

FAIR ALLOCATION OF COST ELEMENTS PER PRODUCT

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Abstract

Concerns related to production costs in general, their analysis and, implicitly, the methods used for this purpose derive from the need of economic agents to produce high quality products, while seeking to incur costs as low as possible. It can be said that this issue must be given the necessary attention because only through a continuous analysis of production costs companies may survive and develop in an increasingly unfavorable, unstable economic environment, marked by fierce competition in all areas of activity and a continuous increase in the prices of used resources. Cost analysis represents an important area in the efficient operation of the enterprise in terms of limited resources, its task being to provide the necessary information to managers in order to develop strategic decisions.

Key words: production cost, production volume, cost analysis, direct and indirect costs, product unit

INTRODUCTION

The analysis of this paper focuses on a stock company whose main object of activity is the production, marketing and industrialization of agro-zoo technical products.

The company exploits on average annually 4,000 ha of arable land of which 3,000 irrigated ha and also deals with the raising of dairy cattle whose herd varies around 1,450 head of cattle of which 800 head of herd.

The company produces on the arable land surface grains and technical plants as well as fodder necessary for the animal growing sector. In the animal production, the company deals with the production of cow's milk and the fattening of cattle.

The social capital of the company is 5,015 thousand lei.

The company is organized in production farms and specialized service sectors of production farms. Thus, the company has the following subunits:

- 3 farms with vegetal profile;
- 1 dairy cattle farm;
- the service sector with a profile for repairing agricultural equipment and the execution of agricultural specific services towards the company's farms;
- the supply, sales, transport sector which has as an objective the assurance of the necessary

materials for the production process, the sale of the products obtained by the farms and the management of the transport means necessary for the above activities;

- the financial-accounting department.

The company has a number of 219 employees, of which 184 permanent employees, 26 TESA staff, 35 seasonal workers.

The analysis of the company's indicators is performed based on the "Profit and loss account" which allows establishing the final result of the activity by measuring the effect reflected in net turnover with the effort reflected in the costs related to the consumption of material and human resources. The "profit and loss account" groups over a given management period all the economic flows generating income (as sources of enrichment) and expenses (as sources of impoverishment) [7].

Material and other direct costs, direct wage costs associated with the manufacture of a product or overall production are provided by the data contained in the basic accounting documents: consumption vouchers for raw materials and consumables, time sheets/reports, payroll statements, customer orders [9].

Indirect costs related to a product or production cannot be related to any output

document [6]. However, the allocation of these expenses for the determination of production costs is essential for the policy of determining the selling price, estimating or allocating the budget. In conclusion, we need methods of reasonably allocating indirect costs with their participation in the manufacture of a product or the entire production.

In this context the paper aimed to study how cost items are fairly allocated in the product cost.

MATERIALS AND METHODS

The study case taken as example is based on the data provided for the period 2017-2019 by the analyzed stock company, for grains.

The analyzed indicators have been the following ones:

- Production volume expressed in number of products;
- Material and other direct costs/Production volume expressed in Lei/product
- Indirect expenses/ Production volume - lei/product
- Direct salary expenses/ Production volume - lei /product
- Total direct and indirect expenses/ Production volume - lei/ product

Administrative and distribution expenses/
Production volume - lei /product

-Full Cost/ Production volume - lei/product/

The data were analyzed in their dynamics establishing the increase or decline in 2019 compared to the level in 2017.

RESULTS AND DISCUSSIONS

Production volume increased becoming more than double in 2019 compared to 2017.

Analyzing material expenses and other direct expenses per product unit, we notice that the average value reached 311 lei per product as it appears in the Table 1.

In 2017 and 2018, the production volume experienced a sensitive increase surpassed by the increase in direct material costs which is also seen in the increase of their share in the volume of production in 2019, we find that although the volume of production increased by 65% compared to the previous period, the direct material costs increased in a proportion of less than 55%, due to the investments made (purchases of modern machines and equipment). This situation led to a decrease in direct material costs per product unit to the value of 311 lei/product.

Table 1. Dynamics of the analyzed indicators reflecting production and cost items and the relationship between them

| Crt. No. | Indicators | 2017 | 2018 | 2019 | 2019/2017 % | Average value |
|----------|--|--------|--------|--------|-------------|---------------|
| 1 | Production volume- number of products thousand t grains | 22.376 | 28.370 | 46.818 | 209.23 | 32.521 |
| 2 | Material and other direct costs/ Production volume - lei/product | 293 | 330 | 312 | 106.14 | 312 |
| 3 | Indirect expenses/ production volume - lei/product | 68 | 94.5 | 121 | 177.94 | 101.5 |
| 4 | Direct salary expenses/production volume - lei/product | 54 | 75.5 | 68 | 125.93 | 67.4 |
| 5 | Total direct and indirect expenses / Production volume - lei /product | 415 | 500 | 500 | 120.48 | 482 |
| 6 | Administrative and distribution expenses/ Production volume - lei /product | 25 | 27 | 43 | 172.00 | 34 |
| 7 | Full Cost/Production volume - lei /product | 441 | 528 | 545 | 123.58 | 516 |

Source: Own calculation based on the data from the analyzed company.

Table 1 also shows the indirect costs per product unit. For example, in 2017 the

indirect expenses were 1,523,684 thousand lei and the quantity of units produced was

22,376,221, in 2018 the indirect expenses were 2,682,761 thousand lei and the quantity of units produced was 28,369,763 and in 2019 of 5,697,218 thousand lei, respectively 46,817,940 products. These values led to obtaining a rate of 68 lei/product in 2017, 94.5 lei/product in 2018, 121 lei/product in 2019.

The average rate for the entire period was calculated as 101.5 lei/product. Indirect expenses registered an average value of 3,301,221 thousand lei higher by 116.6% and 23% compared to 2017 and 2018 and lower by 42.06% compared to 2019, while the average value of the units produced was only 45.33% respectively 14.63% higher compared to 2017 and 2018 and 30.53% lower than in 2019. This situation was the cause for an average rate of indirect costs at a higher production volume.

This is one of the basic approaches for analyzing the differences between rates for distinct periods [1].

The method has its advantages and disadvantages. Applying the rate per product is the easiest to use in allocating indirect expenses. However, its usefulness is limited to situations involving a single product or several related products characterized by a common denominator. If there is no common denominator, we must determine another relevant and reasonable weighting factor [2]. We need to adapt the weighting factors per unit for a given period to the nature of the respective industry.

The table also shows the rates of direct wage expenditures per product unit required for their analysis. The rate of direct salary expenses per product unit reached on average 67.4 lei/product for the analyzed period. The highest rate of 75.5 lei/product was obtained in 2017 and was 12% higher than the average value. The cause is mainly the relatively higher increase in direct labor costs compared to the increase in units produced.

Analyzing the direct wage expenditures per product for 2019 compared to 2018, we observe a decrease of 10% resulting from a relatively higher increase in the number of units produced compared to the increase in direct labor expenditures.

Analysis of indirect costs per product unit. The simplest and most direct method for allocating indirect costs is based on the quantities of products obtained [4]. To obtain the rate, we divide the indirect costs by the units of manufactured product. Calculations may involve actual physical products, estimated physical products, or data from normal activity. Moreover, rates can be calculated for the entire unit, department, or cost center.

If the rate of indirect expenses is based on actual expenses for the given period, this is obtained by dividing the indirect expenses with the actual production expressed in value or physically. Indirect costs can be broken down by product either before or after the total costs have been determined with certainty [5].

Actual application rate = actual indirect costs/ actual production

To calculate a planned rate, we divide the estimated indirect costs with the estimated production expressed in value or physically [10].

Planned rate = Estimated indirect costs/ Estimated production

When we use the actual indirect costs, we cannot complete the pricing procedure until the end of the management period and this delay disadvantages us because we cannot determine the final costs until after the completion of the production report [8].

When indirect costs are estimated in advance, we can determine the costs per product immediately and thus mitigate the fluctuation activity.

On the other hand, the use of estimates can lead to under- or oversized values of indirect costs, which must be adjusted periodically through accounting records.

CONCLUSIONS

Analyzing the production cost per product unit, we observe identical values at the level of 2018 and 2019 of 500 lei/product. Although we noticed that in 2019 the direct unit expenses decreased, the share of indirect unit expenses in the average production cost

increased by 28.04% compared to the level registered in 2018.

The administrative and distribution expenses per product unit reached values between 25 lei/product in 2017 and 43 lei/product in 2019, compared to the average value of the analyzed period of 34%.

Determining the cost elements per product unit helps us to quickly establish the cost per product and to detect unusual deviations in its evolution [3].

The cost element rates per product unit helps us estimate costs, set product prices, measure cost performance based on historical experience, analyze cost elements in detail, prepare the budget, and track its realization.

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