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PROBLEMATIC ISSUES RELATING TO THE EVALUATION OF PRODUCTION IN PROGRESS

Rodica CUȘMĂUNSĂ
Academy of Economic Studies of Moldova
cusmaunsa.rodica.gheorghe@ase.md
Iuliana ȚUGULSCHI
Academy of Economic Studies of Moldova
tugulschi.i@ase.md

Abstract
In the present article, the authors examined some problematic issues regarding the evaluation of the production in progress. By using research methods, such as those of analysis and deduction, there were also studied the viewpoints of local scientists, which allowed for the formulation of stronger conclusions and recommendations on solving the problem of determining the most relevant evaluation method of the production in progress.

Keywords: *evaluation, production in progress; inventory method (direct method); accounting method (indirect method)*

JEL Classification: M41

I. INTRODUCTION

The production process, a complex and multilateral activity that takes place in a certain the period of time that is named calculation period, does not always result in finished products. Unfinished production (production in progress) is an inherent element of the manufacturing process that is not always entirely over at the end of the calculation period.

According to point 6 of the NAS - "Stocks", production in progress represents the goods that have not passed through all processing stages provided by the technological process, as well as the products that are not subject to technical trials and reception or not wholely completed and also the costs related to services and works in progress. A similar definition is presented in point 5 of the Methodological Guidelines regarding the accounting for the production costs and the calculation of products and services' costs. The quantitative and value determination of the production in progress is necessary for the calculation of the actual cost of the finished production.

For example, in a production section there are different categories of goods (that are illustrated in Figure 1):

- products in progress at the beginning of the accounting period;
- products that have been started and finished during the accounting period;
- products in progress at the end of the accounting period.

From the above figure, it can be noticed that:

1) the costs incurred during the accounting period were caused by:
   - completion of existing products in progress at the beginning of the management period;
   - manufacture of products started and finished during the management period;
   - technological operations related to products started and not finished at the end of the accounting period, materialized in production in progress.
2) the finished products in the current accounting period come either from:
   - products in progress existing at the beginning of the reporting period that were finished during the period;
   - products started and finished during the accounting period (Slobodeanu, 2016).

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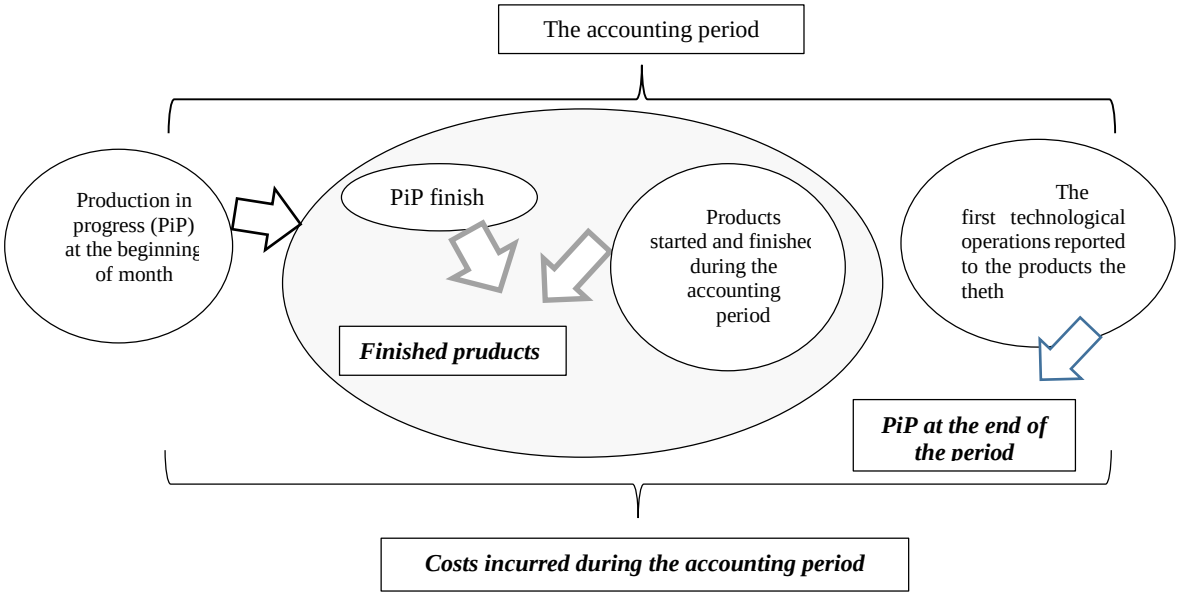

Figure 1 – The circuit of production in progress
Source: (Slobodeanu, 2016)

Thus, the cost of products manufactured during the reporting period is equal to the sum of the costs incurred in the current period, plus the costs of production in progress at the beginning of the period and minus the costs of production in progress at the end of the accounting period. Therefore, it is necessary to correctly establish and evaluate the production in progress.

However, the correct determination of the value of the production in progress influences not only the accuracy of the actual cost of the finished production, but also of other economic and financial indicators (the cost of sales, the financial outcome, taxes due, etc.), as shown in Figure 2:

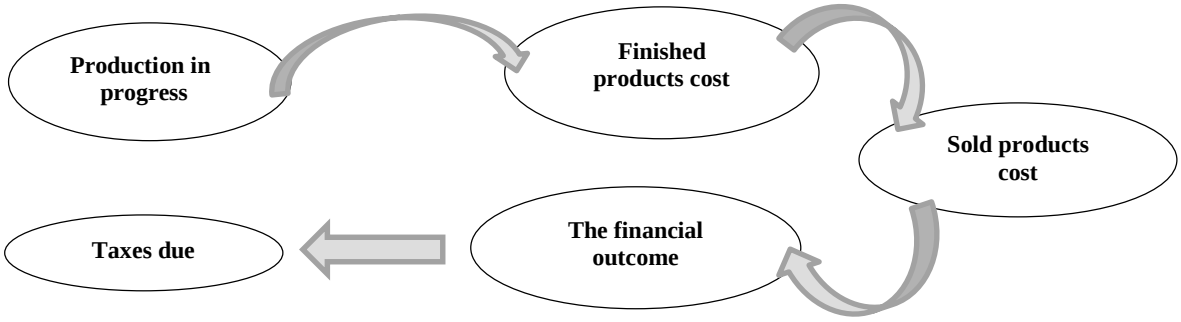

Figure 2 - The influence of the cost of production in progress on the economic and financial indicators
Source: (Caraman & Cuşmăunsă, 2015, p. 97).

Thus, in order to determine the actual cost of the finished production, of the provided services or of the performed works, there is a need to solve the problem of correctly establishing the method of valuing the production in progress.

The goal of this article consists in investigating, examining the notional and applicative issues related to the correct determination of the evaluation method of the production in progress according to the requirements provided in the NAS and the objective stands in the investigation and clarification of the problem above.

Therefore, there were studied the provisions of the national accounting regulations as well as the paperworks, the investigations and views of the local economists and scientists regarding the formulation of conclusions and recommendations on the approached issues.

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II. APPLIED METHODS

The research method results from the analysis of the theoretical and practical materials on the challenging issues related to the correct establishment of the evaluation method for the production in progress. The theoretical foundation was based on analysis, synthesis, deduction, the inductive method being used for obtaining the most clear and representative interpretation. The scientific importance of this article consists in reaching the above-mentioned goal and objective by examining the provisions of the national accounting regulations as well as the works, research and viewpoints of local authors, scientists and researchers, aiming the improvement of accounting for production in progress.

III. RESULTS OBTAINS AND DISCUSIONS

The following methods can be used to determine the cost of production in progress:

a) the inventory method (direct method);
b) the accounting method (indirect method).

The inventory method consists in establishing the quantity of the production in progress obligatorily by inventory. According to this method, for the quantitative determination of the production in progress, the stocks of unfinished products are inventoried in the production sites by the inventory commission set up for this purpose, who counts, measures and weighs all batches of parts, spare parts, subassemblies etc. that are currently in progress, on production floors etc., registering them in the *Inventory Lists* .

The *Inventory Lists* drawn up on each production department shall include the production stocks in progress found on each product, order or part, indicating the degree of finishing. If the manufacturing process does not allow a factual finding of the production in progress on the machines, this can be established according to the data of the operative records, to the capacity of the installations or by approximation.

The evaluation of the quantity of the production in progress that is registered in *the Inventory Lists,* can be performed through several processes, among which:

A. The process of evaluation on parts and operations that is mainly used in the machine building industry.

The evaluation of the production stocks in progress is based on the *Technological Sheet*, in which the consumption norms for raw materials, basic materials, fuel, energy and labor corresponding to each technological operation are registered according to their succession. According to this procedure, the calculation relation is that of weighting the quantity of production in execution with the norms of consumption or time and with the unit costs or the salary tariffs. These calculations result in the production evaluation being carried out at its direct cost, to which are subsequently added the established indirect costs of production, either on the basis of a percentage provided in the preliminary calculations or by taking them from the actual calculations of the previous period.

B. The process of global evaluation according to the degree of technical finishing that requires the establishment of the degree (as a percentage) of finishing the production in progress by the inventory commission on the occasion of the actual findings of stocks. The set finishing percentage is weighted with the planned or actual cost from the previous period of each inventoried product, part, etc.

In order to determine the cost of production in progress at the end of the month, according to the procedure of the level of technical finishing, the following work steps will be completed:

- the production in progress is transformed into conventional finished production by multiplying the percentage of technical finishing with the quantity of production in progress;
- the total quantity of finished products is determined by summing the finished products that were found following the inventory with conventional finished products;
- the cost per unit of finished product is calculated by the ratio of the total amount of production costs to the total quantity of finished products;
- the cost per unit of production in progress is determined by applying the degree of technical finishing to the unit cost of the finished products;
- the cost of production in progress is determined by multiplying the cost of a unit of production in progress with its quantity found in the inventory.

In order to establish the total cost of the manufactured products, the value of the production in progress is deducted from the total amount of production costs. Therefore, to obtain more accurate results, the degree of technical finishing can be established for each technological operation or phase of the technological process by the

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determination of the value of the production in progress on each operation or phase, according to the same calculation algorithm mentioned above.

When using this method, it should be taken into account that some costs with a high weight in the production cost structure - for example, raw materials in garment factories - participate fully and not as a percentage from the very beginning of the manufacturing process.

a) *the flat-rate evaluation process according to the degree of technical finishing* - annihilates the previous shortcoming, in the sense that the value of raw materials is taken into account from the first phase of the technological process and proceeds to collect (depending on the degree of technical finishing) only of the direct labor and costs that are generated by the production departments.

According to this procedure, the quantity of the production in progress that was found in the inventory is recalculated in terms of equivalent whole units, based on the percentage of finishing. In other words, the quantity of production in progress is weighted by the degree of technical finishing to determine the number of equivalent whole units. The total quantity of equivalent units produced during a reporting period is equal to the sum of:

- the quantity of products started and finished during the management period;
- an amount representing the degree of processing of the production in progress reflected in both the initial balance and the final balance of 215 Account "Production in progress".

b) *the valuation process based on total production costs* - according to this process, the quantity of production in progress found in the inventory is multiplied by the actual cost calculated for a unit of product under processing.

c) *the evaluation procedure based on direct production costs* - the cost of production in progress is established by multiplying its quantity by the direct costs of materials and on the remuneration of labor per unit of product; the practical use of this process will have the expected effect, if the share of direct costs in the cost of production is between 80-90%.

d) *the valuation process based on direct material costs* - in this case the cost of production in progress is equal to the cost of raw materials and direct materials being processed (on machinery) at the time of inventory.

For simplification, we can also use the variant according to which, without resorting to inventory, the value of the production in progress is determined based on the relation:

$$CPiP = TCMD - (QMP \times CmN \times MC / unit),$$

where:
CPiP - the cost of production in progress ;
TCMD - total costs of raw materials and direct materials determined based on accounting data;
QMP - quantity of manufactured products;
CmN - consumption norms uniform of raw materials and direct materials;
MC / unit - unit costs of raw materials and direct materials.

Such a process is advisable for entities where the share of direct material costs in the cost of production is essential, such as the food, light and even chemical industries.

The accounting method consists in establishing the cost of the production in progress based on the accounting data and the operative records, without proceeding to its inventory and therefore, it has a conventional character. According to this method, the cost of production in progress is determined for each type of product, based on the data from the calculation accounts that collected the costs by product type, accounts that reflect in the debit of the total actual costs and in the credit of the cost of finished production, the difference representing the value of the production in progress.

The calculation formula is as follows:

$$CPiP = TC - (QMP \times NC(E)\ pf/unit.),$$

where:
CPiP - the cost of production in progress;
TC - total costs collected by product type;
QMP - quantity of manufactured products;
NC(E) pf/unit. - the normative or effective unit cost from the previous period of the finished products.

To determine the cost of production in progress at the end of the month, we have to go through the operational steps:

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- the total cost of the finished products is determined by multiplying the normative cost of a unit of finished product by their quantity;
- the value of production in progress is determined by deducting the cost of manufactured products from the total amount of the collected production costs;

The differences between the used cost to evaluate the finished production and the actual cost determined at the end of the entire order or batch are reflected in the cost of the last batch of delivered products.

IV. CONCLUSION

Choosing the method of determining the cost of production in progress is rather a complicated matter. Its solution depends to a large extent on the technological particularities of the entity, on the way of calculating the cost of the manufactured products, as well as on:

- the real possibilities of applying one or another method in the practice of the respective entity;
- the need to simplify the calculation procedures to the extent that the accuracy of the value of the production in progress thus determined is not affected;
- the existence of an automated accounting system and its possibilities.

However, regardless of the chosen method, it must be stipulated in the entity's accounting policies.

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