Convergences and divergences in inventories recognition and measurement

Victoria Firescu, Ghergina Drila
Piteşti University,Romania
firescuvictoria@yahoo.com

Abstract
Inventories are an important issue for many entities as they offer information about the financial position in the balance sheet and about performance in the income statement regarding the cost of sold goods.
In its Improvements Project, IASB removes the LIFO option, the allowed alternative treatment used to determine the cost of inventories based on the idea that the objectives of reaching the convergence in the accounting standards will be served better. While convergence with USGAAP is a current IFRS objective, the removal of LIFO treatment (Last in First Out) will complicate this matter.
The present paper aims to answer at the same basic questions:

- *What are the costs involved in inventories measurement?*
- *How is the net realisable value used to account for inventories determined?*
- *How is the inventory flux estima*ted?

Key words: realisable value, just value, cost of inventories

1. Delimitations and structures regarding the stocks

The stocks are important for the economic entities through the information they offer in the balance sheet and in the profit and loss account (the cost of sold stocks).

According to IAS 2, the stocks are circulating actives:

- held in order to be sold during the normal development of the activity;
- on the way of production in order to be sold after their processing;

- in the form of raw matters, materials and other consumables which are to be used in the production process or to deliver services.

From the definition given above to the stocks, results:
- the nature of elements is not sufficient in order to consider them stocks;
- the standard does not mention a superior value limit or a maximum use duration .

For instance, a computer bought by an economic entity:
- is considered a stock in case it is held in order to be sold again in the future;
- is a corporal immobilization if the company intends to use it in its activity.

The stocks are classified according to more criteria in the following way:
- according to the origin source:
  - stocks bought : raw matters and consumable materials, materials of the nature of inventory objects, huts and provisory fitting out, animals, wraps;
  - manufactured stocks : production on the way of execution, half-finished, residual products, finite products.
- according to the individualisation degree and the administration modality:
  - identifiable stocks which are individualised for each article or category of goods;
  - fungible or interchangeable stocks.
- according to the belonging to the patrimony:
  - stocks that belong to the patrimony, being in the own spaces or at third parties in custody;
  - in consignation, for processing or repair;
  - stocks that do not belong to the patrimony but are found in the administration of the economic entity.

In order to accomplish a correct evaluation of the stocks and of the cost of the goods sold, in the financial situations the moment of transfer of the legal title has to be determined. Many times it is considered that title is synonym with possession of goods, which is wrong, taking in consideration the following situations:
- the economic entity holds ownership on certain goods that are not at its disposal;

- the economic entity does not hold ownership on certain goods that are at its disposal;
- Regarding the actual ownership right, there are four situations:
- the goods in transit;
- the sales in which a third party is involved;
- the financing arrangements of the products;
- sales done in which the buyer holds the return right.

The accountant treatment must reflect as exactly as possible the economic substance of the transactions of stocks in the four situations enumerated above.

At the end of the year, the goods in transit from the seller to the buyer are contained in the stocks of the company which is responsible from the financial point of view for the transport costs. If the goods are sent with FOB destination, the transport costs are paid by the seller, which means that these goods are part of the stocks of the seller during the transit period. When the goods are sent with FOB charging point, the transport costs are borne by the buyer, which means that these goods are part of the stocks of the buyer during the transit period.

In a CIF contract (cost, insurance and transport), the title and the risks pass on the buyer at the delivery of the goods to the transport company.
The goods that are governed by expeditions are included in the stocks of the seller.

A financing arrangement of products is a transaction in which an entity sells and agrees to repurchase the stocks with a repurchase price equal to the initial sale price plus the transport and financing costs. IAS 18 "***Incomes from ordinary activities***" approaches in a superficial manner these transactions whose economic substance is of "borrowed" type.

SFAS 49 ***"The accountancy of financing arrangements of products"*** shows that the financing arrangements of products are transactions which are not different, in substance, from those through which a sponsor obtains financing from a third party in order to buy the stocks. In this context, FASB decided that when an entity sells stocks which are burdened by a interfacing agreement for their repurchase, the correct accountancy is to register

a debt when the funds for the initial transfer of stocks is received, worth the sale price.

Regarding the sales of stocks made in which the buyer holds the return right, both IAS18 *"Incomes from ordinary activities"* and SFAS48*"The recognition of incomes when there is the return right"* admit the sale only if the future value of the returns may be reasonably estimated. Although the legal title passed to the buyer, the stocks in cause are recognized and evaluated at the seller.

2. The evaluation of stocks at the moment of their entering in ownership

The evaluation of stocks is made according to the principles of accountancy of commitments according to distinct rules, according to the moment when the evaluation is made. At the entering date in the entity, the stocks are evaluated at the entering value, which can be:

- the acquisition cost for the goods obtained with burden-some title;
- the production cost for the stocks produced in the entity;
- the contribution value, established after the evaluation, for the goods representing a contribution to the social capital;
- the just value for the goods obtained with free title.
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The acquisition costs of stocks contain the buying price, import taxes and other taxes (except for those that the enterprise may recover from the fiscal authorities), transport costs, manipulation and other costs which can be attributed directly to the acquisition of finite products, materials and services.

The value added tax, in case of acquisitions, being generally deductible, is not included in the cost of the stocks. When VAT is not deductible, it is included in the acquisition cost.

The commercial discounts, the rebates and other similar elements are deducted in order to determine the acquisition costs. The financial discounts, generated by an anticipated payment are made according to the indications of IAS18 *"Incomes from ordinary activities"*.

IAS 2 *"Stocks"* revised in 2003, does not admit any more the inclusion in the acquisition cost of the differences of currency rate, following a recent acquisition of stocks expressed in a foreign currency.

The processing costs of the stocks include the costs directly relating to the units produced, like the costs with direct manpower. At the same time, they also include the systematic allocation of the production management, fix and variable, generated by the transformation of materials in finite products. The fix management of production supposes those indirect costs of production which remain relatively constant, no matter the production volume, like: the dampening, the maintenance of sections and equipments, as well as the costs with the direction and administration of the sections. The variable management of production supposes those indirect costs of production which vary in a direct proportion or almost in a direct proportion with the volume of production, like the indirect costs with raw matters and materials and with work capacity.

The allocation of the fix management of production on the processing costs is realized based on the normal production capacity. The normal production capacity is the production estimated to be obtained, in average, along a certain number of periods or seasons, in normal conditions, taking also into consideration the loss of capacity resulted from the planned maintenance of the equipment.

In table no. 1 the calculus of the unitary cost is presented when the variation of the use of the production capacity is not taken into account.

Table 1: The determination of the unitary cost without taking into consideration the variation of the production capacity

Euro

Information	Exercise N	Exercise N+1	Exercise N+2
Production volume (piece)	2000	1850	2250
Total variable expenses	28.571	26.429	32.143
Fix expenses	11.429	11.429	11.429
Total expenses	40.000	37.858	43.572
Unitary production cost	20	20,46	19,37

In this situation, the unitary production cost varies in reverse order with the production volume.

Considering that at the end of each financial exercise the stocked production is of 1200 pieces, the following values of it result:

- 1200 pieces x 20 Euro = 24.000 Euro in N exercise;
- 1200 pieces x 20,46 Euro = 24.552 Euro in N+1 exercise;
- 1200 pieces x 19,37 Euro = 23.244 Euro in N+2 exercise.

The values of the stock above are not real because the fix expenses are not rationally allocated according to the use degree of the normal capacity.

Table no. 2 demonstrates how a unitary production cost can be obtained, relevant for the correct evaluation of stocks.

Table no. 2: The determination of the unitary cost taking into account the variation of the production capacity

Euro

Information	Exercise N	Exercise N+1	Exercise N+2
Production volume (piece)	2000	1850	2250
Total variable expenses	28.571	26.429	32.143
Fix expenses allocated	11.429 x 2000/2000 = 11.429	11429 x 1850 / 2000 = 10.572	11429 x 2250 / 2000 = 12.858
Total expenses	40.000	37.001	45.001
Unitary production cost	20	20	20

It is noticed the obtainment of a unitary production cost independent from the level of the activity. In the over activity period, in exercise N+2, the stock of 1600 pieces will be evaluated at its real production cost of 19,37 Euro / piece because the stocks cannot be evaluated at a superior value to their cost.

The costs of loans are not capitalized in the acquisition cost of stocks, in the conditions in which the necessary period to bring the goods in the condition to be ready for sale will not be very big. Still, if a long production process is required, in order to prepare the

goods for sale, IAS 23 *"Costs of indebtedness"* is applied.

The modality of calculating the production cost shows that the value of stocks cannot be limited to the level of direct or variable costs. With other words, the partial costs cannot be used to evaluate the stocks in the balance sheet.

Other costs are included in the cost of stocks only if they represent costs borne in order o bring the stocks in the form and in the place in which they are at present. For instance, can be adequate the inclusion in the cost of stocks of the managements or of the projection cost of products destined to certain clients.

Below are enumerated examples of costs which must not be included in the cost of stocks, but are recognized as expenses of the period in which they appeared:

- losses of materials, manpower or other production costs registered over the admitted normal limits;
- deposit expenses, except for the cases in which these costs are necessary in the production process, prior to pass in a new manufacture phase;
- general administration managements which do not participate to bring the stocks in the form and in the place in which they are at present; and
- commercialization expenses.

The cost of the stocks of a performer of services supposes first of all, the manpower and other costs connected to the personnel directly hired in delivering the services, including the personnel appointed for the supervision, as well as the corresponding managements. The costs with the personnel hired in the activity of commercialization and administration are not included, but are recognized as expenses in the period in which they were employed.

3. The International Accounting Standards Vision Concerning the Evaluation of the Output Stocks

The specific cost identification assumes the attribution of the specific costs to the identifiable elements of the stocks. This bookkeeping treatment is adequate for those elements that are the object of a distinctive order, no matter if they were bought or made.

The specific identification may not be used in case the stocks include a large number of elements, which generally are interchangeable.

In the stock bookkeeping an odd aspect is represented by the fact that the cost fluxes (treasury fluxes) associated to the stocks may reflect or not their physical flux. In most of the jurisdictions, it was agreed that the cost flux should not reflect the real stock flux, which the costs are associated with. According to USGAPP, it will be chosen the one stock evaluation method that best reflects the recurrent income.

According to the international accounting standards, the cost fluxes associated to the stocks may be evaluated by means of two methods: FIFO („the first in – the first out") and CMP (medium moderated cost.

The first in – the first out method (FIFO) assumes that the first elements to be bought are those that sells first, that is, the elements that remain in the stock at the end of the period are the bought or the most recent ones.

Table no.3: FIFO method in valuating the output stocks

Date	Input			Output			Stock		
	Q	Price	Value	Q	Price	Value	Q	Price	Value
01.01	10	30	300				10	30	300
05.01	12	36	432				12	36	432
10.01				8	30	240	2	30	60
							12	36	432
12.01	10	40	400				2	30	60
							12	36	432
							10	40	400

31.01				2	30	60			
				10	36	360	2	36	72
							10	40	400

By applying this method, the stock that remains at the end of the period is 472 monetary units.
Regardless of the inventory system (recurrent or permanent), the FIFO method generates the same results concerning the stocks value.

The strengthened point of the FIFO method is the fact that the final stocks are valuated at their most recent values, which reflects the economic reality.

According to this method, during inflation, the output stocks are overestimated, leading to irrelevant information in the profit and loss account, concerning the result (the profit).

The medium moderated cost method (CMP) figures out the cost of each element based on the moderated average of the costs of similar elements that are in the stock at the beginning of the period and of the cost of the similar elements made or bought during this time. The average may be calculated periodically or after the reception of each input, depending on the circumstances the enterprise is in.

Table no. 4: The output stock evaluation by means of the medium moderated cost method (CMP) calculated after each input

	Input			Output			Stock		
	Q	Price	Value	Q	Price	Value	Q	Price	Value
01.01	10	30	300				10	30	300
05.01	12	36	432				22	33,27	732
10.01				8	33,27	266,14	14	33,27	466
12.01	10	40	400				24	36,08	866
31.01				12	36,08	433	12	36,08	433

By applying this method, the stock remained at the end of the period is 433 monetary units.

In the above table, it was presented the ***medium moderated cost method calculated after each input.*** The advantages of this variant are the following:

- The output value corresponds to the economical reality of the time;
- The value of the stock and of the output of the stock is known at any moment.

Under the conditions the stock movements are quite frequent, the difficulty in figuring out the medium moderated cost after each reception is eliminated by organizing an automat management of the accounting stock.

The variant of the medium moderated cost, calculated at the end of the period assumes one single valuation of the stocks that is at the end of the managing time. During this specific time, the output stock is registered barely quantitatively. The advantages of this method reside in:

- Levels the cost variations(price);
- Simplifies the stock valuation calculations.

Due to the fact that it does not allow the final stock valuation at any moment, the CMP variant presented above contradict the basic principle of the permanent inventory. On the other hand, this method has the disadvantage that smoothes the valuations in the sense that: the final stocks value will be overestimated when the prices decrease and minimized when the prices rise.

Table no. 5: The output stock evaluation by means of the medium moderated cost method (CMP) calculated at the end of the managing period

	Input			Output			Stock		
	Q	Price	Value	Q	Price	Value	Q	Price	Value
01.01	10	30	300						
05.01	12	36	432						
10.01				8					
12.01	10	40	400						
31.01 Total	32		1132	12 20	35,375	707,5	12	35,375	424,5

4. The net accomplishing stock value at the end of the financial and business exercise

The net accomplishing value is the selling price estimated under normal activity conditions, diminished by

the costs needed for their completion, as well as for the selling prices.

The practice of diminishing the stocks value under the cost, until the workable net value, is concordant to the principle according to which the actives must not be reflected in the balance sheet at a value higher than the value potentially to be attained from their sale or use.

Usually, the stocks are diminished up to the workable net value element by element. In some cases, it may be advisable the grouping of the similar or connected elements. This may be the case of certain stock elements which belong to the same product range with similar purposes or uses, stocks that are being produced or commercialized in the same geographical area etc.

Also, the workable net value estimation takes into account the purpose for which the stocks are being detained. Thus, the net workable stock value that is to be delivered on the basis of certain steady contracts for the goods sale or for service performance is the price agreed in the contract.

The value of the materials and of the expendables used in the production process is not lowered under the cost if there is an estimation that the finite products they are going to be included in will be sold for a price higher or equal to their cost. Otherwise, the cost of the afferent materials is diminished until the workable net value.

At the end of the exercise, the stocks are valuated in balance sheet at the minimal level between the cost and the workable net value

For each subsequent period of time, it is performed a new valuation of the workable net value. It the conditions that determined the decision tot diminish the workable net value ceased to exist, then the value reflecting the reduction will be rectified so that the new bookkeeping value of the stock is equal to the lowest value between the input value and the net workable revised value.

Conclusions

The FIFO stock valuating methods best reflects the physical flux of the units for most of the departments with rapid hauling time. The advantage of the method if

that it establishes o value of the stocks in audit, similar to the one established by the bookkeeping at the present cost, taking into account that the stock is made of elements acquired at the most recent costs. FIFO is a cost valuating method base on the balance sheet, due to the fact that it offers the most precise estimation of the current value of the stock account at the time of the cost modification.

With regard to the incomes, the FIFO method does not reflect the economical performance as the old historical costs are balanced with the present incomes. The reported income is influenced by the stocks rotation and by the cost increasing index. On the other hand there is the risk that the entity cannot finance the stock from its own funds when the prices rise and the reported benefits are distributed entirely to the owners, under the form of the dividends.

It is therefore considered that during the price rise time, the best method to be employed for the recurrent cost valuation is the LIFO one. The entities using this method during inflation time have as a result the decrease due to the current fiscal debt, compared to other alternatives where the above mentioned method is not accepted.

The alternative bookkeeping treatment, respectively the „last in, the first-out" (LIFO) is not allowed any more by the new revised variant of IAS 2. The FIFO method does not submit to all the fiscal regulations, which represents a major advantage compared to the LIFO method.

CMP, the moderated cost methods of the two variants, cannot offer reliable information either from the point of view of the stock value in audit or from the point of view of the profit and loss account incomes.

Due to the fact that IAS 2 provides only general directions concerning the determination of the workable net value, it is recommended that other standards were taken into consideration, especially US GAAP. The workable net value according to IAS 2 makes explicit reference only to the "finishing costs and to the costs appeared in the case of a sale". If the limits from the normal profit or from the one foreseen from the sale of some stock elements are ignored, then, during the next period, excessive profit or loss may be faced as a result

of the incomplete application of a concept of the workable net value.

The workable net value must be established based on the conditions that exist at the time of closing the balance sheet, making use of the professional rationalism. Therefore, there are taken into consideration the entire information available as well as the subsequent modifications of the sale prices.

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Victoria FIRESCU
Ph.D., Associated Professor
University of Pitesti, Romania
firescuvictoria@yahoo.com

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Gherghina Drila
Ph.D., Associated Professor
V University, Pitesti, Romania
drilai@yahoo.com

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