

THE INFLUENCE OF METHODS OF VALUATION OF STOCKS AT THE ENTITY OUTPUT ON PERFORMANCE

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Abstract: *In an economic environment in a constantly changing, performance is a priority, an assurance of some profitable economic results, a measure of profit, productivity, growth, value creation, and an indicator hardly touched. Economic entities benefit from the great opportunities to influence the outcome and, implicitly to shape their performance. These include the choice of the method of evaluating the stocks especially in putting their consumption because the entry in the inventory entity does not generate an expense which would have impact on the performance. In this sense, this article aims to analyze the implications of stock assessment methods to the entity upon performance. The research is based on the comparative analysis of the extent to which three methods of assessment of stocks respectively first in-first out, last in first out, weighted average cost may be used depending on the needs of modeling results. The research results show that the methods of stock assessment chosen by each company, governed by the law of national accounts have considerable influences upon the cost and outcome, concealing various possibilities of performance manipulation.*

Keywords: *performance, result, FIFO, LIFO, weighted average cost.*

Classification JEL: *L25, M41.*

1. Introduction

In the conditions of a dynamic economic environment, with growing competition on the market, imperfect and constantly changing legislation, a series of social and economic imbalances that make their presence felt more and more, the performance has a special significance for the wide range of users of accounting information: investors, suppliers, customers, state, employees, banks, creditors, etc. To meet all the "challenges", and to be prosperous, attractive, and developmental, an entity must be performing, that is to obtain profit, and implicitly a significant result. We believe that entities have great opportunities to influence their performance by modeling the result as well as the tax base. These include the choice of inventory valuation method, especially when it comes to consumption, since entry into the entity of stocks does not generate an expense that has an impact on the result. Exit from the entity generates instead an inventory expense that will affect the accounting result, leading the entity to pay a higher corporate tax (when less expense) or less (where expense is bigger).

The purpose of this article is to determine the extent to which the use of a particular stock valuation method influences the performance of the entity. Research results show that the choice of an entity's stock exit method, regulated by national accounting legislation, hides possibilities to model the results, value added by the entity, and through which performance can be influenced.

2. Research methodology

In the paper, the review of the literature seeks to present the current state of knowledge, by calling for specialized bibliographic references, highlighting current concepts of inventories, methods of valuing inventories at the outlet of the entity, the influence of these methods on performance. At the same time, the theoretical documentation allowed the presentation of concepts considered significant in relation to the subject studied, as well as the main methods of valuing the stocks and their influence on the costs and the result. The use as a research method of the case study aims to illustrate the implications that the methods of valuing stocks at their consumption in consumption have on performance through a comparative analysis of the use of the three methods:

FIFO, LIFO and CMP to assess outflows, to appreciate the costs and the result obtained by using each individual method. Finally, we used participatory observation to analyze and interpret the results of the case study and, last but not least, to substantiate opinions based on the results obtained and to achieve the proposed objectives.

3. Issues on Methods of evaluation of stocks

Inventories represent an important part of an entity's assets. As a component of current assets, stocks are: held to be sold during the normal course of business; in production for sale in the normal course of business; in the form of raw materials, materials and other consumables to be used in the production or provision of services (OMFP 1802/2014, art.272, paragraph 1). We meet in the literature many preoccupations for defining, classifying, presenting stock valuation methods. Some authors consider that any good entered into the entity at the cost of acquisition or cost of production is maintained at these values until it expires and since the cost of acquisition or production costs may fluctuate from one day to the next and the quantities both entry and exit can be large, it becomes difficult to attribute to each item unit at its output, purchase or production cost from the moment it enters the entity (Popa, Briciu, Oprean, 2009, pg.107).

In other authors' opinion, the FIFO method offers a more realistic picture of current assets, while the weighted average cost method is recommended to be used under conditions of relative price stability. (Dumbravă, Pop, 2011, pg.346). In the view of some authors, the use of one of the assessment methods is particularly necessary in the case of consumption exits of certain categories of raw materials and materials, which have different acquisition costs from one lot to another (Todea, 2009, pg .197). Regarding inventory valuation, according to a study in the field (Costi B, 2017), it may have an impact on the increase or decrease of the results of the entity, and besides the fact that the Romanian legislation clearly determines the methods agreed for the evaluation inventory, the use of one or other method is left to the choice of management and is influenced by the specificity of the company's activity, and once chosen the method must be preserved.

In principle, an entity should use the same inventory valuation methods for all stocks that are of similar nature and use. The method chosen should be applied consistently from one financial year to the next. The entity's management decision will be included in the accounting policy manual. Current accounting regulations nevertheless allow changes in accounting policies under duly justified circumstances, if required by law, or if they will lead to more relevant or credible information about the entity's operations. Of course, a change in accounting policies (and, implicit, methods of valuing inventories at the exit of the entity) should be mentioned in the set of annual financial statements, specifically in the explanatory notes.

According to the current accounting regulations (OMFP 1.802 / 2014, art.75), inventories, consumption, donations, destruction, stocks are valued and deducted from their management at their input value using the following methods:

- a) The weighted average cost-CMP method;
- b) first-in-first-out method - FIFO;
- c) The last input-first-out-LIFO method.

In the following, we will describe each method of valuation in part, based on the accounting regulations in force (OMFP 1802/2014, art.96).

The weighted average cost method involves calculating the cost of each item based on the weighted average cost of similar items in stock at the beginning of the period and the cost of similar items produced or purchased during the period. The average can be calculated periodically or after each reception. The calculation period should not exceed the average storage time. In the literature, we find a detail of the weighted average cost

method calculated at the end of the month, which is established as a ratio between the initial stock value (V_{si}) plus the input value (V_i) and the quantity in the original stock (Q_{si}) plus the inputs), ie (Pântea, Bodea, 2013, pg.110):

$$CMP = (V_{si} + V_i) : (Q_{si} + Q_i)$$

According to the first-come-first-out method (FIFO), outgoing assets are valued at the acquisition or production cost of the first input (lot). As the lot is exhausted, the goods out of management are valued at the purchase or production cost of the next lot, in chronological order.

According to the LIFO method, outgoing assets are valued at the acquisition or production cost of the last input (lot). As the batch is exhausted, the assets out of the management are valued at the acquisition cost or production cost of the previous lot in chronological order.

In addition to the three methods presented above, provided by the current accounting legislation, in the literature, in the category of stock valuation methods we also meet:

- The cost or standard price method, which consists in determining the standard or pre-determined cost of the products, based on an antecedence of the standardized levels of materials and consumables plus the calculated (determined) workmanship based on the efficiency of production capacities (Sălceanu, 2011, pg.260).

- Retail pricing method used in retail to determine the cost of stocks of fast moving goods with similar commercial margins and for which it is not practical to use another method. The cost of inventories sold is calculated by deducting the gross margin value from the inventory sale price (Briciu, Capusneanu, 2010, pg.132).

- An indispensable method of inflation accounting is "next-in, next-out: NIFO", which consists in assessing outputs at an anticipated price (replacement cost) that may be the price of the last invoices or the estimated price of the next invoice for inventory purchases. Because outputs are valued at replacement value, it is necessary, in order not to obtain a negative balance, to reevaluate the remaining stock; therefore the necessary stock is therefore reevaluated. The revaluation difference is neutralized (Briciu, Căpușneanu, 2010, pg.132).

4. The Influence of Inventory Valuation Methods on Output on Performance

4.1. Conceptual delimitations of the notion of performance

Performance is a complex notion that has seen a number of definitions in the literature. In the economic field, the concept of performance covers different concepts such as growth, productivity, profitability, profit, value, success, yield, progress. At entity level, "performance is success", being in fact "a dependent representation of the success of different categories of users of accounting information, helping to improve cost-effectiveness, and not only what contributes to cost reductions or increasing value" (Pintea, Achim, 2010). Performance is obtained as a result of the summation of three variables: economy, efficiency and effectiveness. Other authors believe that performance is "the state of the company's competitiveness that ensures its sustainable presence on the market, an indicator of potential future outcomes arising from meeting strategic goals, meeting the expectations of all its partners: creating value for its shareholders and customers, offers pleasure in the workplace and a clean environment for the community" (Jianu, 2007). Other authors refer to the notion of financial performance, which is a "modulation of the overall business efficiency", reflecting "how the enterprise values the resources entrusted to it, conditional on the ability to finance the enterprise, that is, the ability to attract new resources, and ultimately constitutes an essential stake for the relations of the enterprise

with its environment as well as for the internal relations "(Barbuța-Mișu, 2009, pp.216-217). We can conclude that performance is the most complex and hard to reach indicator

4.2. Influence of stock valuation methods on performance

Profit has been, and continues to be, today the main indicator for measuring enterprise performance. Profit is calculated as the difference between income and expense. The higher the expense, the lower the result. Exit from the entity, is discharge, is reflected in the accounting for an expense with significant effect on the accounting result. From a fiscal point of view, the higher the expense on a given amount of goods sold or given in consumption, the more profits and the profit tax are, and vice versa, the lower the expense, the more the profit and the tax on profits are higher. In other words, the size of the expense related to the outflow of inventories is indirectly proportional to the size of the result. This reasoning leads us to believe that, depending on the desired outcome, the use of a method of valuing inventories at their consumption conceals, in principle, a possibility of modeling the outcome, with strong implications for performance.

In the literature, we encounter preoccupations to determine the influence of costing methods on their giving to consumption on the result, from which the considerations appear (Briciu, 2006, p. 411):

- First In-First Out (FIFO) method presents the drawback that in periods of inflation leads to a sub-load of production costs, outflows being valued at the lowest prices, higher gross profit, and final inventory value higher stocks. The company will pay tax profits higher taxes unjustified. In the case of a continuous fall in the prices of goods on the market, this method leads to an overburden in production costs, outputs being valued at the highest prices, an unjustified fall in gross profit and a lower inventory stock value. In conclusion, it can be said that the FIFO method benefits viable companies in times when there is a continuous fall in market prices of goods in the nature of stocks;

- LIFO's last-in-out method (LIFO) in the periods of inflation leads to an overburden in production costs, outputs being valued at the highest prices, unjustified gross profits, and a lower inventory inventory value. For low-profit units, the risk of bankruptcy increases, although they will pay tax to smaller corporate tax rates. This method has the drawback that, during periods of continual price depression on the market, it leads to a sub-load of production costs, outputs being valued at the lowest prices, higher gross profit and value inventory of higher stocks. The company will pay tax profits higher taxes unjustified. In conclusion, it can be said that the LIFO method benefits companies in the inflation period. "LIFO's popularity is closely related to the diminishing of taxable profits and thus to the improvement of the treasury.

5. Case study on the influence of stock valuation methods on the output of the entity on performance

To illustrate the influence of stock valuation methods on the output of the entity, we conducted a case study through which we evaluated raw material outflows over a calendar month based on the three valuation methods provided by national accounting legislation: FIFO, LIFO, and CMP. During the year, Gama SRL recorded the following raw material movements, namely initial stock, supplies, consumptions, and final stock. I evaluated in table no. 1 outputs of raw material by the LIFO method. The results are as follows:

Table no. 1. Evaluate raw material outputs using the LIFO method

| Nr.ct | Op | INTRĂRI | | | IEȘIRI | | | STOC | | |
|-------|----|---------|------|--------------|---------|------|------------|---------|------|------------|
| | | Q | C.U. | V | Q | C.U. | V | Q | C.U. | V. |
| 1 | SI | - | - | - | - | - | - | 11.428 | 1,35 | 15.427,80 |
| 2 | A | 212.122 | 1,15 | 243.940,30 | - | - | - | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 212.122 | 1,15 | 243.940,30 |
| 3 | C | - | - | - | 110.562 | 1,15 | 127.146,30 | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 101.560 | 1,15 | 116.794 |
| 4 | C | - | - | - | 59.045 | 1,15 | 67.901,75 | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 42.515 | 1,15 | 48.892,25 |
| 5. | A | 424.025 | 2,05 | 869.251,25 | - | - | - | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 42.515 | 1,15 | 48.892,25 |
| | | | | | | | | 424.025 | 2,05 | 869.251,25 |
| 6. | C | - | - | - | 150.462 | 2,05 | 308.447,10 | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 42.515 | 1,15 | 48.892,25 |
| | | | | | | | | 273.563 | 2,05 | 560.804,15 |
| TOTAL | | 636.147 | | 1.113.191,55 | 320.069 | | 503.495,15 | 327.506 | | 625.124,20 |

Source: Author's projection

By evaluating the outputs of raw material through the LIFO method, there is an expense of 503,495.15 lei with the consumption of raw material during the year and the final stock of 327.506 kg has a value of 625.124,20 lei. It can be noticed that if the LIFO method is used, stocks remain at a very old price. In Table 2, we determined raw material outputs using the FIFO method, evaluating the outputs at the cost of the first input. The results are as follows:

Table no. 2. Evaluate raw material outputs using the FIFO method

| Nr.ct. | Op | INTRĂRI | | | IEȘIRI | | | STOC | | |
|--------|----|---------|------|--------------|---------|------|------------|---------|------|------------|
| | | Q | C.U. | V | Q | C.U. | V | Q | C.U. | V. |
| 1. | SI | - | - | - | - | - | - | 11.428 | 1,35 | 15.427,80 |
| 2. | A | 212.122 | 1,15 | 243.940,30 | - | - | - | 11.428 | 1,35 | 15.427,80 |
| | | | | | | | | 212.122 | 1,15 | 243.940,30 |
| 3. | C | - | - | - | 11.428 | 1,35 | 15.427,80 | 112.988 | 1,15 | 129.936,20 |
| | | | | | | | | 99.134 | 1,15 | 114.004,10 |
| 4. | C | - | - | - | 59.045 | 1,15 | 67.901,75 | 53.943 | 1,15 | 62.034,45 |
| 5. | A | 424.025 | 2,05 | 869.251,25 | - | - | - | 53.943 | 1,15 | 62.034,45 |
| | | | | | | | | 424.025 | 2,05 | 869.251,25 |
| 6. | C | - | - | - | 53.943 | 1,15 | 62.034,45 | 327.506 | 2,05 | 671.387,30 |
| | | | | | | | | 96.519 | 2,05 | 197.863,95 |
| TOTAL | | 636.147 | | 1.113.191,55 | 320.069 | | 457.232,05 | 327.506 | 2,05 | 671.387,30 |

Source: Author's projection

By evaluating the outputs by this method, there is an expense of 457,232.05 lei with the consumption of the raw material, and a value of the final stock of 671,387.30 lei. At first glance, I would say that the amount of spending using the FIFO method is higher than if I use the LIFO method and the final stock value is higher when using FIFO. In table no. 3 we determined the value of the feedstock output using the CMP method. The results are as follows:

Table no. 3. Evaluating raw material outputs using the weighted average cost method

| Nr.crt. | Op | INTRĂRI | | | IEȘIRI | | | STOC | | |
|---------|----|---------|------|--------------|---------|------|------------|---------|------|------------|
| | | Q | C.U. | V | Q | C.U. | V | Q | C.U. | V. |
| 1. | SI | - | - | - | - | - | - | 11.428 | 1,35 | 15.427,80 |
| 2. | A | 212.122 | 1,15 | 243.940,30 | - | - | - | 223.550 | | |
| 3. | C | - | - | - | 110.562 | | | 112.988 | | |
| 4. | C | - | - | - | 59.045 | | | 53.943 | | |
| 5. | A | 424.025 | 2,05 | 869.251,20 | - | - | - | 477.968 | | |
| 6. | C | - | - | - | 150.462 | | | 327.506 | | |
| TOTAL | | 636.147 | | 1.113.191,50 | 320.069 | | 543.331,06 | 327.506 | 1,74 | 569.860,44 |

Source: Author's projection

The amount of the average cost at the end of the period is calculated by reporting the amount of the initial stock (15,427.80) and the amount of inventory entered during the period (1,113,191.50) to the initial input (11,428) and the input (636,147) obtaining the value of 1.74. By using the weighted average cost method as a method of valuing inventories at the entity's output, we can see that the value of the raw material cost is 543,331.06 and the final stock of raw material is 569,860.44.

The appreciation of the financial performance is based mainly on the profit and loss account, on the analysis of interim management balances (Barbuța-Mișu, 2009, pg.225). As a result, in order to monitor the activity of Gama Srl in 2018, namely, in order to assess the financial performance obtained, to analyze and diagnose the risks to which it is subject, based on the data in the financial statements we have drawn up the picture of the intermediate balances management (Table 4). The picture of interim management balances is as follows:

Table no. 4. Performance measurement based on interim management balances

| Nrert | CALCULATION | LIFO | FIFO | CMP |
|--------------|--|----------------|----------------|----------------|
| 1 | Sell goods income (707) | 1.769.159 | 1.769.159 | 1.769.159 |
| 2 | Goods expenses (ct 607) | 854.526 | 854.526 | 854.526 |
| 3 | Commercial Margin (1-2) | 914.633 | 914.633 | 914.633 |
| 4 | Sell Production (ct 701-706+708-709) | 83.594 | 83.594 | 83.594 |
| 5 | Change in stocks (ct 711 +/-) | - | - | - |
| 6 | Stock production income(ct 721+722) | - | - | - |
| 7 | Exercise productions (4+5+6) | 83.594 | 83.594 | 83.594 |
| 8 | Third expenses (gr.60-607, gr.61, gr.62-621) | 521.773 | 475.510 | 561.609 |
| | 8.a. Expenditure on consumption of raw materials | 503.495 | 457.232 | 543.331 |
| | Third expenses exclusive consumption | 18.278 | 18.278 | 18.278 |
| 9 | Added value (3+7-8) | 476.454 | 522.717 | 436.618 |
| 10 | Tax expenses (gr.63) | 5.833 | 5.833 | 5.833 |
| 11 | Wage expenses(gr.64+621) | 117.726 | 117.726 | 117.726 |
| 12 | Gross operational surplus (9-10-11) | 352.895 | 399.158 | 313.059 |
| 13 | Other operational revenue | 23.790 | 23.790 | 23.790 |
| 14 | Other operational expenses | 84.145 | 84.145 | 84.145 |
| 15 | Depreciation Expenses | 26.531 | 26.531 | 26.531 |
| 16 | Operational result (12+13-14-15) | 266.009 | 312.272 | 226.173 |
| 17 | Financial revenue | 755 | 755 | 755 |
| 18 | Financial expenses | 10.482 | 10.482 | 10.482 |
| 19 | Financial result (17-18) | -9.727 | -9.727 | -9.727 |
| 20 | Gross result (16+19) | 256.282 | 302.545 | 216.446 |
| 21 | Tax | 12.282 | 12.282 | 12.282 |
| 22 | Net result (21-22) | 244.000 | 290.263 | 204.164 |

Source: Author's projection

The cost of raw material consumption is included in the balances of intermediate consumption. One can observe the influence that raw material expenditure has on added value. The largest contribution of the entity to national wealth is present when using the FIFO method, because in this case the value of the consumption with the inventory is the lowest. Being significantly lower, expense indirectly influences net result and performance

implicitly. We can say that in order to record a more significant performance, the entity will use the FIFO method.

We can see that inventory valuation methods directly affect performance. The use of the CMP method leads to the evaluation of the outflows at the highest cost. The descending trend is then followed by the LIFO method, and the FIFO method later. Therefore, the use of the LIFO method by increasing costs leads to a reduction in the accounting result, and implicitly the corporate income tax, while the use of the FIFO or CMP method through the gradual reduction of costs will influence the result in the increase, thus increasing the profit tax. Of course, at the end of the month, CMP gives us the most realistic picture of the value of raw materials in stock. The LIFO method significantly reduces the value of the final stock, while the FIFO method increases the final stock of raw material stock. Regarding the influence of inventory valuation methods on the result, it can be represented graphically:

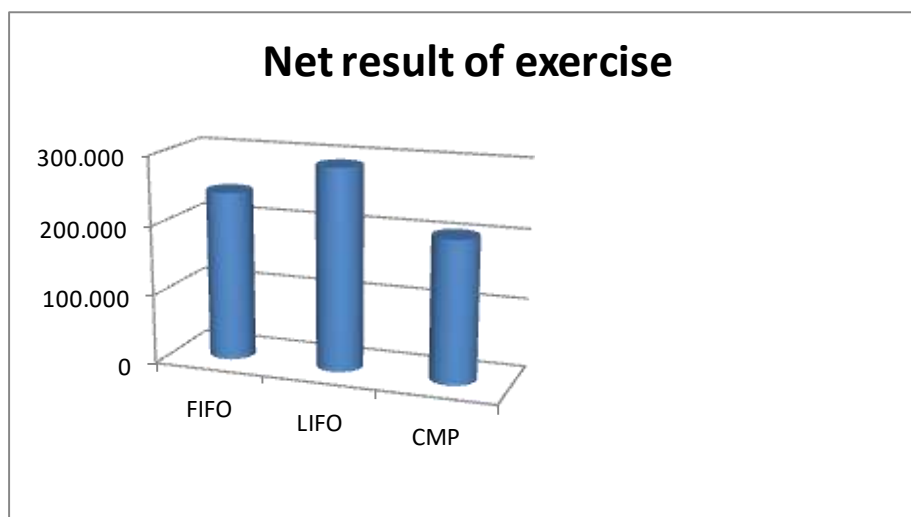


Chart no. 1. Implications of stock valuation methods on performance

We can conclude that choosing a stock valuation method can have a significant effect on the outcome and implicitly on performance, and the size of the cost of inventory consumption is directly proportional to costs and indirectly influences the result obtained. This choice, governed by current national legislation, also hides the intention of any entity to influence its costs, but rather the outcome.

6. Conclusions

Entities have some flexibility in choosing inventory valuation methods, with a significant incidence on the accounting result but above all on performance. Following the analysis of the influence of inventory valuation methods at the entity's output, it follows that when an entity seeks to increase the result, it uses the FIFO method under price rises, is the LIFO method under price depression. On the basis of the researches carried out, it is found that in the case of the FIFO method the result can be overstated, because the outputs are valued at the value of the first input at the value of the historical cost; and under conditions of price increases: Exits are valued at the lowest cost, resulting in profit and performance gains, and otherwise, in the conditions of price declines: output valuation is done at the highest cost, profit reduction takes place. The FIFO method therefore offers a more realistic picture of stocks, as stocks of raw materials / materials valued at the latest prices will remain in stock. In the case of the LIFO method, the situation is the reverse, this method reflecting a quantity of stocks valued at old prices, the value that is unrealistic compared to the stock value at current prices. As far as the CMP method is concerned, it is

not known precisely the value of the outflows during the month, which can be traced only quantitatively.

The research results show that the methods of stock assessment chosen by each company, regulated by national accounting legislation, have considerable influence on costs and outcome, concealing various possibilities of performance manipulation.

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