does not attempt to produce this effect. When customers are free to choose the product, they may select the one in front, which would presumably produce a FIFO flow, or the one in the back, effecting a LIFO flow.⁶

Average Cost Methods

Use of average cost methods permits each purchase price to influence the inventory valuation and the cost of goods sold. The assumption underlying average cost methods is that the buying and selling operation results in the accumulation of costs and the assignment of these costs to inventory and cost of goods sold on the basis of a single price. The single price is looked at as a representative unit cost of all goods handled during the period. Normally, no specific flow of goods is assumed, other than the random flow of goods effected by the arbitrary selection of products by customers.

Average costs represent a somewhat neutral position, in that they do not reflect either the matching of current costs with current revenues or current costs for the inventory valuation on the balance sheet. Therefore, average costs presumably do not have a definite objective of either proper income measurement or current cost valuation of inventory on the balance sheet. The degree of neutrality, however, depends partially on the manner in which the average is computed. A simple, unweighted-average, which is computed from unit prices alone without consideration of quantities purchased at each price, leads to inconsistent and inaccurate results. The simple average will be affected by the rapidity of price changes and the timing of purchases.⁷ This is an illogical method, since unit prices applicable to large and

small purchases are given the same weight in the computation. On the other hand, a weighted-average gives recognition to the quantities purchased at the various unit prices. In determining the weighted-average, the cost of the purchases plus the beginning inventory is divided by the total units purchased plus those in the beginning inventory. Since the costs determined by this method include purchases made early in the period as well as those made at the end of the period, there is a possibility of a considerable lag between purchase costs and inventory valuation. Therefore, when prices are rising, the weighted-average costs will be less than current costs and when prices are declining, they will be greater than current costs.⁸

When perpetual inventories are kept, a moving-average is considered more appropriate. Under this method, a new unit-average cost is computed after each purchase. The moving-average is determined by dividing the total units in inventory, including those just purchased, into the total cost of those units.

Both the simple weighted-average and the moving-average are affected by the lag between purchases and inventory valuation, although it is less pronounced under the moving-average. Therefore, when these averages are computed for short periods of time, they may approximate a first-in, first-out flow, if the turnover is high and purchases are made frequently. So, it is apparent that in

these cases, average costs are not completely neutral in their effects on the income statement and balance sheet.⁹

First-In, First-Out (FIFO)

The basic assumption underlying the FIFO method is that the inventory costs assigned to cost of goods sold should be the earliest costs incurred. That is, costs should be assigned to units sold in the order in which those costs were incurred. Thus, the costs used to value the remaining inventory are the costs of the most recent acquisitions.

Proponents of FIFO say that it is the best method because it represents the manner in which goods flow in most industries. They contend that management strives to sell the oldest units first and have an inventory consisting of the most recent purchases. Thus, FIFO represents an approximation of the specific flow of goods. FIFO has the advantage that management cannot manipulate profits through the selection of which units to sell. Also, profits are not influenced by arbitrary choices by customers of which goods they will purchase, as is the case when the specific identification method is used. FIFO provides a consistent and systematic determination of inventory and cost of goods sold, and it provides comparability among firms in the same industry over several years.¹⁰ Horace G. Barden states in Accounting Research Study Number 13 that:

an assumption of a first-in, first-out flow of costs

generally coincides with the actual physical flow of products and merchandise since management usually attempts to dispose of units in that order. Accordingly, the FIFO assumption of cost flow typically achieves the closest practicable approximation to specific cost identification for pricing inventories and for matching costs with revenues. I conclude, therefore, that specific identification of costs and, if that is not practicable, the FIFO cost flow assumption represent approaches to inventory cost determination which are sound in principle.¹¹

An objective of FIFO is current cost valuation of the ending inventory on the balance sheet. It is assumed that this valuation approximates replacement cost. How close this approximation is to replacement cost, however, depends on the frequency of price changes and the rate of inventory turnover. If the turnover is rapid, inventory valuations will reflect current costs, unless a considerable price change occurs after the latest purchase. However, FIFO valuation will seldom be identical to replacement costs, except under the unusual condition of stable prices for the entire reporting period.

The major objections to the first-in, first-out inventory method stem from its failure to meet the objectives of matching current costs with current revenues and the separate reporting of holding gains and losses from price changes.¹² With the present condition of runaway inflation, FIFO valuation results in higher reported profits than other valuation methods such as last-in, first-out (LIFO), since FIFO matches older, lower costs against current revenues. This results in higher tax payments than would be necessary under LIFO. A study in the Tax Advisor showed that taxable

corporate profits would have been 48.4 billion less between 1945 and 1970 if the effects of inflation in inventory prices were excluded.¹³ The Securities and Exchange Commission has also come out with a release (Accounting Series Release 151) concerning "inventory profits," and is presently conducting further study on the subject which should culminate soon. The subject of "inventory profits" will be discussed further in the final chapter of this paper.

Normal Stock Methods

The normal-stock methods of inventory valuation were developed to meet the objectives of matching current costs with current revenues and the elimination of holding gains and losses resulting from inventory price changes. Their original popularity stemmed from the fact that they presented a conservative valuation of the ending inventory for balance sheet purposes. They were not widely accepted, however, because they were not acceptable for United States income tax purposes. But, when the Internal Revenue Codes of 1938 and 1939 recognized the last-in, first-out method as acceptable, LIFO gained rapid popularity.

Base-Stock Method

Although disallowed for income tax purposes in the 1920's, the base-stock method deserves discussion, since it was important in the historical development of LIFO. The base-stock method was used by some companies (mostly in England) in the latter part of the nineteenth century. It

had limited use in the United States in the early 1900's. Under this method, management designated a "normal" quantity of inventory which represented the minimum base for effective operation. This minimum base was treated much like a fixed asset and was carried forward from year to year at an arbitrary nominal cost. If deficiencies in the base-stock were present at the end of the year, they were viewed as temporary and reserves were set up for expected excess costs of replacement over base-stock costs. In this manner, earnings of a period were not affected by gains and losses from price changes.

Inventory quantities which exceeded the minimum base were usually carried on the FIFO basis, although sometimes average and LIFO were used. The principal users of this method were producers and refiners of metals and petroleum products.¹⁴ Some of the advantages claimed for the base-stock method are: (1) matching of current costs with current revenues; (2) conservative ending inventory valuation on balance sheet; (3) no unrealized holding gains and losses due to price changes attributable to base inventory; (4) smoothing of income; (5) only income available for dividends is reported.

However, the following disadvantages led to the ultimate rejection of the base-stock method: (1) designation of "normal" quantity of minimum base was subject to manipulation; (2) inadequate comparability among firms, due to subjectivity of the selection of the minimum base; (3) inventory valuation did not represent cost and was also subject to manipulation.¹⁵

Last-In, First-Out (LIFO)

LIFO's basic assumption is the assignment of the cost of the most recent goods purchased to cost of goods sold. Thus, the ending inventory is valued at the oldest costs incurred for goods. To cost the inventory, the accountant refers to the cost of the beginning inventory and, if ending inventory is larger than beginning inventory, then to the earliest purchases of the year to the extent necessary. Utilization of the LIFO method necessitates keeping records of "LIFO layers" of inventory. That is, distinct layers must be distinguished in the records for all quantities with different prices. This series of layers is formed as quantities of inventory are added, and reductions are removed in the reverse order of additions.

In a few limited situations, LIFO has been acknowledged as reflecting the specific flow of goods. An example of this would be nonperishable raw materials which are stored in piles, with the latest raw materials consistently placed on top of the older raw materials. When the materials are used, they are taken from the top of the pile. However, in the usual situation, this is not the specific order of the flow of goods, and use of LIFO in this situation is referred to as artificial LIFO.¹⁶

LIFO was adopted as a substitute for the base-stock method. Congress amended the tax law in 1938, making LIFO acceptable for use by processors of basic metals and tanners

of hides. Other enterprises called the law discriminatory, since their inventory quantities possessed certain characteristics similar to those of the companies approved for LIFO use. As a result of this argument, Congress further amended the tax law in 1939, extending the use of LIFO to all industries. However, Congress stipulated that (1) a taxpayer using LIFO must also use LIFO for general financial reporting purposes, and (2) that the lower of cost or market rule could not be used to reduce the LIFO basis for tax purposes.¹⁷

The majority of the proponents of LIFO do not consider it as an approximation of the flow of goods. Rather, they consider it a logical method for other reasons. Their main objective, of course, is the matching of current costs against current revenues, thereby eliminating gains and losses resulting from the holding of inventories while prices are changing. LIFO proponents assume that a base inventory must be constantly maintained because it is needed to keep the business operating. However, this base inventory is not classified as a fixed asset.

In addition to the advantages mentioned above for the base-stock method, LIFO is regarded as beneficial for the following reasons:

1. It is a consistent method for allocating cost-of-goods sold which meets the objectives of the base-stock method, but size and cost of the base inventory are not dependent on subjective decisions.

2. It does not require a periodic review of what is considered a "normal" quantity of inventory.

3. The most convincing reason for the adoption of LIFO is that it is an acceptable method for tax purposes,

which permits smoothing of income and smoothing of tax payments. Under present conditions, where prices have been only moving up, this results in a permanent tax savings for corporations that adopted LIFO when prices were low. Also LIFO permits payment of taxes in those years when the income is realized.¹⁸

The primary arguments against LIFO are as follows:

1. The valuation of inventory on the balance sheet is out of date, reflecting costs from some prior period. Also, since the inventory valuation depends on the level of prices in the year of adoption of LIFO, comparability among firms is impossible, even if they all use LIFO. Also, the working capital ratio, as well as other financial ratios are rendered useless. This problem could be alleviated through the use of parenthetical reporting of current inventory valuations, but this procedure is not used widely.
2. LIFO only partially solves the price-level problem. It reflects specific price changes, but a complete adjustment of current net income requires use of a general price index.
3. Elimination of unrealized holding gains and losses distorts the measurement of the over-all performance of management.
4. Unless both purchases and sales occur regularly in even quantities, the revenues will not be matched with the costs current at the time of sale.
5. If the inventory is reduced below the level prevailing at the time LIFO was adopted, the matching of old costs against current revenues produces absurd results. One period's income may include the accumulated gains and losses since LIFO was adopted, resulting in a major distortion. Proponents of LIFO advocate dealing with this problem by setting up a reserve for the excess of replacement cost over the recorded LIFO cost of the base inventory liquidated. However, if the composition of inventory is changing, it may be impossible to obtain replacement or reproduction costs for items no longer produced. To avoid this problem, firms often purchase enough inventory near the end of the period to insure that the ending inventory is at least equal to the beginning inventory. This not only constitutes manipulation of income, but, also temporarily increases market prices and gives a false indication of the demand for the particular product.
6. Smoothing of income is not a desirable objective of financial accounting. If results of operations are not smooth, accounting should not make them appear so. Even if smoothing were desirable, it only occurs if prices move up and down, which hasn't been the case.

rather than the entire inventory. Reductions in LIFO inventories are subtracted first from the most recent layer or layers, and then from base inventory.²⁰

If the dollar-value LIFO method is to be valid, the items in inventory should be grouped into homogeneous "cost pools." This grouping should be based on homogeneity of price movements, rather than physical nature or use.

The dollar-value LIFO method results in inventory valuations that may be lower than ordinary LIFO because, with the use of "cost pools," quantity increases of some items may be offset by quantity decreases of other items. It also suffers from the inaccuracies resulting from use of dollar amounts to represent quantities and the use of indexes or averages for measuring price changes, in addition to all the disadvantages of ordinary LIFO.²¹

Retail Inventory Method

The retail inventory method was developed to eliminate the need for perpetual inventory records for businesses such as large department stores, where the inventory consists of a multitude of different items. Under the retail method, records are kept which show both the original cost of the inventory and the value of the inventory at retail. To estimate the inventory at any time, the net sales for the period are subtracted from the total goods available at retail for the period. Then, the remaining inventory at retail is multiplied by the cost to retail percentage (ratio

of computation of the ratio. The reason markdowns are ignored is to produce an inventory figure that conforms most nearly to the lower of cost or market rule. If markdowns are subtracted before computing the cost to retail ratio, an inventory valuation which is higher than market will result, thus violating the lower of cost or market rule. The net markdowns are subtracted, however, along with sales, to arrive at the remaining inventory at retail.

The retail method applies an average cost ratio to the selling price. Therefore, it is assumed that the same proportion of high-cost-ratio goods and low-cost-ratio goods will be found in the ending inventory as was present in the total goods available for sale. If this proportion is not, in fact, the same, the retail method gives fallacious results. This problem can be somewhat alleviated by use of departmental rates, where goods bearing similar ratios are grouped together for computation of the cost to retail percentage. However, even with departmental rates, inaccuracies can result if part of the merchandise in the department is marked up and part is marked down. The proportion of high-cost-ratio and low-cost-ratio goods is thus distorted.²³

It has sometimes been assumed that the retail method approximates the weighted-average method, since a weighted average of the cost to retail ratio of all goods available during the period is computed. However, only if selling prices are relatively stable, or unrelated to cost price

changes, will it approximate weighted-average. If selling prices and costs are moving in the same direction, at approximately the same percentage, a FIFO flow will be approximated.²⁴ The gross profit method is the estimation of inventory. The LIFO concept can be applied to the retail method. There are two basic differences in the procedures used for LIFO-retail. First, markdowns as well as markups are included in the determination of the cost ratio. The second difference is that the beginning inventory is excluded in the determination of the cost ratio and added in later.²⁵ required.

Gross Profit Method

The gross profit method is based on the assumption that the gross profit percentage will be approximately the same over several successive periods. Therefore, it differs from the retail method because the cost-sales ratio is computed by taking an average of the cost of sales to sales ratio for several prior years, whereas the retail method computes a cost to retail percentage for only the goods available for sale in the current period. Another basic difference between the gross profit method and the retail method is that the inventory is computed by subtracting the estimated cost of sales from the cost of goods available for sale, rather than subtracting sales from goods available at retail. The gross profit method is less accurate than the retail method, since it uses a rough estimate for the cost of goods sold.

The several methods of inventory valuation provide

varying effects on net income and the balance sheet valuation of inventory when specific prices are changing in one direction for the entire period. All of the cost methods, however, will have the same dollar value for cost of goods available in a given instance, since this is composed of ending inventory and cost of goods sold. The varying effects, then, stem from whether the specific price changes are reflected in the inventory or the cost of goods sold.

Although the effect of price changes on income and on the balance sheet valuation of inventory depends on such factors as the degree of price fluctuations, inventory turnover, the level of prices when the current cost-flow method was adopted, and the relative size of inventory costs to other costs, several generalizations can be made about the various cost-flow methods: (1) FIFO generally produces the highest net income and the highest inventory valuation if prices are rising steadily during the period. FIFO has an opposite effect when prices are falling steadily. (2) LIFO results in the lowest net income if prices are rising steadily during the period and no liquidation of the beginning inventory occurs. The ending inventory valuation can be higher or lower than under FIFO, depending on the level of prices existing when LIFO was adopted. (3) The weighted-average method emphasizes neither ending inventory nor net income. Usually, the weighted-average method will produce results between the two extremes of LIFO and FIFO. A moving-weighted-average, however, produces results closer to FIFO,

since recent purchases receive greater weight. (4) An approximation of net realizable value less a "normal" net markon (the difference between the cost and the original retail plus net markups) for the final inventory valuation is obtained with the retail method. Its results are closer to FIFO than to average cost, because the ending inventory is priced initially at current selling prices.²⁷

After analyzing the various cost-flow methods and comparing the effects of each method on income measurement and inventory valuation, one question still is unanswered. When should you use a particular cost-flow method?

Barden, in Accounting Research Study Number 13, concludes that FIFO is the most logical cost-flow assumption if specific identification is not practicable. He sees FIFO as being compatible with the fundamental cause and effect relationships which are the basis of product cost determinations. Also, FIFO's matching of costs and revenue reflects the manner in which production and merchandising activities are performed in the business and economic system. From this it can be concluded that in usual circumstances, where specific identification is impracticable, FIFO is the most appropriate selection as a cost-flow method. FIFO reflects the actual flow of goods in the majority of cases, and it is the closest approximation to specific identification.

What then would justify a departure from the actual flow of costs? Situations which mandate the use of the

retail method and the gross profit method have already been discussed. The retail method, it will be recalled, is extremely useful for department stores and similar enterprises where the large volume of purchases and sales makes it unfeasible to keep detailed records for specific identification of the cost of each item. The increased inventory control and the simplification of inventory valuation provided by the retail method justify its use in the department store type of circumstance. Similarly, the gross profit method proves useful for interim statements, fire losses and auditing tests; however, the gross profit method is not acceptable as the sole valuation method.

It is quite probable that the best reason for use of average costs is the avoidance of the two extremes produced by the use of LIFO and FIFO. Average costs will produce results somewhere between the results produced by FIFO and LIFO. Therefore, the inventory valuation on the balance sheet isn't as biased as under the LIFO method, and the income measurement under average costs is not as biased as under FIFO.

Barden recommends that when using average cost, the financial statements should contain a complete description of the type of averaging used, thereby indicating the extent to which inventory costs may or may not be current. He states that averaging is used in varying degrees even when FIFO and LIFO assumptions are used, such as in process cost systems. Therefore, a definitive description of the average cost

method used is needed to sufficiently distinguish it from a FIFO or LIFO cost-flow assumption.²⁸

Now we come to the most controversial of the cost-flow methods--LIFO. As mentioned earlier, very few situations exist in which the actual flow of goods or materials is a LIFO flow. Therefore, usually LIFO is in direct opposition to the actual flow of goods and is termed "artificial" LIFO.

Considering LIFO's incongruity to the actual flow of goods, when and why should LIFO be used? What criteria must be met to justify the use of LIFO? During the 1938 U. S. Senate Finance Committee hearings on the tax status of LIFO, testimony established the following characteristics of inventory as being necessary to make the use of LIFO appropriate:

1. Inventories must be large in relation to other assets.
2. Inventories must consist of a few basic materials that form a substantial part of the cost of products sold.
3. The spread between raw material costs and selling prices must be relatively constant.
4. Inventory turnovers must be slow because of the length of the processing cycle.
5. Raw material to fill specific orders must customarily be purchased.²⁹

Barden states that the only theoretical justification appears to rest on the base-stock, unrealized profit theory. Furthermore, the practical justification appears to be that LIFO is the only method of its kind acceptable for federal income tax purposes.

Barden also came out in support of the base-stock concept in certain circumstances where a minimum inventory is undeniably needed to sustain operations. Examples of

Thus far, the discussion on inventory pricing has been

such circumstances are refining processes and steel production. He believes that the use of LIFO is justifiable in certain types of operations--the truly base-stock types of operations. However, he does not agree that LIFO should be the only acceptable method. Barden feels that legislative restraints should be removed so that the use of the base-stock method would be permitted, since the base-stock method does not have the shortcomings present in the LIFO method. This, of course, will take some time.

For a short-range solution, Barden listed five guidelines along which future pronouncements on inventory should be based:

1. Describe the circumstances in which specific identification of costs is most acceptable--situations in which inventory items are not interchangeable and are acquired or produced as single units that can be readily identified throughout the manufacturing or merchandising processes.
2. Establish FIFO as the basic concept of cost flow assumption if specific identification of costs is not used (either because it is impracticable or because it fails to provide an acceptable basis of matching costs and revenues.)
3. Recognize that in some circumstances an assumed cost flow such as LIFO (or base-stock) is a logical basis for avoiding possible distortions of income from fluctuations in the current cost of basic fixed inventory quantities.
4. Require full disclosure of the basis used if the FIFO cost flow assumption is not used.
5. Require disclosure of the extent of application of LIFO (or base-stock type cost flow assumptions) and the effects of its use as compared with the FIFO basis on both net income of the year and balance sheet inventory amounts with appropriate disclosure of related tax allocations.³⁰

Lower of Cost or Market Rule to "market."

Thus far, the discussion on inventory pricing has been

based solely on historical cost, since historical cost is the primary basis for inventory valuation. However, generally accepted accounting principles provide that the use of inventory valuation bases other than cost are acceptable under two types of circumstances:

1. If a loss in usefulness of inventories is recognized by applying the rule of lower of cost or market.
2. If it is impracticable to determine the unit costs of certain types of products having the characteristics of interchangeability and assured selling prices.³¹

The departure from cost which will now be discussed is the one listed in the first circumstance above--the lower of cost or market rule.

The lower of cost or market concept can be traced back to as early as the 19th century and before. At that time, the emphasis was on the balance sheet, rather than the income statement. Thus, since creditors had no reliable report on which to project future operations, they wanted assets to be valued at the lowest possible conversion value. This spawned the policy of conservatism with respect to balance sheet valuations. The creditors could be quite sure that the assets were worth at least as much as the valuation in the balance sheet indicated.

As the emphasis in accounting changed to the income statement, the lower of cost or market rule was again supported because it would make the reported income conservative. The income would be smaller because all possible losses would be recognized by reducing asset valuations to "market."

Recognition of gains, however, would be deferred until the point of sale.³²

The basic rule for the lower of cost or market concept, as stated in ARB 43, Chapter 4, Statement 5, is as follows:

A departure from the cost basis of pricing the inventory is required when the utility of the goods is no longer as great as its cost. Where there is evidence that the utility of goods, in their disposal in the ordinary course of business, will be less than cost, whether due to physical deterioration, obsolescence, changes in price levels, or other causes, the difference should be recognized as a loss of the current period. This is generally accomplished by stating such goods at a lower level commonly designated as market.³³

When the lower of cost or market rule is applied to inventories, the term "market" refers to replacement cost. However, the present rule states in Chapter 4 of ARS 43 that two limits are placed on replacement cost. This is done by providing that losses calculated under the rule shall not result in carrying over an inventory amount that (1) exceeds net realizable value or (2) is lower than net realizable value less a normal profit margin. This in effect places an upper and a lower limit on replacement cost. The term net realizable value is defined as the estimated selling price under ordinary conditions less reasonably predictable completion and disposal costs. The effect desired to be obtained by application of these limits is the stating of the inventory at the residual usefulness or utility to the enterprise. The rule is intended to be a guide and not a literal rule. ARB 43 stresses that judgment must be exercised in the application of the rule and no loss should be recognized

They support their recommendation as follows:

unless it is clearly indicated.³⁴

There are no significant questions as to the meaning of costs of completion. These are generally considered to be additional costs to be incurred to bring the goods to the point of salability. However, there are significant differences of opinion concerning costs of disposal. Some accountants favor providing only for direct costs of disposal--those which require a specific cash outlay for the disposal of the inventory. These direct costs would be easily identified. Other accountants contend that a full allocation of commercial expenses must be made, so that a true net realizable value is obtained. This will prevent recording losses in future periods from under-allocation of disposal costs. Barden supports the full allocation of commercial expenses, stating that it is the procedure consistent with the net realizable value concept.³⁵

As the rule is now stated, the lower of cost or market concept can be applied to individual items to major categories, or to total inventory. The selection should be made on the basis of which method reflects most clearly the income of the period.

The lower of cost or market rule has been vigorously criticized for many years. Sprouse and Moonitz, in ARS Number 3, state their opposition to the rule. They recommend that the current replacement cost for inventories should be used in all cases, even if it is above acquisition cost. They support their recommendation as follows:

If current replacement cost is objective, definite, verifiable and more useful when it is lower than acquisition cost, it also possesses those attributes when it is greater. By the use of current replacement cost, a change in "utility" is recognized in the period when the change takes place. And inventory items would still be measured at amounts which are below current selling prices by the amount of the operating margin (gross profit).³⁶

Hendriksen agrees with their recommendation, but only for those assets for which the net realizable value cannot be determined with a fair degree of certainty. Hendriksen cites the following reasons for the unacceptability of the lower of cost or market rule: (1) It is inconsistent because it allows a change in the valuation base within the inventory and from period to period. (2) It may produce overstatement of income in future periods. (3) It permits excessive subjectivity in the accounts, since the determination of market is subjective.³⁷

Another objection to the concept is its violation of the historical cost principle. William A. Paton criticized the rule as permitting profit management rather than measurement and that maintaining profits in the future was the management's problem, not the accountant's.³⁸

George D. Bailey came to the defense of the lower of cost or market rule with the argument that the element of profit is inseparable from inventories. He also contended that anything that dislocates the profit flow function of inventory should be accounted for in the period in which it occurs.³⁹

In recent years, the support centers more on the

rule's usefulness in preventing overstatement of utility value, which would occur if historical cost of the inventory items were retained.

A National Accounting Association research study disclosed that 73 out of 74 bankers interviewed were in favor of lower of cost or market, primarily because of the protection from risk that it offered. Also, 68 out of 72 security analysts favored the lower of cost or market rule, stating that income projections must use a conservative base as a starting point.⁴⁰

Barden recommends in ARS Number 13 that losses in the utility value of inventories should be accounted for in the period they occur, and measurement of the loss should be on the basis of net realizable value. He recommends that the term net realizable value be substituted for the term market in the rule. Also, as stated before, he recommends full allocation of commercial costs of disposal when determining net realizable value.

It seems that the arguments for the lower of cost or market rule have, at least up to this point, overcome the arguments against it. The lower of cost or market rule is recognized by the AICPA, the AAA, the SEC and the Institute of Chartered Accountants in England and Wales.⁴¹

¹Eldon S. Hendriksen, Accounting Theory, Revised Edition, (Homewood, Ill.: Richard D. Irwin, Inc., 1970), p. 313.

²Ibid., pp. 335-336.

- ³Ibid., p. 336.
- ⁴American Institute of Certified Public Accountants, APB Accounting Principles, p. 3053.
- ⁵Hendriksen, Accounting Theory, pp. 336-337.
- ⁶Ibid., p. 338.
- ⁷Ibid., p. 339.
- ⁸Glenn L. Johnson and James A. Gentry, Jr., Finney & Miller's Principles of Accounting: Intermediate, 7th Ed. (Englewood Cliffs, N.J.: Prentice-Hall Inc., 1974). p. 279-280.
- ⁹Hendriksen, Accounting Theory, p. 339.
- ¹⁰Ibid.
- ¹¹Barden, Accounting Research Study No. 13, p. 12.
- ¹²Hendriksen, Accounting Theory, pp. 339-340.
- ¹³American Institute of Certified Public Accountants, "LIFO: 'the Deflator'--a Current Review and Analysis," The Tax Advisor, December 1970, cited in The Wall Street Journal, 9 December 1970.
- ¹⁴Barden, Accounting Research Study No. 13, pp. 85-86.
- ¹⁵Hendriksen, Accounting Theory, p. 341.
- ¹⁶Ibid.
- ¹⁷Barden, Accounting Research Study No. 13, pp. 85-87.
- ¹⁸Hendriksen, Accounting Theory, pp. 341-345.
- ¹⁹Ibid.
- ²⁰Johnson and Gentry, Finney & Miller's Principles of Accounting: Intermediate, pp. 335-337.
- ²¹Hendriksen, Accounting Theory, pp. 346-347.
- ²²Ibid., p. 347.
- ²³Johnson and Gentry, Finney & Miller's Principles of Accounting: Intermediate, pp. 323-325.
- ²⁴Hendriksen, Accounting Theory, p. 349.

²⁵Johnson and Gentry, Finney & Miller's Principles of Accounting: Intermediate, p. 331.

²⁶Hendriksen, Accounting Theory, pp. 352-353.

²⁷Ibid., p. 353.

²⁸Barden, Accounting Research Study No. 13, p. 77.

²⁹Ibid., pp. 92-93.

³⁰Ibid., pp. 97-98.

³¹American Institute of Certified Public Accountants, APB Accounting Principles, pp. 3054-3055 & 3058-3059, cited in Barden, Accounting Research Study No. 13, p. 99.

³²Hendriksen, Accounting Theory, pp. 278-279.

³³American Institute of Certified Public Accountants, APB Accounting Principles, pp. 3054-3055.

³⁴Barden, Accounting Research Study No. 13, p. 103.

³⁵Ibid., pp. 112-114.

³⁶Robert T. Sprouse and Maurice Moonitz, "A Tentative Set of Broad Accounting Principles for Business Enterprises," Accounting Research Study No. 3, (New York: AICPA, 1962), p. 31.

³⁷Hendriksen, Accounting Theory, p. 280.

³⁸William A. Paton, "The Cost Approach to Inventories," The Journal of Accountancy, October 1941, pp. 300-307, quoted in Barden, Accounting Research Study No. 13, p. 101.

³⁹George D. Bailey, "Problems of Inventory Pricing," The Journal of Accountancy, August 1941, pp. 143-148, quoted in Barden, Accounting Research Study No. 13, p. 101.

⁴⁰Morton Backer, Financial Reporting for Security Investment and Credit Decisions, (New York: National Association of Accountants, 1970), p. 102, quoted in Barden, Accounting Research Study No. 13, p. 102.

2. Direct labor. All labor obviously related to and expediently traceable to specific products; for example, labor of machine operators and assemblers. Much labor, such as that of material handlers, inspectors, and plant guards is considered indirect labor because of the difficulty or impracticality of tracing such items to specific physical units.

CHAPTER III

3. Factory COSTS ASSIGNED TO PRODUCT is other than direct materials and direct labor. Other costs to describe this category as indirect manufacturing costs.

Elements of Product Cost

Basic Elements

Product costs are those costs which are looked upon as "attaching" or "clinging" to inventory. Product costs are classified as "inventoriable" costs. That is, these costs are carried forward to future periods until the goods to which they relate are sold.¹

Determining product costs for the inventory of a non-manufacturing firm is comparatively simple. The costs include the purchase price and any additional incidental costs necessary to place the goods on the shelf, ready for sale. These costs can readily be determined from invoices, receipts and vouchers.

However, determining product cost for a manufacturing firm becomes quite complex. There are three major elements in the cost of a manufactured product:

1. Direct materials. All materials that are an integral part of the finished good and that may be conveniently assigned to specific physical units; for example, sheet steel and subassemblies. Certain minor materials, such as glue or nails, may be considered either supplies or indirect materials rather than direct materials, because of the impracticality of tracing these items to specific physical units of product.

2. Direct labor. All labor obviously related to and expediently traceable to specific products; for example, labor of machine operators and assemblers. Much labor, such as that of material handlers, janitors, and plant guards is considered indirect labor because of the difficulty or impracticality of tracing such items to specific physical units.
3. Factory overhead. All factory costs other than direct materials and direct labor. Other terms to describe this category include indirect manufacturing costs, factory burden, manufacturing overhead, and manufacturing expenses. There are two major types of factory overhead:
 - a. Variable factory overhead. The two main examples are supplies and most indirect labor. Whether the cost of a specific subcategory of indirect labor is variable or fixed depends on its behavior pattern in a given company.
 - b. Fixed factory overhead. Examples are rent, insurance, property taxes, depreciation and supervisory salaries.²

Accurate cost accounting records must be maintained to accumulate and trace these three elements of cost as the product passes through the stages of production.

Tracing the cost of direct materials and direct labor is almost always facilitated by the existence of some sort of observable cause and effect relationship with the product. Thus, there is no intervening basis for allocation. This is what distinguishes direct costs from indirect costs.³

The tracing of indirect costs (factory overhead) to product is usually not possible or practicable. Therefore, these costs are allocated to product via an intervening allocation basis. A good example of this would be allocating factory overhead on the basis of direct-labor hours. This procedure is called application of overhead, and at various

periods the "applied" overhead is compared to "actual" overhead costs and any difference should theoretically be apportioned to cost of goods sold, work in process and finished goods. Oftentimes in practice, however, it is all placed in cost of goods sold.

Composition of Indirect and Incidental Costs

The composition of indirect manufacturing expenses and additional costs of inventory purchased (manufacturing or non-manufacturing) varies from firm to firm. However, this section will discuss what is usually included in these two areas. Also, a summary of the new IRS regulations, which stipulate which indirect manufacturing expenses require mandatory inclusion in inventory and which are optional, will be presented.

Additional costs of purchasing inventory which are considered inventoriable are such items as import or customs duties, freight or other transportation costs, insurance on the goods during shipment and storage, and costs of storing goods. Also, in some instances, they might include any costs incurred while the goods are undergoing any needed aging process. It is clear that costs such as these are proper additions to the cost of inventory. Varying treatment of them occurs, however, because of the practical difficulty of apportioning some of these costs to particular items. For some costs, such as freight, it may be a simple procedure to allocate the cost of the appropriate item, but for other

costs which may not necessarily be incurred in proportion to the quantity purchased, allocation may become difficult.

These costs may be allocated on a percentage or other appropriate basis, but this may result in inaccuracies. Greater accuracy could be obtained by tracing the costs to the corresponding invoice, but the extra labor and cost incurred do not warrant this slight increase in accuracy. Consequently, if no direct basis of allocation, or a reasonably accurate intervening basis, is available, the costs quite likely will end up as period costs.

Indirect manufacturing expenses may be divided into two components--variable and fixed. The two main examples of variable factory overhead are supplies (glue, nails, etc.) and most forms of indirect labor. Some examples of costs which are usually included in fixed factory overhead are rent on production facilities, insurance, property taxes, depreciation and supervisory salaries.

For federal income tax purposes, the IRS has come out with new regulations on what must be included in indirect production expenses. If the taxpayer's method of costing the inventory is the same for both tax and financial reporting, it is mandatory to include repairs and maintenance, utilities, rent, indirect labor and production supervisory wages (including fringe benefits), indirect materials and supplies, tools and equipment not capitalized, and quality control and inspection costs. These costs are mandatory only to the extent they are related to production.

The IRS also lists certain expenses as optional for inclusion in inventory for taxpayers using comparable inventory costing methods for tax and financial reporting purposes. These optional expenses include officers' salaries which are related to general operations, marketing, advertising and distribution expenses, interest, past service pension costs, research and development costs, losses under Internal Revenue Code Section 165 (which relates, in part, to losses incurred in a trade or business), percentage depletion in excess of cost depletion, depreciation taken for tax purposes in excess of book depreciation, income taxes attributable to income received from the sale of inventory, and general and administrative expenses related to the business as a whole.

If the tax and book methods of costing the inventory do not conform, the IRS has different rules regarding indirect expenses of production. For the "nonconforming" taxpayer, it is mandatory to include depreciation and amortization reported for financial purposes and cost depletion, taxes (even if otherwise deductible under Section 164, which enumerates deductible state, local and foreign taxes), factory administrative expenses and insurance related to production facilities and operations.⁴

As mentioned earlier, the exact composition of indirect manufacturing expenses may vary somewhat from firm to firm. However, essentially there will be no material difference between companies using the "full absorption" costing method.

The "full absorption" method assigns all factory overhead to inventory except for a portion attributable to production facilities not being fully utilized. Very significant differences may arise, though, if the "variable" costing method is used. The "variable" costing method will be discussed in the next section of this chapter.

Other Considerations

Inventory valuation involves factors other than cost-flow methods, lower of cost or market, full absorption costing or variable costing, and product cost composition. Two of these additional factors which potentially could misstate inventory are errors and unrealized intercompany profit.

Errors in inventory can result from such things as poor counting, theft, destruction, inadequate recording of freight charges and inappropriate cut-off procedures. Care must be exercised to insure that all procedures are carried out correctly. For instance, an examination of the cut-off procedure for purchases must determine whether any purchases are recorded in the wrong period. Purchases are generally included in inventory when title passes, so there may be goods which were sent F.O.B. shipper that have not yet been received. These goods should be included in inventory as of the time they left the shipper.

Other errors may result from mishandling inventoriable costs. The exclusion of such items as buyer-absorbed freight charges constitutes an accounting error.

Proper treatment must also be given to unrealized intercompany profit. Intercompany profit results when a company sells an affiliated company its goods at a price above cost. Affiliation can be taken to mean both the parent-subsidary relationship and an investor-investee relationship where one company has significant control of the other. This significant control is usually considered present if 20% or more of the investee's stock is owned by the investor. When some of the goods purchased from an affiliated company still remain in inventory at the end of the year, unrealized intercompany profit exists in the inventory. This unrealized intercompany profit must be eliminated from inventory in order to present the inventory at cost.

Variable Costing

As mentioned above, the full absorption method of inventory costing assigns all factory overhead costs to inventory except for a portion attributable to unutilized production facilities. An alternative method of costing inventories is variable or direct costing. Under variable costing, factory overhead is divided into its variable and fixed components, and only the variable manufacturing costs are assigned to inventory. The fixed element of factory overhead becomes period expense, just like administrative costs. Thus, absorption costing treats fixed manufacturing overhead as part of inventory cost, while variable costing expenses fixed manufacturing overhead as a period cost.

The advantages of variable costing for internal reporting are widely recognized. Variable costing permits management to use a contribution margin approach to decision making and planning. Variable manufacturing, selling, administrative and general costs are deducted from revenue to determine the contribution margin available to cover fixed expenses. Thus, placing greater emphasis on cost behavior patterns results in more useful information. A better interpretation can be made of the impact of changes in volume on net income. Contribution margins can be used to evaluate alternative courses of action involving price reductions, special discounts, special sales or special advertising programs. The relevant costs to look at are the incremental variable costs and these are readily pinpointed by variable costing.

Supporters of variable costing claim that absorption costing fails to recognize that capacity costs do not vary with the number of units produced. Hence, they cannot be identified with particular units of a specific period.⁵

Also, variable costing advocates take a different approach to the definition of an asset. Their concept of an asset is that it represents costs that are beneficial to future operations, or costs that have service potential. They maintain that fixed factory overhead does not possess those characteristics. If a cost does not favorably change future revenues and costs, it should be expensed.

Proponents of variable costing argue that fixed

factory overhead is a cost which must be incurred regardless of the volume of output. Therefore, fixed factory overhead is not related to particular units of product. Full absorption costers, on the other hand, maintain that the sole purpose for incurring the fixed manufacturing costs is to furnish capacity for production. They argue that these fixed costs of capacity should be allocated to the output of that capacity.

Some supporters of variable costing have taken a modified approach to their method recently. They recommend that short-run capacity (fixed) costs be allocated to inventory, along with the variable costs. Thus, only the long-run capacity costs would be expensed. Any costs identifiable with a specific year represent short-run costs, while those costs identifiable with longer periods are long-run costs. The long-run costs are not related to a specific year's output and any allocation would be arbitrary; therefore, they should be expensed.⁶

While recognizing variable costing's usefulness for internal purposes, the accounting profession has not accepted it for external reporting purposes. Statement 3 in Chapter 4 of ARB 43 states: "It should also be recognized that the exclusion of all overheads from inventory costs does not constitute an accepted accounting procedure."⁷ Direct costers alleged that the statement, "exclusion of all overheads," meant that it was acceptable to exclude some overheads. However, Maurice Moonitz, who was the Director of

Accounting Research for the AICPA at that time, stated that nothing in the Bulletin should be construed as supporting variable costing. He further stated that there was no doubt that the committee was opposed to variable costing. Also, APB Statement 4 indicates that fixed costs, such as depreciation of plant, should be allocated to product.⁸

The service potential concept of an asset advanced as support for variable costing must be rejected because it conflicts with generally accepted accounting principles. Further, it is illogical to assume that the costs of occupancy and use of production facilities are not related to the goods produced. Fixed costs must be allocated to product in order to achieve a proper matching of costs and revenue.⁹ For these reasons, the use of variable costing in external financial reports is unacceptable under the present generally accepted accounting principles. Furthermore, the Internal Revenue Service has adopted new regulations which stipulate that manufacturers must use the full absorption method of costing inventories for tax purposes. The IRS regulations do, however, allow use of a "modified" full absorption method, which permits exclusion of, at the taxpayer's election, five items of cost. These items are depreciation and depletion, employee benefits, officers' salaries, general and administrative expenses, and certain taxes.¹⁰

So, as far as inventory valuation is concerned, variable costing is unacceptable. It appears that variable

costing will be relegated exclusively to use by management in making decisions.

¹Charles T. Horngren, Cost Accounting: A Managerial Emphasis, 3rd Ed. (Englewood Cliffs, N.J. : Prentice-Hall, Inc., 1972), p. 31.

²Ibid., p. 28.

³Ibid., pp. 31-32.

⁴Robert Peterson, "How to Work With The New Inventory Regulations," The Practical Accountant, July-August 1974, pp. 61-62.

⁵Barden, Accounting Research Study No. 13, p. 67.

⁶Ibid., p. 68.

⁷American Institute of Certified Public Accountants, APB Accounting Principles, paragraph 5121.05, cited in Barden, Accounting Research Study No. 13, pp. 66-67.

⁸American Institute of Certified Public Accountants, APB Accounting Principles, paragraphs 1026.23 & 1027.10.

⁹Barden, Accounting Research Study No. 13, p. 70.

¹⁰Meyer, "A Basic Approach to Inventory Valuation: A Bird's Eye View," p. 56.

ing, it is just good business sense to save taxes when possible.

Very dramatic examples of the benefits of the LIFO method can be found. Allegheny Ludlum Industries reduced its taxes by \$6 million by using LIFO from 1949-1969. Also, Swift & Co. reduced its taxes nearly \$7 million in 1965 alone.¹

Recently, many people have proclaimed the superiority of LIFO over FIFO under inflationary conditions. They contend that despite its artificial cost-flow basis, LIFO is the best method from the net income measurement viewpoint. Many major accounting firms have published recent articles explaining why they support LIFO adoption under present conditions. The FIFO method has been strongly criticized because of its effect of including price increases of inventory in net income. Some of the strongest criticism has come from the Securities and Exchange Commission (SEC). The following opinion concerning inventory valuation during highly inflationary periods was presented in Accounting Series Release No. 151:

Under such conditions the usefulness of the traditional accounting measurement model based on historical cost is significantly reduced. The process of matching costs against revenues is less likely to produce meaningful economic information if the costs were incurred at a time when the price level associated with such goods and services differed significantly from that at the time when revenues were realized.²

The SEC said that a continuation of the present inflationary trends may eventually necessitate new inventory pricing procedures, but that it is not recommending any alternatives

yet. The Commission recognized that the issue must be thoroughly investigated by the Financial Accounting Standards Board before any recommendations can be made. However, the SEC also stated that registrants could not just ignore the impact of changes in prices. The SEC discussed the impact of price changes in this excerpt from ASR No. 151:

The most significant and immediate impact of price fluctuations on financial statements is normally felt in cost of goods sold in the income statement. In periods of rising prices, historical cost methods result in the inclusion of "inventory profits" in reported earnings. "Inventory profit" results from holding inventories during a period of rising inventory costs and is measured by the difference between the historical cost of an item and its replacement cost at the time it is sold. Different methods of accounting for inventories can affect the degree to which "inventory profits" are included and identifiable in current income, but no method based on historical cost eliminates or discloses this "profit" explicitly. Such profits do not reflect an increase in the economic earning power of a business and they are not normally repeatable in the absence of continued price-level increase.³

The SEC further stated that where these "inventory profits" are material, disclosure of their impact on reported earnings and the trend of earnings must be made to investors who may make decisions regarding the earnings of the investee. The investor must be adequately informed as to the source and replicability of earnings.⁴

Although ASR No. 151 clearly criticizes all historical cost methods of pricing inventories, it bases this opinion on the wide spread between historical costs and current replacement costs. Well, the author contends that this is principally a criticism applicable to FIFO, since LIFO oftentimes will be very close to current replacement cost,

depending on the timing of purchases. Thus, LIFO results in the elimination of nearly all of these "inventory profits." Therefore, LIFO would be a good method of solving the "inventory profits" problem.

Just how significant is this "inventory profits" problem? As stated before, a study cited by The Wall Street Journal determined that corporate profits in the United States would have been \$48.4 billion less between 1945 and 1970 if the effects of inflation in inventory prices were excluded.⁵ This figure alone is shocking. However, a more recent article in The Wall Street Journal reflected the enormous effect of rampant inflation on inventory profits. This article stated that 1974 corporate earnings would have been \$35.2 billion less if "inventory profits" had been eliminated--\$35.2 billion of inventory profits in one year!⁶ When one considers the above facts, it is readily apparent why there has been so much criticism of FIFO. FIFO just doesn't meet the objectives of fair presentation and adequate disclosure in financial statements.

Many types of companies could benefit from the use of LIFO. However, as the SEC warned in ASR No. 151, companies must analyze the relationship of costs of inventory to the selling prices. If the selling price rises immediately after cost increases, then their reported net income will be increased by "inventory profits." If the selling price increases lag behind cost increases, the "inventory profits" are offset and the net inflation effect on reported earnings could become negative.⁷

A study published in The Harvard Business Review disclosed that seven industries are strongly sensitive to price increases. These industries are tobacco, textiles, apparel, leather, furniture and fixtures, electrical machinery, and nonelectrical machinery. The results obtained by the study were identical to the results of a similar study conducted 20 years ago. That study indicated that the same seven industries were shown to be strongly sensitive to price increases.⁸ These industries, and numerous other industries, are ideally suited for the LIFO method of inventory pricing. Their reported earnings would be more realistic under LIFO and they would enjoy huge tax savings.

In view of the advantages of LIFO, why haven't more companies switched to LIFO? One reason could be the complexity of applying LIFO. Industries with highly stylized inventories may encounter considerable difficulty in applying LIFO. Another reason may be that it is difficult to justify the change to stockholders, the independent accountants, and the IRS. But, perhaps the primary reason that a mass change-over to the LIFO method is not occurring is the fact that lower earnings will be reported to stockholders and creditors. Lower reported earnings may reduce the market value of the company's securities. Also, these lower earnings might reduce the availability of credit for the firm. Allegheny Ludlum considered this reason so important that it switched back to the average cost method in 1970, despite its \$6 million in tax savings over the prior 20 years, which, incidentally,

Perhaps the present popularity of LIFO will continue, and result in the recognition of LIFO as being superior to FIFO in the measurement of income. One national accounting firm partner said, "No matter what the economic picture, LIFO offers a more meaningful match of income and expense."¹⁰ It is impossible to predict how widely used the LIFO method will be in the future, but, considering the accounting profession's emphasis on income measurement, the LIFO method seems to be the most appropriate method available.

¹Ronald M. Copeland, Joseph F. Wojdak, and John K. Shank, "Use LIFO to Offset Inflation," The Harvard Business Review, May-June 1971, p. 93.

²Accounting Series Release No. 151, Federal Securities and Law Reporter, Volume 5 (Chicago: Commerce Clearing House, Inc., 1975), p. 62,390.

³Ibid.

⁴Ibid., p. 62,391.

⁵American Institute of Certified Public Accountants, "LIFO: 'the Deflator'--A Current Review & Analysis," cited in The Wall Street Journal, 9 December 1970.

⁶The Wall Street Journal, 21 March 1975.

⁷Accounting Series Release No. 151, p. 62,391.

⁸Copeland, Wojdak, and Shank, "Use LIFO to Offset Inflation," p. 94.

⁹Ibid., pp. 98-99.

¹⁰The Wall Street Journal, 20 March 1975.

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