

## ASSESSMENT OF PERFORMANCE IN THE BAKERY INDUSTRY — MANAGEMENT SYSTEMS AND ASSESSMENT INDICATORS

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**Abstract:** *Cost calculation methods have a rapid and complex evolution, based on new and new theoretical and practical research. It is obvious that in this context we are the question of identifying the optimal method that can be implemented in the entities of the bakery industry in order to optimize performance, costs and value.*

**Keyword:** performance, rentability, bakery, cost calculation, accounting management

**JEL Classification:** M41, M48

In the most general sense, the concept of performance focuses around three main aspects: the economy, environmental protection and social issues.

Economic performance involves access to capital and the integration of funds in compliance with ethical principles.

Environmental performance aims to reduce industrial pollution, the security of production equipment and installations, product safety so as not to adversely affect health, avoid irreparable resource exhaustion. However, all this involves reducing direct costs, legal risks and accidents, opportunities for the creation of new products and image benefits.

Social performance refers to respect for human rights, equal treatment at work and ensuring optimal working conditions.

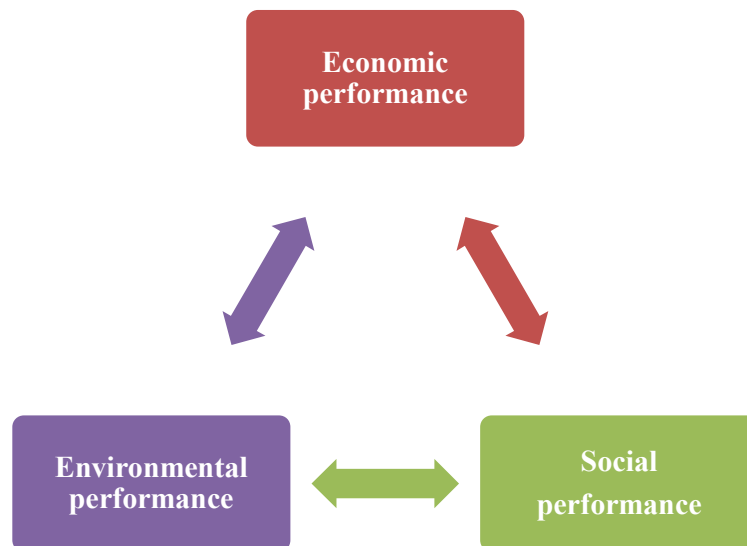


Figure 1. Performance dimensions

Source: adaptation after Reynaud E. (2003), *Développement durable et entreprise: vers une relation symbiotique*, Communication à la Journée AIMS, ESSCA, Angers, May 2003

It is certain, however, that performance is the expression of the optimal results achieved and depends on how the entity's resources are used, the effectiveness of the processes, the organizational management, the culture of the entity and the expectations of stakeholders.

From a purely economic perspective, performance incorporates the concepts of productivity, profitability, efficiency and effectiveness, which it positions in an inclusive relationship, as shown in Figure 2.



Figure 2. The inclusive relationship created by performance

Source: adaptation after Tangen S. (2005), *Demystifying productivity and performance*, International Journal of Productivity and Performance Management, vol.54, no.1, p.43

Quantifying the performance of entities involves both assessing different ways of achieving overall performance and measuring directly carried out on the basis of a performance system, which usually uses established financial indicators (profit, return, funding rates, etc.). However, situations arise when the indicators mentioned are moved forward by the need for permanent and continuous management of planning and control activities, which aspire to a certain level of performance. In this context, new performance assessment systems have emerged, which by improving decision-making, strategic planning and communication have certainly proven their effectiveness<sup>1</sup>.

The cost-volume production – profit relationship in the bakery industry and beyond is subject to performance analysis. It is based on a number of assumptions, of which are of vital importance are the following<sup>2</sup>:

- total costs consist of fixed costs, independent of the volume of production and variable costs;
- the evolution of total revenues and costs follows a linear trend relative to the volume of production, evolving between certain;
- the exact selling price, variable cost/product and fixed costs are known;
- the approach usually targets a single product several products whose overall weights remain constant;
- changes in revenue and costs are recorded only as a result of the change in sales.

<sup>1</sup> Harvey J. (2008), *Performance measurement*, CIMA

<sup>2</sup> Walther L. M. (2017), *Managerial Accounting 2016-2017 Edition*, p.27-38

Gross margin or variable cost margin shall be calculated as the difference between turnover and total variable expenditure recorded for the manufacture of a product. The profitability threshold is equivalent to the sales volume for which turnover equals total operating expenses<sup>3</sup>.

For entities that have homogeneous production, the break-even point is based on the assumption that there is a variable cost/product that does not change immediately and at the same time as the volume of production develops. In other words, irrespective of the change in production volume, variable expenditure/product will remain at a constant level, varying only the volume. Moreover, the selling price is considered to be constant. In this context, the break-even point ( $q_r$ ) is calculated the relationship:

$$q_r = \frac{Fe}{p - V} = \frac{Fe}{mVc} \quad (1)$$

where:

Cf – fixed expenses;

Cv – variable expenses;

p – product selling price;

V – variable costs in relation to production volume, constant per unit of product;

mVc – unit margin on variable costs.

As a result, it means that the break-even level is higher (and more difficult to target) as fixed expenditure is higher.

For the current year, a bakery in the bakery sector included in the forecast situations and the following indicators relative to the targeted production, indicators presented in the table 1.

**Table 1.**

**Products manufactured and sold – forecast situation 2020**

Explanations	Bread 500g	Bread 800 g	Bread 1 kg	Sticks 200 g	Total
Forecast quantity (tons)	1260	240	300	270	2070
Selling price/unit. (lei)	2,10	3,40	4,20	1,30	-
Selling price/ton (lei)	4187,4	4237,25	4187,4	6480,5	-
Fiscal value (lei)	5276124	1016940	1256220	1749735	9299019
Variable cost (lei)	2901868,2	630502,8	665796,6	559915,2	4758082,8
Gross margin (lei)	2374255,8	386437,2	590423,4	1189819,8	4540936,2
Fixed expenses (lei)	-	-	-	-	2138774,37

Source: own processes

In these circumstances, what is the break-even point of the bakery under consideration? The following table summarizes the primary decision-making indicators needed to determine it.

<sup>3</sup> Hilton R.W., Platt D.E. (2018), *Managerial Accounting: Creating Value in a Dynamic Business Environment*, 10th Edition, p. 51-53

Table 2.

## Costs of products produced and sold – forecast situation 2020

Explanations	Bread 500g	Bread 800 g	Bread 1 kg	Sticks 200 g	Total
Variable cost (lei/ton)	2303,07	2627,1	2219,32	2073,76	-
Unit coverage (lei/ton)	1884,33	1610,15	1968,08	4406,74	-
Global coverage (lei)	2374255,8	386437,2	590423,4	1189819,8	4540936,2

Source: own processes

According to the data in Table 2, all the bakery products analyzed make a positive contribution to the profit, i.e. to the coverage of fixed costs, by making a significant contribution to covering them.

From these data, the break-even point can be determined, i.e.:

$$\text{Pr} = \frac{Cf}{\overline{Ca}} \quad (2.)$$

where:

$\overline{Ca}$  - the average coverage contribution, calculated as:

$$\overline{Ca} = \frac{Ca}{\sum_{i=1}^4 Qi} = \frac{4540936,2}{2070} = 2193,69 \text{ lei/ton} \quad (3.)$$

The calculated break-even point is:

$$\text{Pr} = \frac{Chf}{\overline{Ca}} = \frac{2138774,37}{2193,69} = 974,97 \text{ tons} \quad (4.)$$

Assuming that the production structure will be maintained in the future, the structure of the break-even point per product can be determined (Table 3.)

Table 3.

## Break-even structure per product at baker's shop

Product	Weight	Structure of the ptofitability threshold on products (tons)
Bread 500g	60,87	593,46
Bread 800 g	11,59	113
Bread 1 kg	14,49	141,27
Sticks 200 g	13,05	127,24
<b>TOTAL</b>	<b>100%</b>	<b>974,97</b>

Source: own processes

In Table 4, other indicators of interest were calculated for determining the economic and financial performance of the bakery.

Table 4.

## Indicators to assess the bakery performance

Indicator	Calculation method	The value recorded by the bakery
The minimum turnover to achieve the break-even point	$CA_{cr} = \frac{Cf}{Rc}$ $Rc = \frac{Ca}{CA} 100$	$Rc = \frac{4540936,2}{9299019} 100 = 48,83\%$ $CA_{cr} = \frac{2138774,37}{0,4883} = 4380041,72$ lei
Critical period or break-even point over time	$T_{cr} = \frac{CA_{cr}}{CA/T}$	$T_{cr} = \frac{4380041,72}{9299019 / 12} = 5,65 \text{ months}$
Critical production to maximize profit	$Pr_p = \frac{Cf + Pb_{min}}{Ca}$ monetary units $Pr_p = \frac{Chf + Pb_{min}}{Rc}$	$Pr_p = \frac{Cf + Pb_{min}}{Ca} = 1385,23 \text{ tons}$ respectively $Pr_p = \frac{Chf + Pb_{min}}{Rc} = 6223171 \text{ lei}$

Source: own processes

In the case of entities that are at market entry and those that have been re-technological, the fixed costs are high, which is mainly due to the depreciation that is being recorded.

If the share of variable operating costs is high, the economic risk is reduced because, upon a conjunctural decrease in turnover, it will cover lower fixed operating costs.

Profit maximisation can be ensured in the context of successful increase in contribution/coverage and reduction of fixed expenses. Decision makers must take into account that under certain conditions excessive reductions in fixed costs may hinder the normal operation of the entity. The break-even point can also be achieved only if the production of the critical point is below the entity's production capacity. Determining the period after which the critical point is reached influences the economic risk, which is the lower the faster the break-even point is reached. A change in market trend can lead to considerable losses.

Fixed expenses incurred are still incurred from the beginning of the entity's operation. Over time, the sales value changes positively and the hedging contribution will be able to bear all fixed costs. When the contribution of cover reaches the level of fixed expenses, the point of equilibrium is also reached over time.

The bakery makes a profit as early as June 2019 (according to calculations after 5.65 months of the current year). It means that since July the coverage contribution recorded by the entity represents entirely profit..

Certainly, when revenue equates the level of expenditure, the break-even point is reached. However, this is not the main goal for entities because investors usually seek to obtain a return on capital invested above the bank interest rate.

A break-even level and dynamic analysis is useful to the entity at the following times: at the launch of a new product (for the relevant assessment of turnover, production capacity and market absorption capacity), expansion of activity (because it involves additional costs) and upgrading (when fixed costs increase on the basis of depreciation). An analysis of the critical point also offers the possibility of profit anticipation and pricing in concrete context of volume of activity.

The critical point is part of the performance indicators. A reduction of its allows an increase in the entity's ability to gain economic gains. It also allows an assessment of economic risk by

warning decision-makers of the level of profit-loss sharing so that they can intervene to correct, prevent and/or limit the effects of actions that negatively affect the entity's economic-financial outcome.

### **Preliminary conclusions**

In order to meet today's requirements, management accounts have undergone profound changes and have been constantly renewed by proposing innovative methods and techniques in practical work, whose role is to increase the credibility of management decisions, especially supervisory and control decisions. This is why management accounts currently have a strong influence on decision-makers in organizational and social management.

Management accounts shall provide the entity with relevant and timely information on the basis of which the decision-making process operates. It is no longer a mere provider of financial information, but a complex of instruments focusing on strategic management, competition and perspectives.

We are of the opinion that management strategy and management accounting are now part of the same management system, and the cost calculation directed to control and planning is one of the most important components of the performing entity.

Cost calculation provides information that concerns both cost and performance, and is a management tool, a decision-making technique aimed at ensuring the conditions for maximising profitability. However, the cost determination involves a number of constraints generated by the type of activity carried out by each individual entity, the forecast/budgetary management methods, the contractual terms, and the correct perpetuation of the analytical recording system, which must make it possible to compare relevantly between different temporal stages.

Therefore, management accounting is not only a self-standing discipline, which ensures knowledge and control of costs, but also a managerial information support. Understanding, knowledge and control of costs limits their level, thus ensuring the efficiency of the entity's resources and avoiding waste.

Cost calculation methods are rapidly and complex, based on new theoretical and practical research. It is clear that in this context we are addressing the issue of identifying the best method that can be implemented in bakery industry entities with the aim of optimizing performance, costs and value.

The choice of a certain method of calculating costs will always have both advantages and disadvantages, the decision on the use of a particular method being necessary to develop following a detailed analysis of them as well as the precise identification of information needs of managers. It may also not be necessary to change the cost calculation method, only to improve the existing one. This will lead to a cost economy compared to the implementation of a new method, which involves increased consumption of time, financial and human resources. If, however, it is considered necessary to change the calculation method, the preparation of this decision should only be made after the analysis of the relationship between the implementation costs, the costs of opportunity and the long-term benefits.

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