Inventories and Gross Profit Based on Selling Valuations

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By W. C. Gray, C.P.A.

It is a common practice, in department stores and in other lines, to take inventories at prices at which the items are marked to sell and to deduct from the aggregate a percentage or other amount to arrive at an estimate for balance sheet showing. To test such an estimate I have used the method below, and in cases where the goods are marked on a satisfactory "automatic mark down" basis I have shown the inventory of merchandise at the value obtained by use of this method. Following is an example, where costs of inventories are not known:

Sales	$292,000
Closing inventory (selling valuation)	50,000
	342,000
Less opening inventory (selling valuation)	37,000
Selling valuation of purchases..............	305,000
Less purchases — cost.....................	227,469
Mark-up (25.42% of $305,000.00)	77,531
Closing inventory (selling valuation)	$50,000
Less mark-up, 25.42% of $50,000.00	12,710
Closing inventory (balance sheet value)	$37,290

To arrive at the cost of sales the common equation is: opening inventory (cost), plus purchases (cost), less closing inventory (cost), equals x, the cost of sales. In the above calculation it is the same equation that is used, but instead of cost values the selling valuations are used. Sales, a known quantity, is substituted for cost of sales, and selling valuation of purchases is the unknown quantity.

Instead of arriving at the percentage, 25.42%, the balance sheet value of the closing inventory is obtainable by the proportion, 305,000 is to 227,469 as 50,000 is to x, the closing inventory value.

In the proportion the purchases and inventories are a series of valuations, cohsisting of the aggregates of the different percentage gross profit items. The assumption of the method is that no material error is due to the inequality of ratios within the series. The significance of the assumption is indicated if the closing inventory happened to consist of all low percentage gross profit items and the purchases all high percentage gross profit items.

The gross profit test by this method is the comparison of the given gross profit with, in this case, 25.42% of the sales, which is $74,226.40. By proportion the method shows the gross profit as equal to 77,531 times 292,000 divided by 305,000—$77,531 represents a net mark-up from cost to selling price.

In the formula for cost of sales, if the inventories include items taken at other than actual cost, the result is not the actual cost the concern paid for the merchandise sold. If the inventories are on the basis of cost or market, whichever is the lower, the result is a cost to the concern but not the amount paid for the goods; so, in using the formula for arriving at the selling valuation of the purchases, the result is not the actual selling value if items of the opening or closing inventories are not sold for exactly the amounts that are taken into the inventories. Goods consumed otherwise than by sale are another disturbing element when attempting to use the formula to arrive at actual cost of goods disposed of by sale or the selling value of purchases.

If closing inventories are brought upon the books at a value determined by this method the gross profit percentage will not equal the average mark-up percentage shown by this method unless this percentage of the prior period happens to be equal to that of the following period.

The following comparison with a case where the practice is to deduct 25% from selling valuations of inventories shows a profit and loss statement difference of $54.60 and a $210, (37,500 less 37,290) balance sheet difference.

Inventories and Gross Profit

	Inventories 74.58% of selling valuations	Inventories 75 & 74.58% of selling valuations	Gross profit 25.42% of sales	Inventories 75% of selling valuations
Opening inventory	27,594.60	27,750.00	27,750.00	27,750.00
Purchases........	227,469.00	227,469.00	227,469.00	227,469.00
	255,063.60	255,219.00	255,219.00	255,219.00
Closing inventory.	37,290.00	37,290.00	37,445.40	37,500.00
Cost of sales......	217,773.60	217,929.00	217,773.60	217,719.00
Sales	292,000.00	292,000.00	292,000.00	292,000.00
Gross profit	74,226.40	74,071.00	74,226.40	74,281.00
25.42% of sales..	74,226.40	74,226.40	74,226.40	74,226.40
Difference	None	155.40	None	54.60