Impact of Costing and Cost Analysis Methods on the Result of the Period: Methods Based on Full Cost Theory

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Abstract

Analysis of an enterprise's performance through the net result of the year is not significant because it takes into account financial elements and profit tax. Also, the result of the exercise is directly influenced by:

- Accounting Policies for Recording Consumption, either as an expense in the income statement or as an asset on the balance sheet;

- The ratio between the charges attributable to the products and those considered for the period;

- The costing method used by the enterprise.

Assessing the real effort of the enterprise, its results and its difficulties requires analytical investigation of the outcome of the period, the conditions of training and the determining factors of action.

In light of the above, in the present paper we have proposed that objectives, to approach the methods of calculating full costs (economic or traditional), and comparing them to determine the effect they have on the outcome of the period.

Key words: full cost, traditional cost, economic cost
J.E.L. classification: M41

1. Introduction: theory of calculation methods and cost analysis based on full cost theory

The company's accounting costing, inventory valuation, asset depreciation method and miscellaneous accounting manipulation have a significant impact on the result of the period and indirectly on all other interim management balances (Toma, 2013, p.121). Therefore, the result of the period is determined by:

- the intrinsic factors of exploitation;
- accounting choice in terms of: depreciation systems, inventory valuation, costing methods, etc.

For the same conditions and efficiency of operation, enterprises can record different results due to factors independent of their own effort or market conditions. The analyst needs to identify the two categories of causes to make reliable recommendations for optimizing resource consumption.

The costing method applied to the enterprise has a direct, measurable, but indirect impact on the outcome. Directly, the calculation method affects the revenue by the value of the stored output and the fixed production (expressed in production cost). Indirectly, the influence is reflected in the sale price, when it was based on the cost. The cost "errors" affect the performance of the enterprise in both variants: when higher, the price will be higher than the competitors, which will affect the competitive advantage, respectively the competitiveness of the enterprise; when lower, there is a risk that the sales price will not generate the margin required for normal operation and the company will work at a loss.

The *full cost* of a product is the cost that encompasses all resource consumptions due to its supply, production and disposal. The full cost includes the cost of production plus the general administrative expenses for the products sold and the selling expenses.

In the literature, the concept of full cost can be viewed and computed in two aspects:
- *completely traditional cost* is the cost obtained by incorporating without modification all the general accounting expenses;
- *completely economic cost*, is the cost obtained by incorporating the same expenses after adjusting some of them to bring them closer to the economic reality (Ionescu, 2016,p.111).
In other words, the full economic cost is the completely traditional cost corrected with the incidence of activity level variation (Niculescu, 2003, p.252).

2. Case study on costing and cost analysis methods based on full cost theory

To illustrate the impact of the method of calculating the full cost (traditional or economic) on the result of the period, we accept the simple case of an enterprise producing and marketing two P1 and P2 products for which the following consumption:

Table no.1 Consumption recorded for the production and sale of P1 and P2 products

Nr. Crt.	Indicators	P 1	P 2	Total
1.	Quantity produced (pcs)	3.000	2.600	
2.	Quantity sold (pcs)	2.000	2.000	
3.	Unit selling price (ron / pcs)	17.500	16.750	
4.	Variable production costs (ron)	24.000.000	26.000.000	50.000.000
5.	Fixed direct production costs (ron)	4.500.000	2.600.000	7.100.000
6.	Fixed indirect production costs (ron)	-	-	12.320.000
7.	Variable selling expenses (ron)	900.000	1.300.000	2.200.000
8.	Direct fixed selling expenses (ron)	7.500.000	5.400.000	12.900.000

Source: Adaptation and processing after Niculescu, 2005, 150

The enterprise did not register stocks at the beginning of the period. Fixed indirect manufacturing costs will be allocated based on the quantity produced.

2.1. Determination of the unit cost and the period's result based on the fully traditional cost method

Table no. 2 Determination of the total traditional unitary cost

Nr. Crt.	Indicators	P 1	P 2	Total
1.	Production costs (ron): ~ variables ~ fixed direct ~ fixed indirect	 24.000.000 4.500.000 6.600.000	 26.000.000 2.600.000 5.720.000	 50.000.000 7.100.000 12.320.000
2.	Total production costs (ron)	35.100.000	34.320.000	69.420.000
3.	Unitary Production Cost (ron / pcs.)	11.700	13.200	-
4.	Selling costs (lei) ~ variable ~ fixed direct	 900.000 7.500.000	 1.300.000 5.400.000	 2.200.000 12.900.000
5.	Total selling costs (ron)	8.400.000	6.700.000	15.100.000
6.	Cost of unit sales (ron / pcs)	4.200	3.350	-
7.	Total traditional unitary cost (ron / pcs)	15.900	16.550	-

Source: Adaptation and processing after Niculescu, 2005, 150

Fixed indirect unit costs = $\frac{12.320.000}{2.600 \oplus 3.000}$ = 2.200ron

for P 1 : 2.200*3.000 = 6.600.000 ron; for P 2 : 2.200*2.600 = 5.720.000 ron
Unit production cost = Total production / Production quantity
Unit expense cost = Total selling expenses / Quantity sold
Full traditional unitary cost = Unit production cost + Unit selling cost

Table no.3 Determining the result of the period

Nr. Crt.	Indicators	P 1	P 2	Total
1.	Turnover (ron)	35.000.000	33.500.000	68.500.000
2.	Income from stored production (ron)	11.700.000	7.920.000	19.620.000
3.	Total Income (ron)	46.700.000	41.420.000	88.120.000
4.	Total expenses (ron): out of which	43.500.000	41.020.000	84.520.000
	~ sales	31.800.000	33.100.000	64.900.000
	~ related to stored production	11.700.000	7.920.000	19.620.000
5.	The result of the period (ron)	+3.200.000	+400.000	+3.600.000

Source: Adaptation and processing after Niculescu, 2005, 151

Turnover = Quantity sold x Unit sales price
Stored production = Unsold quantity (stored) x Unit production cost
Total sales related sales = Quantity sold x Traditional full unit cost
Total Stored Production Output = Unsold Quantity (Stored) x Unit Production Cost

2.2. Determination of the unit cost and the result of the period based on the full economic cost method

For the application of this method we admit a normal production capacity of 3.000 pieces for product P1 and 3.250 pieces for product P2. Consequently, the ratio of the rational imputation of fixed expenses will be 1 for product P1 and 0,8 for product P2.

Table no.4 Determining of the total economic unitary cost

Nr. Crt.	Indicators	P 1	P 2	Total
1.	Production costs (ron)			
	~ variables	24.000.000	26.000.000	50.000.000
	~ fixed direct			
	imputed product	4.500.000	2.080.000	6.580.000
	cost under activity	-	-	520.000
	~ indirect fixed			12.320.000
	imputed product	5.913.600	5.125.120	11.038.720
	cost under activity			1.281.280
2.	Total production costs (ron)	34.413.600	33.205.120	-
3.	Unitary Production Cost (ron / pcs.)	11.471,2	12.771,2	-
4.	Selling costs (ron)			
	~ variable	900.000	1.300.000	2.200.000
	~ fixed direct	7.500.000	5.400.000	12.900.000
5.	Total selling costs (ron)	8.400.000	6.700.000	15.100.000
6.	Cost of unit sales (ron / pcs.)	4.200	3.350	-
7.	Total economic unitary cost (ron / pcs)	15.671,2	16.121,2	-

Source: Adaptation and processing after Niculescu, 2005, 152

Cost under activity = Fixed Expenses (1 - Achieved Level / Normal Level) = 2.600.000 (1 – 2.600/3.250) = 520.000 ron
Indirect Fixed Production Expenses: 12.320.000*(3.000+2.600)/(3.000+3.250) = 11.038.720 ron; k = 11.038.720 / (3.000+2.600) = 1971,2 ron/pcs
For P1: 3.000 buc. * 1971,2 ron/buc. = 5.913.600 ron;
For P2: 2.600 buc. * 1971,2 ron/buc. = 5.125.120 ron
Related to sub-activity: 1.281.280 ron
Unit production cost = Total production costs / Quantity produced
Total economic unitary cost = Unit production cost + Unit sales cost

Table no. 5 Determining the result of the period

Nr. Crt.	Indicators	P 1	P 2	Total
1.	Turnover (ron)	35.000.000	33.500.000	68.500.000
2.	Total expenditures (ron)			65.386.080
	~ sales	31.342.400	32.242.400	63.584.800
	~ cost under activity	-	-	1.801.280
3.	The result of the period (ron)			+3.113.920

Source: Adaptation and processing after Niculescu, 2005, 153

Cost under total activity: 520.000+1.281.280=1.801.280 ron
Total sales related costs = Total unit cost x Sale sold

3. Conclusions and proposals

We present the synthesis of the results obtained by the two variants of the full cost calculation method:

Table no.6 Synthesis of the results obtained by the two methods

Method	Period's result (ron)	Value of stored production (ron)	Fixed costs attributed to stored production (ron)
Full traditional cost	+3.600.000	19.620.000	5.620.000
Full economic cost	+3.113.920	19.133.920	5.133.920

Source: Adaptation and processing after Niculescu, 2005, 156

We note that by the two methods presented, the result of the period depends on: the sales achieved, and the level of stored output, the closure of a part of the fixed costs.

The calculation and analysis of the fully traditional cost helps to assess the efficiency and effectiveness of managing resource consumption, respectively, to predict these resources. And, the calculation and analysis of the full economic cost is of interest because it allows establishing a cost unaffected by the level of activity. This cost is more relevant in developing the estimates and in setting the sales price. Also, the cost determination under the activity is aware of the effects of the non-use of production capacities.

4. References

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