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Valuation of Inventories*

By W. A. PATON

It is a commonplace to say that in the case of almost any business enterprise the valuation of the inventory is an extremely significant part of the work underlying the preparation of the financial statements. The influence of the closing inventory balance upon the exhibits of net income and financial condition is of such consequence as to call for the most searching scrutiny of inventory practices and an insistence upon the use of rational and accurate principles and procedures. Particularly in these days of serious tax levies upon incomes and profits has the entire inventory process become a matter of the utmost importance to all concerned. The business man can no longer be satisfied with an inventory calculated by the cubic yard, for example, a method avowedly favored by a friend of mine in the book business. And certainly in present circumstances the accountant cannot possibly justify himself in a procedure which permits hours of time to be devoted to the finding and correction of small clerical errors in the purchases account, for example, and fails to provide for adequate attention to an inventory valuation running into six or seven figures.

I think all will agree that the problem of pricing the inventory has not yet been adequately settled. Any one at all familiar with actual conditions must admit that the inventory is usually the most dubious figure in the financial statement. It may look very precise—for example, \$117,632.48—but it usually covers a multitude of sins. Frequently the entire process of taking and pricing is full of juggling and guess-work and, to cap the climax, a thoroughly unreasonable theory or scheme of valuation may be employed. In part, I believe, the responsibility for this situation may be charged to accountants and others who in constructing and passing upon the accounting statements have either ignored the problem of valuation or have contented themselves with a nominal advocacy of arbitrary and improper valuation devices. It seems clear that the fundamental purposes underlying the determination of the inventory have not been sufficiently emphasized; the assumptions and implications involved in the various methods and

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principles which are employed have not been fully perceived and assayed; and undoubtedly too much effort has been expended in endeavoring to work out some universal formula or rule, some A B C of valuation, which might be safely utilized in every situation.

May I interpolate here a brief statement with respect to the accountant's relation to valuation in general? The crux of accounting theory and accounting practice, it seems to me, is valuation. This need not mean that the accountant is obliged to study intimately the underlying laws governing the determination of market prices. His is a specific and concrete task. The problem facing the accountant is that of periodic revaluation—that is, it is his business to register the flow of values into the particular business enterprise and to follow these values as, attaching to manifold structures, commodities, services and rights, they become affected by the business process and all attendant circumstances. The allocation of the value data of the particular enterprise to particular periods of time in terms of the essential statements, income-sheet and balance-sheet, is the essence of accounting, and this involves revaluation at almost every point.

I realize that some would challenge the validity of the implication that the accountant must actually determine values. It might perhaps be urged that this is the function of the engineer, the manager or the owner. This is, of course, an unsettled question. Nevertheless it seems to me that in substantiating the proposition that he is something more than a bookkeeper, something more than a recorder, classifier and checker of routine business transactions, it is precisely in the field of valuation that the accountant finds one of his big opportunities. The revaluation of assets for the purpose of discovering rational income and balance-sheet figures is a task lying distinctly within the province of the accountant. He cannot draw a single conclusion of fundamental significance without valuation. And, further, the process of valuation is undertaken primarily for the purpose of disclosing the very figures the accountant is endeavoring to report. Can it not reasonably be said, then, that the actual work of valuation, at least in its critical aspects, falls within the realm of the accountant's activities?

It is not intended to suggest that to be truly successful the accountant must of necessity be an appraiser, must know all about

the service lives of various classes of fixed assets, must be an adept in weighing or enumerating stock on hand. By all means let the engineer or someone else do as much of this work as he will. (Even the counting of cash shortly becomes rather monotonous when the funds belong to someone other than the counter.) The accountant's valuation work lies primarily in planning the depreciation policy—recognizing all its assumptions and implications with reference to current income, present value, liquid assets, replacement expedients, undivided profits, etc.; in supervising inventory methods and in developing rational devices and rules for valuing merchandise and materials; in determining the costs of work in process and finished stock on hand; in computing contractual accruals and preserving the distinction between income and capital in the case of bonds and other securities; in establishing the immediate value of receivables; in gauging the significance of goodwill and other intangibles.

But I must return to the particular phase of valuation which is supposed to constitute the subject of this paper. And let me hasten to limit my topic still further. The treatment of shopwear, obsolescence and related matters will be ignored. There will be no consideration of the complexities of costing to obtain work-in-process and other manufacturers' inventories. All reference to the serious complication introduced by the changing value of money will be avoided. Instead, attention will be directed to a few selected theories and devices for valuing or pricing stock on hand; and an attempt will be made to indicate the extent to which each has legitimate application. In particular I wish to venture a criticism of the familiar rule, "cost or market, whichever is lower."

The acute stage in the inventory process is pricing or valuation, and it naturally appears after the sheets covering the physical inventory have been prepared. The question then arises: How shall these physical data be transmuted into value terms, into dollars and cents? The first step in its solution in any case would seem to be the adoption of a fundamental point of view, a basis or a starting-point from which to proceed. Among the welter of theories and practices, it seems to me that three main possibilities may be distinguished: (1) actual cost; (2) replacement cost; and (3) selling price. I shall consider each of these in turn.

II.

In the first place precisely what is the significance of actual cost as a basis for the valuation of merchandise on hand? Is it a satisfactory test of value, in view of the various purposes involved? Does actual cost furnish a reasonable foundation upon which to exhibit immediate financial position or from which to compute periodic net income?

Doubtless most of us would agree that actual cost, as an indication of financial condition on a specific date, is not an entirely satisfactory basis for valuation, even with respect to current assets. Price movements between purchase and inventory dates are quite likely to be so striking as to render cost a somewhat dubious representation of true economic standing. Cost may give either too high or too low a figure. But this objection to actual cost as a basis for inventory valuation is not decisive, especially in certain fields. The balance-sheet, it must be remembered, is bound to include figures that involve judgments to some degree. It is only ideally that this statement exhibits the true financial condition on a specific date. One might indeed go further and say that since present status in the ultimate sense is inevitably connected with future events no precise statistical representation of such status is even conceivable. At any rate cost of current goods on hand can hardly be given wholesale condemnation as a balance-sheet figure. This is particularly true in certain retail activities where selling prices respond slowly to new buying prices.

No doubt there is a grain of truth in the popular notion that the merchant, in the face of declining buying prices, will make a desperate effort to market stock on hand before seriously cutting selling prices. Similarly, in the case of an advance, goods are not always marked up until the old stock is largely worked out. In cases where lack of competition and general business inertia make this possible, actual cost evidently has a special validity as an expression of financial condition. Further, it should be noted that the inventory does not always constitute a very large percentage of the asset total; and in such circumstances any fairly reasonable scheme for valuing the inventory would not result in a serious distortion of balance-sheet figures. Still further, it should not be forgotten that the balance-sheet is usually prepared as an exhibit of going-concern values rather than liquidation values. This last point requires a word of emphasis. In general—and notwith-

standing statements by accountants and textbooks on auditing to the contrary—the balance-sheet is not prepared for the sole purpose of presenting it to a banker from whom the management is seeking a loan. It is a statement designed primarily for the guidance of the immediate management and the information of the investor; and rules of valuation for balance-sheet purposes should be adopted with this in mind.

Let us turn now to a consideration of the propriety of the actual cost basis for valuing inventory with reference to its effect upon the income sheet. From this standpoint actual cost has one very substantial argument in its favor: it is the only valuation plan by which the computation of income may be restricted exclusively to sale transactions. In other words, it is the only basis for the valuation of inventories which is consistent with the use of the sale as the exclusive criterion of revenue. That is, the accountant who insists that the sale is the proper evidence of income cannot reasonably support any basis for the valuation of inventories other than actual literal cost. This argument, of course, is especially important in the trading field. In the nature of the case, selling is the dominant activity of the wholesaler, retailer or other trader. Is not the sale, then, the best gauge of income in this field? Is not the sale the significant, climactic transaction for the merchant? Some rational, systematic plan for the periodic calculation of income is needed; and in this field it would seem that the succession of sale events furnishes a guide to the income conclusion that may well be rigidly followed. Especially is there reason for this position in view of the fact that in the case of the trader the importance of the closing inventory as an element in the computation of a rational income figure may be said to outweigh its significance as an evidence of present value for balance-sheet purposes.

But even if we assume that actual cost is a satisfactory general basis for the valuation of goods on hand under certain conditions there remains the problem of the concrete application of this principle. Here serious, indeed well-nigh insurmountable, technical difficulties are discovered at once. Unless all the goods on hand in a given case have been acquired at a single cost price—a condition seldom realized for the yearly period, especially if the influence of the initial inventory be considered—the actual cost of the stock at the end of the accounting period can only be determined where it is possible to identify every individual item of

the inventory in terms of particular shipments and lots acquired and the invoices attaching thereto. In other words, this basis for pricing goods on hand cannot be literally applied in practice unless it is feasible by means of a system of marking, storing or otherwise to preserve the actual cost of every unit.

In a great many cases, it is perhaps needless to say, this is impossible or inexpedient. The manufacturer, for example, who buys hundreds or even thousands of classes of materials and supplies at varying prices and in perhaps still more numerous lots finds it almost out of the question to discover the actual cost of goods on hand at a particular time; and the trader very frequently finds himself in a like position. Indeed, the precise determination of the actual cost of the inventory following a period of severe price fluctuations would be an exceedingly tedious and expensive task even in the most favorable circumstances.

As a result of this situation all sorts of expedients are adopted in practice. I think I am safe in saying that more frequently than otherwise the inventory at cost, so-called, scarcely approximates actual, literal cost. An investigation of inventory practices undertaken some time ago by the income-tax unit disclosed the fact that although many taxpayers nominally prepare inventories on a cost basis this does not indicate the use of any one distinct principle. A so-called "cost" inventory may be the result of any one of numerous interpretations, schemes and devices. Often the figure used is simply a guess, an intuitional cost, prepared by an owner or manager who is relying upon his general impressions and experience. More or less arbitrary adjustments are common. If the preliminary calculation does not result in a figure which quite suits the fancy of some officer who has a weather-eye open for the amount of the federal-tax obligation, for example, a revision may be instituted based upon some other method or rule which results in a paring off of perhaps many thousands of dollars, the concluding figure, nevertheless, being labeled "cost."

"Let's put this stuff in at forty cents," says the owner or other person in charge. Thus the problem is too often solved. By sheer accident an amount in the neighborhood of actual cost may be fixed in this manner. It is more probable, however, that a serious element of error will be involved. Especially is this likely to be the case if the inventory is composed of remnants of many lots, acquired at a considerable range of prices, and includes some stock

which has been carried over from preceding periods. A mere estimate, in such circumstances, will probably be so strongly tinctured by impressions derived from current quotations as to give a quite inaccurate representation of actual cost.

III.

Let us now turn for a few moments to a consideration of some of the more or less systematic devices and expedients designed to discover approximate cost (some reasonable substitute for actual cost) which are found in practice.

First may be mentioned the arithmetical average of invoice prices. The use of such a value, in lieu of actual cost, is by no means uncommon. In some cases this substitute figure is rather carefully worked out by making use of the prices of all lots purchased during the period, with the price used in valuing the last preceding inventory included. In other cases the calculation is restricted to the prices of purchases for the period. In others the prices of a few supposedly representative lots are averaged. In some instances the computation is so carelessly handled that the result is again little more than an estimate. However the calculation is made, all such interpretations of actual cost can be criticized on the ground that they ignore the variation in the amounts of the different shipments received and hence are almost sure to contain a dangerous element of error. In other words, they are based upon the assumption that all lots acquired currently are of the same amount and that the initial inventory—if its influence is recognized at all—is just the equivalent of one of these equal lots. This is evidently quite contrary to the actual facts.

This brings us to a second device or, rather, group of devices. In many cases a cost figure to be applied to stock on hand is worked out by some sort of a weighted-average method. The most reasonable of these schemes involves a combination of initial inventory and total purchases with respect to both quantity and value. It is sometimes worked out by having both quantity and value columns on the ledger page. The periodic value total divided by the quantity total gives the weighted average cost per unit to be applied to the quantity on hand in determining the inventory value. This plan is based upon the assumption that the goods utilized, consigned or sold are taken from the various lots received in exact proportion to the initial amounts of these lots or,

in other words, that goods on hand are composed of the different shipments acquired (including the initial inventory as the first lot) in proportion to the quantities thereof; and its accuracy as a device for calculating actual cost evidently depends upon the degree of validity attaching to these hypotheses. As a matter of fact we know that this postulate is quite unsupported by actual conditions in a great majority of cases. Goods are not utilized nor sold in precise proportion to the quantities in the various lots received. Indeed, a movement of goods in exact conformity with this assumption would be virtually impossible, as it would mean, strictly speaking, that no shipment or lot could ever be completely exhausted or closed out. Such a situation would be somewhat analogous to the pancake-batter jar in the college boarding house: at least a trace of all preceding lots is included in each inventory.

There are many variations of this plan. In some cases a weighted average with respect to a few large lots is taken. In others the effect of the initial inventory is ignored, and the calculation is confined to current acquisitions. The so-called "moving" average has been advocated and has been employed in some cases. This device involves the use of a period for the cost computation which is not conterminous with the current accounting period, and both very long and very short periods have been proposed.

The base-cost scheme of pricing, strongly urged by several large corporations and definitely repudiated by the income-tax unit, gives a kind of long-term or standard cost. An officer of one company argued that the proper cost to be employed in valuing the minimum or "cushion" inventory of standard raw materials was a normal cost determined by taking a rough average of prices over a period of twenty years or more. In other cases the average price for the two or three years immediately preceding the war period was urged as the cost which should be applied to the standard volume of inventory. All such schemes have been disallowed by the bureau of internal revenue. Even the systematic weighted-average method, it may be noted, has been once rejected as a general device for tax purposes, although a later ruling gave the tobacco companies permission to continue their use of this method and it is quite probable that it may be given a broader endorsement under the more liberal terms of article 1583 of regulations 62, recently issued.

Another plan for the determination of an inventory value on a cost basis—a plan which has been widely adopted and is endorsed by the treasury department for use in cases where it is not feasible to discover actual literal cost—is based upon the assumption that goods utilized or sold are always taken from the oldest in stock or, in other words, that the goods on hand consist of the most recently acquired lots. To ascertain inventory value by this method it would be necessary simply to arrange invoices in a chronological sequence and, beginning with the latest, take off both quantity and value figures until a quantity total equivalent to the physical inventory had been obtained. The corresponding value total would constitute the value inventory. (In most cases, of course, it would be necessary to divide the amounts of one invoice and include only the appropriate parts.) If recent purchases had been at all heavy this would commonly mean that the invoices of only a few weeks would need to be examined to obtain the inventory figure. In some cases it would mean the use of essentially the latest cost. Where the turnover rate was low, recent purchases light and price fluctuations substantial, on the other hand, the inventory value resulting from this plan would bear little relationship to current values.

It is clear that such a valuation procedure will not ordinarily give results which jibe with the actual physical facts. Goods consumed or sold are often taken from new stock rather than old; and probably in no case does withdrawal follow order of receipt exactly. Yet this plan is strongly supported by economic principles. Unquestionably it is only relatively recent prices that are of any interest to the immediate management. In general the only cost exercising any marked effect upon selling price in a competitive market is the immediately potential cost. Hence a principle of valuation which gives results which are not widely inconsistent with current market conditions is much to be desired.

This method of pricing inventory deserves serious consideration by business managements and accountants. It may be recommended for three principal reasons. First, by this means the inventory value is drawn from the actual records in a simple and systematic way, all guessing and uncertainty being eliminated. Second, as already stated the method is at least roughly in harmony with sound economic and business principles in that the inventory value so derived is commonly a fair representation of cur-

rent commercial values. Third, it is based upon a definite and rational assumption with respect to the movement of goods through the business enterprise, an assumption which might well be validated as closely as possible as a matter of good business. (In other words, in general it would pay the merchant to close out the older stock first.)

With this brief statement of the common interpretations of cost as a basis we may now appraise the validity of this general principle of valuing inventory. In the first place, it should be roundly emphasized that actual, literal cost has a limited application in practice and that most "cost" inventories, so-called, are based upon cost in a mainly nominal sense. In the second place, it must be remembered that the various schemes and devices employed are almost certain to give quite divergent results. In other words, "cost" inventories in practice are far from homogeneous; the nature of the amount finally obtained in any case will depend essentially upon the method used to obtain cost. In these circumstances it would seem reasonable to conclude that actual cost is a fairly satisfactory basis for valuing inventories in the trading field, provided it is feasible, by means of price marks or some other system of identification, to ascertain this value. Further, where it is not expedient to determine actual cost the most satisfactory substitute is the cost of the most recent acquisitions up to the amount of the physical inventory. In view of the fact that the task of pricing an inventory on an actual cost basis is likely to be very tedious in any case one might urge, as a practical matter, that this substitute is to be preferred even where it is possible to determine actual cost.

IV.

Replacement cost is the second main basis for the valuation of inventories which was mentioned above. This principle of valuation, I believe, deserves more favorable consideration than it has thus far received. It is not a strictly orthodox principle, many accountants considering it to be quite unsound from a practical standpoint. The main objection seems to be that the consistent use of replacement cost as a basis for inventory valuation is bound to mean—in a period of rising prices—the recognition of income prior to actual sale—unrealized profit, so-called. It should be insisted, however, that this single objection does not justify a complete repudiation of replacement cost as a useful valuation expe-

dient. Business conditions are highly complex and varied; and there are some situations in which this basis for valuation is distinctly applicable. It seems to me that the proposition that such a scheme may involve the recognition of a minor income element is largely pointless. This objection, so often urged by accountants, is an illustration of the fact that supposedly practical men are often prone to out-theorize the academicians. The inventory is only one element in the income calculation; some consistent and reasonable plan for valuing it must be worked out; the use of replacement cost in certain cases would not mean the repudiation of the sale as the primary income transaction.

Three principal points may be urged in support of this theory of valuation as applied to inventories. First, it is more logical than the actual-cost plan—or most of the proposed substitutes therefor—since it avoids attaching different prices to identical goods existing concurrently in a particular situation, and thus does not violate the law of single price. Second, it conforms exactly to the theory already mentioned that replacement cost is the only cost having significant effect upon selling prices in the long run and hence is the only cost having real meaning for the management. Third, it can be put into effect with a minimum of clerical effort; it gives the simplest possible method of pricing the inventory. A fourth important reason might be added, namely, that replacement cost is undoubtedly the most satisfactory evidence of financial condition for balance-sheet purposes.

Of these arguments the second and third are doubtless the more important. In all business situations in which selling prices move freely in response to changing cost prices—and this is especially true in wholesaling and in certain manufacturing—values based upon current costs are certainly more significant to the management than values which represent actual costs, provided, of course, that the two happen to be markedly divergent. In such circumstances replacement cost undoubtedly is the best expression of the significance of the inventory from the operating standpoint; it gives the more reasonable indication of the effective working capital tied up in the inventory. Consequently more rational conclusions may be drawn from current replacement costs than from earlier cost figures in planning production and sales policies. There is a good deal of evidence that even in retailing selling prices fluctuate in closer conformity to current replacement costs than

popular opinion admits. In many lines any material reduction in wholesale prices forces an immediate and more or less corresponding drop in retail prices; and an advance in wholesale prices, similarly, results in an immediate mark-up by the retailer.

From a practical standpoint, however, the simplicity of replacement cost as a basis for pricing inventory is probably the principal advantage inhering in this plan. Replacement cost, as a rule, is a definite and unmistakable figure. One cannot honestly give it all sorts of interpretations. The latest trustworthy quotation from the regular source of supply in terms of the quantities usually purchased is the proper replacement cost to use. Multiplying this price with the physical inventory gives the value inventory. Compare this process with that which involves the listing of virtually every item in every class throughout the entire inventory and the calculation of the grand total. It would seem reasonable to suggest that in the absence of fundamental and conclusive objections the saving of clerical labor alone would justify the adoption of replacement cost as opposed to actual cost.

This clerical simplicity is most marked, of course, with standard merchandise, materials and supplies. To determine the cost of replacement of semi-finished or completed goods in the hands of the fabricator is more troublesome. As far as the materials element is concerned, the replacement cost of work in process or finished stock can be readily calculated by applying the latest standard quotations to physical quantities determined from specifications or otherwise. The materials replacement cost of such goods, indeed, can be ascertained far more readily than the actual cost in materials because of the difficulty already mentioned of identifying materials put in process in terms of specific invoices. Labor cost of replacement could also be readily ascertained if the subsidiary records required to determine actual cost were available. With respect to overhead or burden, however, the task would be more difficult and would, at certain points, involve rather fantastic ideas and procedures. The plant and equipment depreciation element in burden, for example, could be calculated from a cost of replacement standpoint only on the basis of an estimated cost of replacing these fixed assets themselves. Perhaps this would give an ideal valuation; but most of us would agree that it would be impracticable in any case to push the application of replacement cost figures to this extreme.

It should be noted that the use of replacement cost would commonly not give results markedly divergent from those obtained by using cost interpreted as the cost of the most recent acquisitions up to the amount of the inventory. This point is worthy of a sharp emphasis in view of the enthusiasm with which some accountants reject replacement cost as a legitimate valuation principle and yet are quite ready to accept an interpretation of actual cost which amounts to about the same thing. The difference between these two methods is evidently largely nominal. One involves adherence to recent invoice records; the other consists of the application of the latest legitimate quotation. Usually the results of the two procedures will be roughly the same.

It may be urged that the accountant, in deference to current prejudices, should adopt the cost of the most recent purchases up to the amount of the inventory as a closing valuation rather than its more logical blood-brother, the cost of replacing the stock on hand; and there is little objection to this position. To a degree it is a matter of Tweedledum and Tweedledee. But the propriety of the other principle should also be admitted. Why need the advocacy of a qualified use of replacement cost be counted a heresy? In the case of standard raw materials and supplies in the hands of the manufacturer at least, the use of this rational and easily applied principle would seem to be highly sane and conservative. Here it is seldom feasible to discover exact cost. Further, since a more or less complex process intervenes between raw materials and sales of finished stock in the case of the manufacturer, a computation of income exclusively and precisely in terms of sales need not be insisted upon in such cases. It is clear, also, that replacement cost is a thoroughly sound basis for valuing the inventory of a dealer in securities, a fact which has just been recognized by the bureau of internal revenue in regulations 62.

V.

I wish now to discuss briefly the popular valuation expedient which is a combination of the two main principles which I have just examined. This is the use of actual cost or replacement cost, whichever is lower. This rule was sponsored as a universal valuation formula by a committee of accountants reporting to the British board of inland revenue in 1917; it has been adopted by our own bureau of internal revenue as one of two main alterna-

tives; it has been strongly if blindly supported in various textbooks, trade journals and other publications; and many professional accountants endorse it. Nevertheless, I believe that this valuation scheme is thoroughly unreasonable and should be discredited by accountants for reasons which are conclusive from both theoretical and practical points of view.

In the first place, the literal, precise application of this rule is almost impossible because of the clerical difficulties and amount of work required. Just think what the thing involves! To begin with, it means—if it is to be strictly interpreted—that the actual cost of each item on hand must first be determined. This, as has been indicated, is often an impossible or impracticable task in itself and in any case involves almost endless labor. Next the replacement cost of each class must be ascertained. This is more easily done; but it should be emphasized that such technical difficulties as do beset the cost of replacement method have all to be dealt with here. (This the opponents of the replacement-cost theory seem always to forget.) And in the case of work in process and finished stock, as was pointed out above, the computation of cost of replacement—especially with respect to the burden element—is by no means a simple task. Finally, the alternative figures for each of the perhaps hundreds or even thousands of classes in the inventory must be compared, the lower of the two must be selected in each case, and this collection of actual costs and replacement costs must be totaled to give the final inventory figure. A more involved and absurd method of pricing could hardly be invented.

Second, and perhaps more important, this rule violates one of the fundamental canons of sound accountancy, namely, consistency. Values ascertained in accordance with this scheme are a hodge-podge. This inconsistency is more serious than a casual examination of the question reveals. When we come to consider the concrete use of this rule in practice it is discovered that it cannot, in the very nature of the case, have much real application in the terms in which it is usually stated. This fact is due to the character of price movements in their effect upon the particular enterprise. In general the statement holds that the prices of virtually all classes of goods found in the particular inventory move in the same direction although perhaps not at the same rate. This means that if replacement cost is seriously below actual cost, for example, with respect to one important class of the inventory

it is very likely to be below cost for all other classes. What, then, must be the actual situation with respect to the use of this combination rule? The answer is clear. The merchant or other business man who is attempting to adhere to the "cost or market, whichever is lower" scheme is really merely vacillating from year to year between actual cost and replacement cost as bases for inventory valuation. In one year he uses actual cost; in the very next period, perhaps, he shifts to replacement cost, and so on. This, it seems clear, is the very antithesis of sound accounting! Surely no one can argue that this sort of valuation procedure results in a rational distribution of income between years!

In view of the treasury department's strong predilection for the proposition that each year must stand on its own bottom, and its explicit espousal of consistency in inventory practices, its admission of "cost or market, whichever is lower" as a valid valuation principle is almost incomprehensible. Consistency, it should be insisted, is probably the primary virtue to be observed in taking inventory (especially for tax purposes). Almost any fairly reasonable rule of valuation, if steadily adhered to, will result in at least a moderately satisfactory series of income and balance-sheet exhibits. It is the shifting from one basis to another that results in an unreasonable distribution of income between years. But to date the treasury department has made it rather easy for the taxpayer to jump from one expedient to another. Take the eleventh hour decisions made in December, 1920, for example, to the effect that any taxpayer could—regardless of his past practice—value his 1920 closing inventory (materials, work in process—including the burden element therein—or salable merchandise) for purposes of his tax return on the basis of the lowest of the three (1) actual cost, (2) replacement cost and (3) selling price (or the appropriate part thereof in the case of unfinished goods). This sort of thing is bound to encourage inconsistent inventory procedures. On the other hand, it should be noted that in the regulations 62 an encouragingly broad and sane attitude has been adopted by the government.

In the third place, the use of actual cost or replacement cost, whichever is lower, in valuing inventories does not insure the restriction of the income calculations to sale transactions; hence this device lacks the main virtue which most of its supporters seem to be attributing to it. It evidently permits the recognition of losses

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unrealized by sale. Further, it allows the recognition of income unrealized by sale in cases where goods have been held for some time and replacement cost, while still below actual cost, has advanced beyond the initial inventory figure.

But, it may be objected, after all this rule is a counsel of conservatism, a valuable expedient in preventing income inflation, excessive dividends, etc. In answer to this I would say that it seems to me that conservatism in the best sense is never assured by inconsistent and unreasonable practices. It would be far more rational to take inventory consistently on either a cost or a cost of replacement basis, a part of the resulting income being ear-marked as a reserve not available for dividend declarations in any year in which this was deemed to be advisable. Conservatism does not demand arbitrary adjustments of legitimate values from the standpoint of the going business. The accountant is not invariably presenting statements of bankrupt concerns. To insist that inventory must be priced on the "cost or market, whichever is lower" plan is an admission of incompetence. Why not be consistently conservative? If the accounts receivable are doubtful, pare them to the bone; if any merchandise on hand is shopworn, obsolete or otherwise impaired, attach liquidation values. But in the case of a live stock in the hands of a sound business enterprise why is it necessary to adopt an arbitrary expedient which violates logic and fundamental canons of good practice?

These considerations (which might, of course, be greatly elaborated) warrant the conclusion, I believe, that the "cost or replacement cost, whichever is lower" rule has no legitimate application in any situation in practice and should certainly be discounted by the public accounting profession.

VI.

The final valuation base mentioned at the beginning of this paper is selling price. Selling value may be used in the inventory in two quite different ways. In the first place this value may be taken as a starting-point in calculating an inventory in terms of what is usually conceded to be a kind of cost value. The treasury department, for example, in T. D. 3058 (incorporated substantially in regulations 62) authorized retail dry-goods dealers to value inventory by means of the so-called retail-price method, a plan which consists essentially of computing cost of stock by de-

ducting a purchase-mark-up percentage from the selling value of goods on hand at the date of the inventory. Manufacturers sometimes make use of the general relationship between periodic burden and sales in computing the burden-cost element in work in process and finished stock. Selling price is also employed as the best starting point available in certain cases where satisfactory costing for labor and materials is impossible or inexpedient. A large manufacturer of pharmaceutical supplies, for example, who uses hundreds of classes of raw materials and turns out over a thousand distinct products, has for years valued inventory of work in process and finished stock by means of a formula designed to reduce selling value by estimated costs yet to be incurred plus estimated profit. The resulting figure is either cost or more or less than cost, depending upon the accuracy with which the estimated profit measures the difference between selling price and actual cost (or what, in the case of incompleting work, will prove to be actual cost). In the case where list selling prices had been recently advanced and the profit percentage used was based on earlier experience, the inventory value so computed would be likely to express cost of replacement more closely than actual cost.

The other possible use of selling price as an inventory base is its direct application to goods on hand—adjustment having been made, of course, for costs yet to be incurred—to obtain the value of the inventory. This rule of valuation is, in general, the accountant's pet aversion because it is held to involve the recognition of anticipated income—unrealized income in the most extreme form. Yet it should be emphasized that any sweeping denunciation of this principle is unwarranted. It has a recognized application in certain fields, and it is quite possible that it should be extended somewhat further. We commonly admit the propriety of this rule in the case of finished goods made to order on a binding contract, and in cases where the fabrication process is peculiarly long—shipbuilding, for example. Further, the treasury department, in permitting farmers to value unsold produce at sales price less estimated marketing costs has recognized its validity in another special situation. It might also be added that the valuation of securities at the market can be interpreted as involving the use of selling price, since replacement cost and selling value are here virtually identical.

Valuation of Inventories

In general, a rather strong argument may be made in support of adjusted selling value as a basis for inventory valuation in all cases where the selling activity is a minor incident of the production process requiring no special effort or expense to be taken for granted. These conditions clearly obtain in the case of the inventories of gold producers, to a degree in other mining and to some extent in oil production and other extractive industries. With respect to all staple products from these fields sale is assured without much effort at the going price. It is not necessary to advertise, to maintain an extensive selling organization. Production rather than sale is the activity to which all effort is directed. Hence it is not unreasonable to value inventories in such a way as to involve a calculation of income partly in terms of technical completion.

A farmer, for example, has 5,000 bushels of wheat in his bins. What is its reasonable inventory value? Selling price less marketing costs would seem to be the simplest and most valid basis. Sale is assured; no salesmen or selling efforts are required. Whenever the farmer wants to market his wheat he simply loads up and drives to the nearest elevator. Further, even if it were feasible for the farmer to determine specific costs—a well-nigh impossible task on any reasonable basis—it should be emphasized that such costs would not represent a very satisfactory inventory value for unsold produce. Whether the specific farmer's cost is high or low it will not have the slightest effect upon the value of his wheat. The price he will get is determined by a multiplicity of factors in a world market, the immediately determining element in this case being the forces of demand. The influence of specific cost upon market value in the particular season is nil; hence cost in such a case is of minor significance as an inventory principle.

Finally, in the case of farming and in some other extractive industries, buying price and selling price—as far as the producer is concerned—are roughly identical. In other words there is only one market which furnishes a fair test of value here. The position of the retailer who intervenes between two distinct markets is quite different. Thus selling value has an added significance for the farmer or other extractor.

In concluding these more or less incoherent comments on a very broad and difficult subject I would like to emphasize a few general considerations. In the first place we surely agree that

business conditions are so varied and complex that no single valuation rule or principle can be relied upon for application to every case. Instead, what are needed are many rules, principles and methods of procedure, each of which has a particular scope because of its propriety in a particular type of situation. We must take a broadminded attitude, condemning no rule or principle purely on the basis of tradition and prejudice, but testing every method primarily on the grounds of reasonableness and expediency. Further, because of the muddle in which the valuation problem stands at present, accountants owe it to themselves and to the interests they serve to devote their best efforts to the development and formulation of valuation devices and methods of procedure suitable in the various fields of business.

In the second place it is submitted that the three principal bases which should be used as starting points in inventory valuation work are actual costs, replacement cost and selling price. It should be recognized that each of these has its place and must not be discarded in any summary fashion. It should be further recognized that exact literal cost, because of the clerical difficulties involved in its employment (and for other reasons given above) should in general give way either to (1) cost interpreted as the cost of the most recent acquisitions up to the amount of the inventory or (2) outright replacement cost.

Finally, I would like to reiterate my conviction that the "cost or market, whichever is lower," device is thoroughly unreasonable from the practical standpoint and has no place in any scheme of scientific accounting. I sincerely hope that the American Institute of Accountants, which in its refusal to endorse the inclusion of interest on investment as a cost and in other matters has always exhibited a steadfast loyalty to sound accounting principles, will use its influence to discourage the use of this unsound rule for inventory valuation.