ASPECTS REGARDING THE APPLICATION OF DIRECT-COSTING IN TAKING THE MANAGERIAL DECISIONS

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Abstract: Direct-costing represents a method of calculation which, although can not be used in financial reporting, represents a very strong instrument of analysis within reach of enterprise's management. The method direct-costing requires the delimitation between the variable and fixed costs and including in the cost of production of the variable costs, the fixed costs being considered costs of the period. Another important aspect is the difference between the methods of absorbent costs and the method direct costing. The making of rational decisions that can permit the obtaining of optimum results can be made only if it is taken into account the correlation between the fixed costs, the variable costs, the volume of activity and the price of selling of the products, correlation given by the specific indicators of the method direct-costing.

Key-words: direct-costing, variable cost, fixed cost, cost of sub activity

Direct-costing represents a method of calculation which, although can not be used in financial reporting, represents a very strong instrument of analysis within reach of enterprise's management, because "the model direct-costing" is oriented to future; it permits the elaboration of some forecasts and simulations that emphasize the main factor of benefit or of lose of the enterprise: the volume of activity or the volume of sales (Nadia Albu, Catalin Albu, 2003).

Elaborated and applied by Jonathan N. Harris in the economic practice in U.S.A. in 1934 and later by G. Carter Harrison in 1935, the method direct costing was preluata and applied by a series of European countries, like Germany, France, England, Italy and others.

In the opinion of Robert W. Lentilhon, the method direct-costing determines a decrease of the value of the stock because the fixed costs are not taken into account at the calculation of the unitary cost of the product (Robert W. Lentilhon, 1964). The fixed costs are considered expenditures of the period. In the same time, R. Lee Brumet considers that the method direct-costing requires at first a study of the trends of cost and a separation of the fixed and variables elements (R. Lee Brumet, 1955). This study can be of incommensurable help in knowing the cost at all the levels of responsibility and in appreciating the complicated problems of planning and controlling the cost. Robert E. Seiler considers that direct-costing attributes to products only the variable costs and treats all fixed costs as costs of period (Robert E. Seiler, 1959). The variable costs will include only those that the enterprise considers that are occasioned by making the planned production.

Direct-costing can offer the manager of the enterprise information that has a special importance in taking decisions regarding the future activities. This method will offer a basis for the forecasts of the cost, for the study of the effects of planned changes in the volume of production, determined by the change of the economic conditions or some open actions of the management, such as price changes, the increase or decrease of costs, or special promoting activities.

The moment of sell is the most favorable for recognizing the revenue. In the case that sells are constant, the fixed total costs and the unitary variable costs will not change, and the volume of production will vary (James Don Edwards, 1958). If the price of selling is constant, in periods with small sells, the enterprise can obtain bigger profits, because when the level of activity increases, the unitary cost of production decreases, because the same value of fixed costs is apportioned to a bigger number of products obtained. This situation can appear if there is production on stock. In the periods with high sells, the enterprise obtains lower profits, because when the level of activity decreases, the unitary cost of production increases, because the same value of fixed costs is apportioned to a smaller number of products obtained. Thus, the total value of fixed costs imputed to a unit of product is inverse proportional to the quantities obtained. For

eliminating the influence of the absorption of fixed costs by the complete costs and for an easier supervising of other causes of debates, it was elaborated the method of rational elaboration of fixed costs.

In order to establish the level of activity there can be taken into account the volume of production, the hours of functioning of equipments or the degree of using the capacities of production. There can be two types of activities, respectively capacities of production: the normal capacity of production and the real capacity of production.

The normal capacity of production represents the production estimated to be obtained in medium, over a certain number of periods, in normal conditions, taking into account the loss of capacity resulted out of the planned maintenance of the equipment.

The real level of the activity is represented by the production obtained and the normal level of activity is represented by the normal capacity of production.

If the level of the activity decreases comparatively to the normal level, the cost of production obtained will be more decreased than the real activities of the enterprise. Thus, it will appear a surplus of fixed costs that will remain unapportioned and that represent a "cost of sub activity". In the oppose situation, there will appear costs apportioned in plus, named "prima of supra activity" or "gain of supra activity". The cost of sub activity can be determined by the relation: Csact = Fixed costs x (1 – Real capacity/Normal capacity).

The method direct costing puts the accent on the promoting of sales. The difference between the price of sale of the product and the variable cost represents a margin of commercialization for recovering the fixed costs. The analysis will show the limit at which these costs can be covered from selling the products.

In essence, this method requires the net separation of the production costs and selling costs depending on their behavior towards the variation of the physic volume of production and sale in variable and fixed costs and taking into account at the calculation of the unitary cost of product only the variable costs. The fixed costs are deducted from the gross financial result of the enterprise.

An important aspect is the difference between the using of the method of absorbent costs and of the method direct-costing. At conceptual level, the justifying of using one of the two methods is based on the conception over the notion of asset. Thus, an asset represents a resource controlled b the enterprise, that comes from passed events and that is bearer of future economic advantages that must be benefice to the enterprise. This concept of future advantages is on the basis of the delimitation between the two methods of calculation of cost: the problem is the accuracy of capitalizing a part of the fixed production costs supported by the enterprise, under the form of recording in the assets (at stocks) the products made and not sold. The sustainers of using the method of absorbent costs consider that there is not anything wrong in delaying the recognition of a part of fixed costs by capitalization, because the stocks that had attached these costs are bearer of economic advantages benefic to the enterprise by obtaining some revenues; in plus, it would be as impossible the obtaining of production without employing the fixed production costs, as it was in the absence of supporting the variable costs, being necessary the affixation of the two categories of costs to the cost of stocks.

The sustainers of the method direct costing consider that a cost is bearer of future economic advantages only if it succeeds, by the employing in the current period, in avoiding the future supporting. There is 1judged the character of being benefic through the prism of future avoidance: any cost whose supporting in the current period does not keep down its supporting in the future periods can not be bearer of future advantages for the enterprise and it can not be capitalized (under the form of an asset). The supporting of some fixed production costs in the current exercise does not prevents the supporting of the same costs in the future periods; these costs do not accomplish the criterion of future avoidance of the cost and can not be recorded in the balance sheet. If the supporting of the cost will not influence in any way the ulterior supporting of the same cost, it is regarded as not having relevance through the prism of future events. This cost can not generate in any way a future advantage.

The so-called fixed costs of production do not accomplish the criterion of avoidance: the employment of such costs in a certain period will not eliminate its employment in the next exercise. Because of this fact, the fixed costs of a period can not be considered as significant for the future events, and will not bring further benefits or services. The sustainers of the method direct costing consider that any portion of the fixed production costs should not be reported in the balance sheet under the form of including in the value of the stocks.

Thus, the method of absorbent costs requires the calculation of cost of production as a sum of all the costs implied by this process and the appliance of the method direct-costing requires the imputation in the cost of those expenditures that vary direct proportional to the volume of production.

The arguments for this differential behavior applied to the variable and fixed costs are related to the consequences of using the method of absorbent costs over the determination of result, many authors proving, by practical examples, the difficulties of using this method. The most significant difficulty is that of anticipating the future profits by capitalizing a part of the fixed costs in the value of stocks, so the delaying of their recognition until the moment of selling. In the logic of direct costing, the fixed costs do not represent capitalized costs because they do not represent the consequence of unfolding the activity of production, being supported for maintaining the enterprise in a functional state. The delaying of recognizing these costs until the moment of recognizing the revenues obtained by selling the products (resulted from the worry of observing the principle of connecting the costs to the revenues) seem to falsify the result obtained, this being influenced more by the volume of production than the level of sales.

1The difference between the calculations of costs in the two methods can be exemplified as shown below:

There are known the following information:

Explanations	Bread of rye 500 g	Bread multicereals 500 g
Quantity (pieces)	14.000	13.000
Price of sale (lei/piece)	2,4	2,8
Direct materials (lei/piece)	1,4	1,6
Direct manpower (lei/piece)	0,3	0,4
Unitary variable cost (lei/piece)	1,7	2,0
Direct costs of capacity (variable) (lei)	6.000	8.500

Table 1. Initial information.

The fixed indirect costs are of 3.000 lei, the general costs of administration are of 500 lei and the costs of selling are of 300 lei.

During the period of administration there are sold 13.500 pieces of bread of rye and 12.600 pieces of bread multicereal. The work in progress at the end of the period of administration is of 500 pieces of bread of rye and 400 pieces of bread multicereals.

The basis of apportioning for the indirect costs is the direct manpower and for the costs of selling is the cost of production.

The calculation of the complete commercial cost can be showed as follows:

The method of absorbent costs	Bread of rye 500 g	Bread multicereals 500 g	Total
Sales	32.400	35.280	67.680
Direct materials	19.600	20.800	40.400
Direct manpower	4.200	5.200	9.400
Variable costs	23.800	26.000	49.800
Direct costs of capacity (variable)	6.000	8.500	14.500
Indirect costs of capacity (fixed)	1.344	1.656	3.000
Total costs	31.144	36.156	67.300
The work in progress at the end of period	1.110	1.112	2.222
Cost of production	30.034	35.044	65.078
General costs of administration	240,27	259,73	500
Costs of selling	150,17	149,83	300
Complete commercial cost	30.424,44	35.453,56	65.878
Gross result	1.975,56	- 173,56	1.802

Table 2. Calculation of costs in the method of absorbent costs. - lei -

The cost of work in progress at the end of period can be determined as follows:

- for Bread of rye: 500 pieces x (31.144 lei / 14.000 pieces) = 500 x 2,22 = 1.110 lei
- for Bread multicereals: 400 pieces x (36.156 lei / 13.000 pieces) = 400 x 2,78 = 1.112 lei

Advanced direct-costing	Bread of rye 500 g	Bread multicereals 500 g	Total
Sales	32.400	35.280	67.680
Direct materials	19.600	20.800	40.400
Direct manpower	4.200	5.200	9.400
Variable costs	23.800	26.000	49.800
Margin regarding the variable costs	8.600	9.280	17.880
Direct costs of capacity (variable)	6.000	8.500	14.500
The work in progress at the end of period	1.065	1.060	2.125
Cost of production	28.735	33.440	62.175
Contribution of covering	3.665	1.840	5.505
Indirect costs of capacity (fixed)	1.344	1.656	3.000
General costs of administration	229,88	270,12	500
Costs of selling	143,68	156,32	300
Complete commercial cost	30.452,56	35.522,44	65.975
Gross result	1.947,44	- 242,44	1.705

Table 3. Calculation of costs in the method direct-costing. - lei -

The contribution of covering is determined as a difference between the total sells and the cost of production.

The cost of the work in progress at the end of period can be determined as follows:

- for Bread of rye: 500 pieces x (29.800 lei / 14.000 pieces) = 500 x 2,13 = 1.065 lei
- for Bread multicereals: 400 pieces x (34.500 lei / 13.000 pieces) = 400 x 2,65 = 1.060 lei

We can see that in the two cases the gross result differs depending on the way of including the fixed costs in the cost of production and on the evaluation of the work in progress at the end of the period.

In order to eliminate the influence of fixed costs depending on the variation of the volume of activity, it can be used a "coefficient of rational imputation" (K_R). For a normal production of 28.500 pieces, the coefficient of rational imputation can be determined as follows:

$$K_R = \frac{Qr}{Qn} = \frac{26.100}{28.500} = 0,92$$

where: Qr = the real level of activity;

Qn = the normal level of activity.

The fixed costs that are taken into account are given by the relationship:

$Chf_i = Chf_r \times K_R = 3.000 \times 0,92 = 2.760$ lei

where: Chf_i = fixed costs imputed;

Chf_r = real fixed costs.

It is calculated the difference to be imputed $D_{IR} = Chf - Chf_i = 3.000 – 2.760 = 240$ lei.

In this case, there appears a cost of sub activity of 240 lei that can not be included in the cost of products, but it has to be reflected in the profit and loss account.

Based on these relationships, it can be determined the Cost of normal activity (C_{An}) or the rational cost:

a) The method of absorbent costs: $C_{An} = Chv + Chf_i = 62.878 + 2.760 = 65.638$ lei

b) Direct-costing: $C_{An} = Chv + Chf_i = 62.975 + 2.760 = 65.735$ lei

The making of rational decisions that can permit the obtaining of optimum results can be made only if it is taken into account the correlation between the fixed costs, the variable costs, the volume of activity and the price of selling of the products (Sorin Briciu, 2006). This correlation in the method direct-costing is expressed by using the following indicators:

1. The point of equilibrium (Pe) - is the point where the revenues cashed from the production sold cover all the variable costs of the production and the fixed costs of the period, so that the enterprise do not obtain any profit or losses. Any increase of the level of the production sold brings more revenue to the enterprise and any decrease of the volume of sales brings losses to the enterprise.

In the e1xample forementioned, when the enterprise obtains more products and is based on a certain structure of production, the point of equilibrium is calculated by taking as a base the medium gross contribution that is calculated as follows:

$$P_e = \frac{ChF}{\overline{c_a}} = \frac{3.000}{0,21} = 14.285,71 \text{ pieces}$$

$$\overline{c_a} = \frac{C_a}{\sum_{i=1}^{n} q_i} = \frac{5.505}{26.100} = 0,21$$

where: Ch F – fixed costs;

C_A – the total contribution of covering;

q_i – the quantity made and sold of each product.

The weight of Bread of rye in the total production obtained and sold: $\frac{13.500}{26.100} = 52\%$

The weight of Bread multicereals in the total production obtained and sold: $\frac{12.600}{26.100} = 48\%$

The point of equilibrium: - Bread of rye: 14.285,71 x 52% = 7.428,57 pieces

- Bread multicereals: 14.285,71 x 48% = 6.857,14 pieces

The point of equilibrium represents the quantity of product that the enterprise must make and sell for the purpose that the cashed revenue to cover the variable costs and the total fixed costs so that the profit or loss to be equal to zero.

2. *The factor of covering* (F_A) – is calculated by reporting the gross contribution to the volume of sales at price of selling, as follows:

$$F_A = \frac{C_a}{D} \times 100 = \frac{5.505}{67.680} = 8,13\%$$

where: F_A – factor of covering;

C_A – total contribution of covering;

D – volume of total sales at price of selling.

For Bread of rye: $F_A = \frac{3.665}{32.400} \times 100 = 11,31\%$

For Bread multicereals: $F_A = \frac{1.840}{35.280} \times 100 = 5,22\%$

This indicator shows how many percents of the volume of sales are necessary for covering the fixed costs and obtaining profit. The enterprises must orient their policy of fabrication and sell to the products with the highest factor of covering.

Knowing the factor of covering, it can be determined the volume of sale at the level of the point of equilibrium:

$$d = \frac{ChF}{F_A} = \frac{3.000}{0,0813} = 36.900 \text{ lei}$$

3. *The dynamic coefficient of safe* (Ks) – is calculated by reporting the difference between the total sales and the sales at the level of the point of equilibrium to the volume of the total sales and multiplying with 100:

$$K_S = \frac{D-d}{D} \times 100 = \frac{67.680-36.900}{67.680} = \frac{30.780}{67.680} = 45,48\%$$

This indicator shows how much can decrease the sales relatively for the enterprise to reach the point of equilibrium. Any decrease under this coefficient makes the enterprise to enter the area of losses.

4. *The interval of safe* (Is) – known under the name of distance or road of safe. This indicator is calculated in absolute figures as a difference between the volume of total sales and the volume of sales at the point of equilibrium:

$I_S = D - d = 67.680 - 36.900 = 30.780$ lei

This indicator shows how much can decrease the sales absolutely so that the enterprise will not enter the area of losses.

The appliance of the method direct costing has some limits, such as:

- the relativity of dividing the costs in variable and fixed because some costs are not strictly variable or strictly fixed, but they are oscillatory from a period to another and the economic financial result can not be established with accuracy;
- the margin of covering has a complex character including the fixed costs and regarding the gross financial result it must be shown that not always the production with the biggest contribution of covering has the biggest profit.

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