

# THE IMPACT OF THE EVALUATION METHOD UPON THE VALUE OF STOCKS, AT THEIR EXIT FROM THE PATRIMONY AGRICULTURAL ENTITIES

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## **Abstract:**

*From an accounting point of view, the choice of the appropriate method for evaluation of the goods/merchandises stocks at the at the at their exit from the patrimony represents, through the specific implications, a topical point. The aim of the present paper is to examine the specific calculation methods used in the evaluation of good/merchandises stocks, at the moment of their exit from the patrimony within the agricultural entities, based on an example approach. Through the paper work, there are presented some general aspects regarding the inventories, as well as the evaluation methods of the goods/merchandises stocks at their exit from the patrimony of the company. The conclusions try to highlight the strengths and weaknesses of each of the examined methods, considering their suitability for agricultural sector.*

**Keywords:** accounting, agriculture, FIFO method, LIFO method, WAC method.

**JEL classification:** M41.

## **1. Introduction**

From the accounting perspective, the choice for a suitable method for stocks' valuation at the at their exit from the patrimony is, by its particular implications, of great significance. The objective of this paper is to review the valuation methods used at their exit from the company's patrimony, with regard to the agricultural entities. Starting from various perspectives, there are a wide types of costs. The purpose of the management accounting is to guide managers so that they can carry out the mission of the organization as efficiently as possible. Further on, the main usefulness of the accounting, from the managerial point of view, is that it enables them to calculate costs (Boisvert, 1995, p.17). The first part of the work, contains the applicable definitions with regards the inventories, according to the Order no. 1752/2005, and as per IAS 2 – Inventories. Further on, there is presented a classification of inventories upon the four acknowledged criteria. In the second part, there are listed practical examples of the main valuation methods of inventories' stocks at their exit from the patrimony of the company, using the following methods: Weighted Average Cost (WAC), First In, First Out (FIFO) and Last In, First Out (LIFO), describing and exemplifying each separate method.

The international inventories' accounting is widely described in the "International Accounting Standards no. 2 (IAS 2) – Inventories". (IASB, 2013, p. A523)

Inventories include materials, works and services intended for consumption on their first use or to be held for sale if they are under the status of merchandises, or products derived from processing, as well as the goods in various stages of the production process.

Inventories may consist from:

- ✓ merchandises purchased for resale;

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- ✓ finished or semi-finished goods, manufactured by the undertaking;
- ✓ raw materials, materials, supplies, following to be used thorough the production process;
- ✓ the costs of provided services, in cases the undertaking has not yet recognized the related income.

Within the financial accounts of undertakings, the inventories are classified depending upon four criteria: physical; destination; operating cycle phase; and management creation place.

Corresponding to these criteria, there are considered the following types of inventories:

- ✓ **raw materials**, directly used for manufacturing of products, as part of their composition in whole or in part, in initial or transformed state;
- ✓ **consumables or supplies** comprise auxiliary materials, fuels, spare parts, seeds and planting material, feedstuffs, and other consumables participating indirectly or aiding the exploitation activity; usually, the goods belonging to this category can not be found in the product yielded;
- ✓ **Products** like semi-finished goods, finished goods and residual products;
- ✓ **Animals**, which did not fulfil the requirements to be entered under adult animals, animals for fattening, birds and honey bee colonies;
- ✓ **Production/work in progress**, consists of raw materials which have not yet passed through all production stages, products not subject to tests and technical acceptance, as well as works and services in progress or unfinished;
- ✓ **Merchandises**, i.e., goods that the undertaking is buying for resale;
- ✓ **Packaging**, comprise goods needed to protect the merchandise during transport and warehousing or for their commercial presentation.

Inventory items, hutting and provisional outfitting are part of different categories within inventories. In Romania, this class of patrimonial assets is given the following definition via the Implementing Regulation of the Accounting Act no. 82/1991: *“Inventories and orders in progress accounting comprises the whole goods and services within a patrimonial enterprise, intended:*

- ✓ *Either to be sold in the same condition or after their processing in the manufacturing process;*
- ✓ *Or to be consumed on their first use “*

At the exit from the patrimony or release for consumption, the inventories are evaluated, and their removal from company’s assets is written -down at their original cost. The key issue of entries at removal from company’s assets of inventories, be they purchased or manufactured, is that of the price used to valuate the removed inventories.

Provided that, during the business’ carry out, the same types of goods are purchased at different prices, in order to evaluate the amounts of inventories sold as merchandises or consumed in production, relying on their original cost, the international standards and regulations recommend the following valuation methods (Toma, 2018, p.58):

- ✓ Weighted average cost method (WAC);
- ✓ First in, First Out method (FIFO);
- ✓ Last In, First Out method (LIFO);
- ✓ Standard cost method.

The selected method has to be put into practice consistently for similar items of the inventories type of fungible assets from one financial year to the other. If, exceptionally, administrators decide to change the method for a certain inventory item or fungible assets, in the explanatory notes, they will have to provide the following information:

- ✓ The reason for the method has been changed; and
- ✓ Its effects on the result.

An entity shall use the same costing methods for all inventories of a similar nature and use. For stocks with different nature or use, the use of different calculation methods may be justified. (Possler et al., 2011, p. 47).

## 2. Practical Exemplification

In order to exemplify the evaluation methods, the following example within an agricultural company is considered:

On 01.03.N, an entity has a wheat stock in its storage in order to use it in the agricultural production activity as follows:

- ✓ Initial stock: 600 measuring units (u.m.). x Lei 20 /m.u.
- ✓ Entries, at 3.03.N: 200 m.u. x Lei 22 /m.u.
- ✓ Entries, at 18.03 N: 300 m.u. x Lei 24 /m.u.
- ✓ Exit, at 10.03 N: 400 m.u.
- ✓ Exit, at 28.03 N: 500 m.u.

The value of exit is calculated using of the considered evaluation methods (WAC, FIFO, LIFO).

### WEIGHTED AVERAGE COST METHOD

The weighted average cost (WAC) may be calculated monthly or after each entry operation as a ratio between the initial stock value plus the entries' value on the one side, and the quantity existing in the initial stock plus the quantity input, on the other side.

Using of the method implies the calculation of each basic item of the weighted average of costs, similar items in the inventory at the beginning of the period and of the cost of similar items purchased or produced during the period. The weighted average cost (WAC) is determined using the formula: (Bojian, 1999, p.112)

$$WAC = \frac{\text{Value of initial stock (Vis)} + \text{Values of goods (Vg)}}{\text{Quantity of initial stock (Qis)} + \text{Quantity of goods entered (Qen)}}$$

For the considered month, results:

$$WAC = \frac{(600 \text{ m.u.} \times 20) + (200 \text{ m.u.} \times 22) + (300 \text{ m.u.} \times 24)}{600 \text{ m.u.} + 200 \text{ m.u.} + 300 \text{ m.u.}} = \frac{12000 + 4400 + 7200}{1100} = \frac{23600}{1100} = 21.45 \text{ m.u.}$$

The value of goods at exit from the patrimony is:

- 10.03 N 400 m.u. x 21,45 = 8580
- 28.03 N 500 m.u. x 21,45 = 10725

### Value of wheat stock at the end of the month:

$$IS + En - Ex = 200 \text{ m.u.} \times 21,45 = 4290 \text{ m.u.}$$

**Table no. 1. Calculation the value of stock upon the of the monthly weighted average cost**

Date	ENTRIES			EXITS			STOCK		
	Quant.	P/U	Value	Quant.	P/U	Value	Quant.	P/U	Value
<b>1.03</b>	-	-	-	-	-	-	600	20	12000
<b>3.03</b>	200	22	4.400	-	-	-	800	-	16.400
<b>18.03</b>	300	24	7.200	-	-	-	1100	21,45	23595
<b>10.03</b>	-	-	-	400	21,45	8580	700	21,45	15015
<b>28.03</b>	-	-	-	500	21,45	10725	200	21,45	4290
<b>Total</b>	<b>500</b>	<b>-</b>	<b>11.600</b>	<b>900</b>	<b>-</b>	<b>19305</b>	<b>200</b>	<b>21,45</b>	<b>4290</b>

Source: authors' own processing.

WAC calculated after each entry  
- Entry at 3.03 N

$$WAC = \frac{(600 \text{ m.u.} \times 20) + (200 \text{ m.u.} \times 22)}{600 \text{ m.u.} + 200 \text{ m.u.}} = \frac{12000 + 4400}{800} = \frac{16400}{800} = 20.5 \text{ m.u.}$$

The cost of exit at 10.03 is calculated accordingly: 400 u. m. x 20.5 = 8200

$$WAC = \frac{(400 \text{ m.u.} \times 20.5) + (300 \text{ m.u.} \times 24)}{400 \text{ m.u.} + 300 \text{ m.u.}} = \frac{8200 + 7200}{700} = \frac{15400}{700} = 22 \text{ m.u.}$$

Results the cost of exit at 28.03: 500 m.u. x 22= 11000

**Value of wheat stock at the end of the month:** 200 u.m. x 22 = 4400

Calculations and operations of the above variant are reflected into the analytical inventory account as follows: Wheat stock: 4400 m.u.

**Table no. 2. Calculation of the value of stock upon the WAC after each entry operation**

Date	ENTRIES			EXITS			STOCK		
	Quant.	P/U	Value	Quant.	P/U	Value	Quant.	P/U	Value
<b>1.03</b>	-	-	-	-	-	-	600	20	12.000
<b>3.03</b>	200	22	4.400	-	-	-	800	20,05	16.040
<b>10.03</b>	-	-	-	400	20,05	8.020	400	20,05	8.020
<b>18.03</b>	300	24	7.200	-	-	-	700	22	15.400
<b>28.03</b>	-	-	-	500	22	11.000	200	22	4.400
<b>Total</b>	<b>500</b>	<b>-</b>	<b>11.600</b>	<b>900</b>	<b>-</b>	<b>19.020</b>	<b>200</b>	<b>22</b>	<b>4.400</b>

Source: authors' own processing.

**The FIFO method (First In, First Out)** implies the valuation of inventories at their exit from the patrimony of the company, at the purchase cost or at the production cost of the first batch in. Once it is depleted, the next batch cost is considered chronologically.

**Table no. 3. Calculation the value of stock upon the FIFO (First In, First Out) method**

Date	ENTRIES			EXITS			STOCK		
	Quant.	P/U	Value	Quant.	P/U	Value	Quant.	P/U	Value
<b>1.03</b>	-	-	-	-	-	-	600	600x20	12.000
<b>3.03</b>	200	22	4.400	-	-	-	600 200	600x20 200x22	16.400
<b>10.03</b>	-	-	-	400	20	8.000	200 200	200x20 200x22	8400
<b>18.03</b>	300	24	7.200	-	-	-	200 200 300	200x20 200x22 300x24	15.600
<b>28.03</b>	-	-	-	200 200 100	20 22 24	4.000 4.400 2.400	200	200x24	4.800
<b>Total</b>	<b>500</b>	<b>-</b>	<b>11.600</b>	<b>900</b>	<b>-</b>	<b>10.800</b>	<b>200</b>	<b>200x24</b>	<b>4.800</b>

*Source: authors' own processing.*

#### **LIFO Method**

This method consists in the valuation of the inventories' exits at their last entry cost. As each batch is depleted, inventories removed from company's assets are valued at the previous batch cost, in a chronological order.

**The LIFO method (Last In, First Out)** implies valuation of inventories at their removal from the patrimony of the company, depending on the purchase cost or the production price of the latest batch in. Once it is depleted, the next batch shall be considered in a reverse chronological order. The Romanian undertakings can evaluate and enter into the accounting records the inventory-like goods at other costs too, under the condition to show them at actual costs in the regular reports. Such costs of entry into the books may be: default costs and invoicing costs.

**Table no. 4. Calculation the value of stock upon the LIFO (Last In, First Out) method**

Date	ENTRIES			OUTPUTS			STOCK		
	Quant.	U/P.	Val.	Quant.	U/P	Val.	Quant.	U/P	Val.
<b>1.03</b>	-	-	-	-	-	-	600	600x20	12.000
<b>3.03</b>	200	22	4.400	-	-	-	600 200	600x20 200x22	16.400
<b>10.03</b>	-	-	-	200 200	22 20	4.400 2.000	- 400	- 400x20	8.000
<b>18.03</b>	300	24	7.200	-	-	-	400 300	400x20 300x24	15.200
<b>28.03</b>	-	-	-	300 200	24 20	7.200 4.000	200	200x20	4.000
<b>Total</b>	<b>500</b>	<b>-</b>	<b>11.600</b>				<b>200</b>	<b>200x20</b>	<b>4.000</b>

*Source: authors' own processing.*

#### 4. Conclusions

Further to the analysis of the evaluation methods of stocks at their exit from the patrimony of the company in the data shown by Tables 1-4, the following can be noted:

Comparison of the two options relating to the weighted average cost (table 1) reveals that the evaluation of exits in the inventory by the first option (monthly WAC) has the advantage of a simple calculation, but does not allow for their exit during the period.

The second option (WAC calculated after each entry) allows for the evaluation of exits during accounting period, since the weighted average cost ratio (table 2) and the inventory cost of this method is influenced by the prices paid during the period.

The FIFO method (table 3) consists in the outputs' valuation in the order they have entered.

The outputs' valuation by the FIFO method usually leads to an increase in the financial result (profit) of the year. During the periods of increase in prices, the FIFO method yields the highest possible value of the financial year's result, and the cost of stock inventories which exit from the patrimony of the company is closer to the level of their entry cost.

Outputs' valuation using the LIFO method (table 4) usually leads to a diminution in the result of the financial year and the corporate tax. These effects are accentuated during the inflation periods, LIFO method yielding the lowest rate of results, and the cost of inventories which exit from the patrimony of the company assets is close to the cost of the most recent inventories entered into the accounting.

During the difficult (crisis) periods, the companies are advised to use the LIFO method, as by valuating consumptions by the prices closest to the "*price of the day*", it removes the consequences of an increased advantage by the effect of prices. (Possler et. al, 2011 p. 47).

Generally, LIFO method requires complex calculations and, as shown before, there are various methods to apply the calculation formula in practice. Under certain conditions, the LIFO formula may imply serious problems in the application process, for example when new materials are entered to replace other materials in the product or when there has been substantial stock liquidation, as a consequence of the sale of a branch or a regional office. Because of the complexity of the LIFO method, it is generally not feasible to make calculations for interim periods over one year of financial reporting of an undertaking. The financial statements for such interim periods usually rely on estimates to determine inventories' value using the LIFO method (valuation of inventories within the meaning of the international accounting standard IAS 2).

In Romania, of the presented methods, FIFO is the most used, as it is easier to apply and calculate, as opposed to the LIFO method, which leads to an increase in expenditures and in a diminution of the result of the financial year.

#### 4. References

1. Boisvert, H. (1995). *La comptabilite de management*. Saint Laurent, Quebec: Editions du Renouveau Pedagogique.
2. Bojian, O. (1999). *Contabilitatea întreprinderilor*. București: Ed. Economica.
3. Cucui, Ion (2008). *Costurile și importanța lor în controlul gestiunii firmei*. Craiova: Ed. Arves.
4. Feleagă, N., Ionașcu, I. (1998) *Tratat de contabilitate financiară* (vol. II), Bucharest: Economica.
5. *Gestiunea și Contabilitatea Firmei*, Revista lunara, Editura Economica, 2005.
6. IASB (2013). *Standardele Internaționale de Raportare Financiară, Norme oficiale emise la 1 ian. 2013, Partea A, Cadrul general conceptual și dispoziții*. București: Editura CECCAR
7. *Legea contabilității nr. 82/1991 republicată, cu modificările și completările ulterioare*.
8. *Legea nr. 571/2003 privind Codul fiscal, cu modificările și completările ulterioare*.

9. *Ordinul ministrului finanțelor publice nr. 3055/2009 pentru aprobarea Reglementărilor contabile conforme cu directivele europene*
10. Paliu-Popa, L. (2010) *Contabilitate financiară*, vol. II, Târgu Jiu: Academica Brâncuși.
11. Possler, L., Lambru, Ghe., Lambru, B. (2011). *Contabilitatea Intreprinderii*, Constanta: Ed. Fundației Andrei Șaguna.
12. Ristea, M. (2005). *Contabilitatea financiară a întreprinderii*, Ediția a II-a. București: Ed. Universitară.
13. Todea, N. (2002) *Contabilitate – aspecte teoretice și aplicații practice*. Cluj-Napoca: Ed. Aeternitas.
14. Toma, C. (2018). *Contabilitate financiară*, Ediția a III-a. Iași: Ed. TipoMoldova.