

THE IMPORTANCE OF THE CALCULATION METHODS BASED ON DIRECT COSTING IN MANAGERIAL DECISIONS

Associate Professor Ph.D. Victoria FIRESCU

University of Pitesti
firescuvictoria@yahoo.com

***Abstract:** In response to the criticisms of the cost centre accounting, the calculation methods based on the direct costing concept no longer use the arbitrary calculations for the allocation of indirect expenses based on less pertinent allocation keys. Indirect costs create the illusion of a relation between costs and products, and inexact complete costs lead to an inadequate evaluation of the circulating assets, thus leading to the distortion of the accounting results. The usage of complete costs as forecast norms proves to be delicate. The costs obtained by using the Direct Costing methods are closer to the current cash flow structure, allowing for decisions to be made on short term, in the context of certain given capacities and production procedures.*

***Key words:** direct costs, decisions, calculation*

***Jel classification:** M41, D24*

1. INTRODUCTION

The specialized literature mentions an increase in the conceptual area of direct costing, as it takes into account other types of costs as well besides variable costs and direct costs. The cost of the product is considered a partial cost because it does not include selling costs and administration costs in its structure. Moreover, the marginal cost is assimilated to direct costs taking into account that it reflects the expenses generated by the additional units of the previous production. The direct costing system starts with the assumption that costs include only a pertinent part of the expenses of the enterprise. The primary and synthetic indicators supplied by the Direct Costing method represent an important instrument when decisions are made for the optimisation of the economic and financial result.

2. THEORETICAL AND PRACTICAL DELIMITATIONS CONCERNING THE DIRECT COSTING METHOD

At the end of the 19th century, in 1898 German economist Schmalenbach emphasized the elements of the Direct Costing method, by grouping costs into fixed costs and variable costs and charging only proportional costs to the cost bearer. A Direct – Costing calculation was made for the first time in 1923 at General Motors de Donaldson.

The promoters of the Direct – Costing are Jonathan N. Hariss and G. Charter Harrison who applied it independently from one another in the USA.

According to the logic of the direct costing method, products should generate a margin that should absorb fixed costs [1]. The supporters of the direct costing method maintain that the value of the stocks in the balance should not include fixed production costs because these costs are not relevant for the future events, and cannot create benefits.

According to the direct costing system, structure costs are not considered costs of the accounting period because they are created by the time and not by the production or commercial activity.

The absorption costing/full costing method capitalizes part of fixed costs in the value of stocks, postponing their recognition until the moment of the sale, which seems to distort the obtained result (the production volume influences this result more than the level of sales).

Function of their relative time horizon, fixed costs can be compulsory or can be influenced by the company management (discretionary costs)

Fixed compulsory costs are long-term costs borne without any possibility to decrease their level; they are fixed costs that cannot be eliminated without jeopardizing the normal activity.

Discretionary fixed costs (advertising, training, etc.), can be reduced for short periods of time (when the volume of the activity experiences noticeable decreases), without adverse effects on the long-term objectives; these are relative or controllable fixed costs.

The traditional delimitation of fixed and variable costs function of the volume of activity must many so-called “fixed” costs have a preponderantly variable component, but are, on the other hand, changed function of other parameters as compared to the volume, these parameters being related to the complexity.

Direct – Costing is a method used for the calculation of costs as well as short-term results, and therefore, a useful instrument for the creation of certain simulations.

The calculation specific to the direct costing method implies the assessment of the following primary decision-making indicators:

- the cost per unit is measured as a total variable cost/production ratio;
- the contribution margin represents the difference between the selling price per unit and cost per unit;
- the result is calculated as the difference between the total contribution margin and fixed costs.

Function of the partial cost used for calculating the margin, several types of margins can be calculated:

- margins of variable purchase costs;
- margins of variable manufacturing costs
- the margin of variable cost.

The balancing point, also known in the specialized papers as “break-even point” represents the relative volume of activity, the turnover at which the profit is null; this synthetic indicator of variable costs allows for the calculation of the physical volume of activity so that a profit P may be gained.

Another decision-making indicator supplied by the Direct Costing method is the *coverage factor* that estimates how many percentages of the sales are necessary in order to cover fixed costs and gain profit. The coverage factor can also be used as a forecasting instrument for the selling price.

The dynamic coefficient of safety or the margin of safety indicates how much sales should decrease so that the company should reach the balancing point. This indicator should be considered for the creation and usage of the output capacity. If the degree of usage of the capacity is lower than the percentage of the coefficient of safety in the break-even point, the company runs at a loss.

3. DECISION-MAKING AREAS IN WHICH THE DIRECT COSTING METHOD IS USED

- The *Cost – Volume* analysis model– *Profit used for making decisions in commercial forecasting*

The *Cost Volume Profit* model is a completion of the direct-costing method, and is used in commercial forecasting for making decisions such as:

- changing the amount of fixed costs by increasing the volume of sales;
- changing variable costs and the volume of sales;
- changing the amount of variable and fixed costs as well as the volume of sales;
- changing the selling price;
- changing the selling price, the fixed costs, and the volume of sales.

In order to exemplify the decisions concerning the change in the selling price, fixed costs and volume of sales, we consider the following application:

In order to increase sales by 30 %, the management considers reducing the selling price by 10% and increasing selling costs with 35.000 m.u..

Solution:

Current situation:

- turnover: 2,400,000 m.u.
- total variable costs: 1,200,000 m.u.
- contribution margin 1,200,000 m.u.
- result: 700,000 m.u.

Forecast situation:

- turnover: $(8000 + 30\% \times 8000) \times (300 - 10\% \times 300) = 2,808,000$ m.u.
- total variable costs: $(8000 + 30\% \times 8000) \times 150 = 1,560,000$ m.u.
- contribution margin: $2,808,000 - 1,560,000 = 1,248,000$ m.u.
- fixed costs : $500,000 + 35,000 = 535,000$ m.u.
- result: $1,248,000$ u.m. – $535,000$ m.u. = $713,000$ m.u.

Taking into account that the profit is increased by 13,000 m.u., the presented decision can be implemented.

The model cannot quantify the impact of the future increase in selling costs.

If, in the analysed period, the selling price remains constant, the margin of costs and the variable costs vary proportionally with the turnover.

By analysing the impact of the change in one or several parameters of the model we can measure:

- *the variable cost rate* calculated as the total variable cost – turnover ratio:

$$r = \frac{CV}{CA} \times 100; \text{ we can see that } r = \frac{Q \times C_v}{Q \times P_v} \times 100 = \frac{C_v}{P_v} \times 100, \text{ where } C_v = \text{variable cost per unit, } P_v = \text{selling price per unit.}$$

- *the margin rate* calculated as the variable cost margin–turnover ratio:

$$r' = \frac{MCV}{CA} \times 100; \text{ similarly, } r' = \frac{Q(P_v - C_v)}{Q \times P_v} \times 100 = \frac{P_v - C_v}{P_v} \times 100 = 1 - r$$

For pertinent decisions, the analysis using the *Cost – Volume – Profit* model should be applied when the following conditions are met:

- the analysis should not exceed the relevant the relevant range of activity ;
- the production sold must be equal to the manufactured production in order to eliminate the impact of the variation of the inventory;
- the prices of the production factors should be constant;
- costs can be divided into fixed costs and variable costs;
- variable costs should vary proportionally with the volume of the manufactured and sold production;
- the manufacturing processes should b known and should not undergo changes in the period for which the analysis is made;
- the cash problems should not be considered in order to eliminate the lap between an incurred cost and its payment, between obtaining an income and collecting the related liquid assets.

The full costing methodology that allocates the full costing of outputs inevitably includes irrelevant elements. However, in order to make the right decisions, the irrelevant aspects should be eliminated from the decision-making argumentation.

- Decisions made based on relevant-differentiated costs

A cost is relevant insofar as it is applicable to the manager’s option in the decision-making process, i.e. can be partially or totally eliminated from the choice of a version or another version in the decision-making process. The decision-making process based on relevant (differentiated) costs implies:

- collecting all costs associated to each decision alternative;
- eliminating costs that have already been made;
- eliminating costs that are not different in all the alternatives;
- making decisions based on the remaining “cost” information.

The decisions in relation to which managers should distinguish between relevant and irrelevant costs can be:

- *keeping an item of equipment or replacing it with a new one;*
- *keeping or abandoning a product line;*
- *the “make or buy” decision.*

In order to exemplify the “make or buy” decision we assume that the company ALFA is currently manufacturing an assembly necessary for the manufacturing of one of its main products. The costs afferent to the manufacturing of the semi-finished product are presented below:

Table no.1 The costs afferent to the manufacturing

<i>Designation</i>	<i>Cost per unit</i>
Direct materials	50.m.u.
Direct labour	40 m.u.
Indirect variable costs	10 m.u.
The auditor’s salary	30 m.u.
The depreciation of a specialized item of equipment	20 m.u.
General allocated costs	45 m.u.
Total	195 m.u.

The company ALFA can buy the subassembly in the necessary quantity of 1.000 pieces on the market at the de unit price amounting to only 160 m.u.

In order to make the right decision, the manager should take into account the relevant expenses (direct materials, direct labour, indirect variable expenses, and the auditor's salary) because they could not be avoided, if the company stopped manufacturing the semi-finished product in question. On the other hand, unavoidable costs (the ones that have occurred) are not taken into account (the depreciation of the specialized equipment for which the company cannot find a buyer, the general allocated expenses).

The argumentation based on differentiated costs is presented in the table below:

Table no.2 Differentiated costs

Designation	Differentiated cost per unit	
	Make (m.u.)	Buy (u.m)
Direct materials	50	
Direct labour	40	
Indirect variable costs	10	
The auditor's salary	30	
The depreciation of the equipment	-	
General allocated costs	-	
Acquisition costs		160
Total	130	160
Difference in favour of making or buying		30

We can notice that the optimum solution implies that the company should continue to manufacture the subassembly because the manufacturing cost per unit is lower than the acquisition one by 30 m.u. In the above-mentioned analysis based on differentiated costs, the space used for manufacturing the respective subassemblies is deemed to be inadequate for any other activity of the company.

4. SPECIFIC COSTING METHOD (ADVANCED DIRECT – COSTING).

The concern of companies with making short-term decisions as radical as concerning the production, distribution, expected return resulted in the improvement of the Direct – Costing method.

The Advanced Direct – Costing is one of the developments of the direct-costing method, also known under several other names: the specific cost method, the advanced variable cost method, the contribution margin or inflow method, operational cost.

The Advanced Direct costing has the following characteristics:

- ▶ it assesses a cost as close as possible to the product that generated it by taking into account both variable as well as fixed costs specific to the cost bearer;
- ▶ the fixed costs specific to a product are allocated based on an accounting relation [2];

- ▶ the settlement of fixed costs is made in stages on product, group of products, centres and activities, work cells, departments, company.
- ▶ it has a higher capacity to supply information taking into account that the assessment of the coverage contribution is assessed at each stage;
- ▶ it allows for setting responsibilities on centres, activities, for as many costs as possible;
- ▶ it determines two margins: a variable cost margin and a specific cost margin (own gross margin);
- ▶ it is a pertinent method used for making decisions such as: abandoning an activity, a product, a distribution; it allows for using standards and budgets that provide for the forecast analysis and management control.

M/Cfs assesses the profitability of products in a more realistic manner reflecting the extent to which sold products contribute to covering fixed indirect costs.

The advanced version as well as the superficial calculation use indicators expressed in relative figures for the development of several courses of progress.

5. ADVANTAGES AND LIMITATIONS OF THE DIRECT COSTING METHOD

As a cost calculation method, Direct Costing has a number of advantages such as:

- it is a simple method because it easily eliminates the cost per unit based only on variable costs;
- it is an efficient method because it supplies information related to the final result in an operative manner, and especially information related to companies with a large number of products and ranges of products;
- it is a cost-efficient method if we take into account that it reduces costs with obtaining information for the calculation of the cost per unit;
- by calculating the gross contribution to the profit, it supplies information necessary so that the management could make decisions concerning the manufacturing and distribution policy;
- it allows for management control, both in what labour productivity on posts or centres of activity is concerned, as well as in what the profitability of the product is concerned;
- by calculating the breakeven point, it allows for optimizing the manufacturing and distribution process;
- the price-cost-volume model allows for short-term decisions concerning the profit optimization through forecasts;
- it allows for planning costs and responsibilities at all the levels of the management, for the results of the business;
- it allows for the indirect calculation of the selling price as a supply price.

The Direct Costing method also has some limitations in what its applicability and efficiency are concerned, when it comes to the cost calculation and optimization of the result, for the following reasons:

- the separation of production costs into fixed costs and variable costs can never be made in an accurate manner, given the fact that there are costs shifting, for short periods of time, from the semi-fixed cost behaviour to that of semi-variable costs;

- the result calculated through Direct Costing is distorted due to the fact that it takes into account fixed costs related to the production manufactured in the current period, instead of fixed costs related to sold production;
- a high gross contribution to profit does not always represent high profit, because it also includes fixed costs the amount of which is known only at the end of the year.

6. CONCLUSIONS

The indicators supplied by the Direct Costing method represent an important managerial instrument in optimising the economic and financial result of the company. By using the Cost-Volume-Profit model, we can determine the influences resulted from the changes in the factors that influence the value of the result.

- *An increase by a certain percentage in the selling price will lead to:*
 - An additional profit equal to the sold quantity multiplied by the price increase;
 - an increase in the coverage factor and in the dynamic coefficient of safety;
 - a decrease in the break-even point.
- *A reduction of the variable cost per unit shall result in:*
 - an additional profit equal to the sold quantity multiplied by the reduction of the variable cost per unit;
 - an increase in the coverage factor, in the dynamic coefficient of safety, and the margin of safety;
 - a decrease in the break-even point.
- *An increase in the physical volume of production and distribution leads to:*
 - an increase in the profit equal to the additional sold quantity multiplied by the gross unit margin;
 - the increase in the dynamic coefficient of safety and in the margin of safety;
 - the coverage factor and the break-even point are not changed.
- *Promoting a production and distribution structure in favour of the range of products with the highest coverage factor will lead to an increase in profits;*
- *The reduction of fixed costs by a certain percentage shall have the following impact:*
 - the increase in profit according to the reduction of fixed costs;
 - the diminution of the break-even point;
 - the coverage factor remains unchanged;
 - the increase in the dynamic coefficient of safety and in the safety margin.

In making decisions, managers may face risk situations in the anticipation of the evolution of many variables that are uncontrollable or hard to control [3].

The closer the turnover of a company to the break-even point, the higher the economic risk of this company. The economic risk of a company is assessed by means of the volatility coefficient (the operating lever) that reflects the percentage variation of the result function of the change in the volume of sales. In fact, the volatility coefficient represents the elasticity of the result as compared to the turnover and should be interpreted function of the cost pattern, or function of the fixed cost-variable cost ratio.

In the companies with seasonal business, the seasonal variations do not influence the value of the critical turnover, but they influence the critical period.

In case of the companies that operate in an uncertain environment, the critical turnover cannot be accurately assessed. The probability of reaching or exceeding the break-even point can be calculated. Prudence is recommendable in using the critical probabilistic point.

In the pertinent evaluation of the critical point, the following aspects should be considered, in respect to the functions of the costs and of the turnover:

- fixed costs are constant when the volume of activity does not exceed the output capacity;
- for a given production structure variable costs have a different evolution (from the range of de increasing returns to that of constant returns and that of decreasing returns).
- In order to increase the volume of sales, the company should grant certain commercial discounts (which means that the assumption of the selling price independence in relation to the sold quantity is no longer observed).

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