SPECIFICITY OF DETERMINING
THE PROFITABILITY THRESHOLD IN TOURISM
ACTIVITY COMPARED TO
THE PUBLIC FOOD ACTIVITY

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Abstract: *Because we live in a competitive economy, any manager wants to make a profit, and since he cannot influence the price of production factors (labor resources, the labor force, labor objects), nor the price of goods he produces and sells, he wants to be able to control its operating costs and make better decisions for their reduction. Any company in the tourism or public food industry has the goal of maximizing the profits made from the activity carried out and for this the profitability threshold must be determined.*
Key words: *cost of production, critical point, equilibrium point, profitability threshold, risk.*

INTRODUCTION

The profitability threshold is that amount of production sold for which the total revenue is equal to the total cost - in other words, the amount of production sold for which the operating profit is null. Managers are interested in the profitability threshold because they want to avoid operating losses. The profitability threshold tells them the minimum production quantity which has to be sold to avoid losses. (A. Ghelbet, E. Dolinscaia 2015: 102).

The Romanian economist Anca Maria Hristea states that "the profitability threshold is the level of the actual activity at which the enterprise, by its incomes, fully covers its operating expenses", meaning "the profitability threshold is reached when the revenues are equal to the expenses, when the profit is null" (Hristea, A.M 2015: 173)

According to some authors, "knowing the profitability threshold or the equilibrium point helps us to know the point from which an entity must start to earn profit and cover its fixed and variable costs." (Briciu, S., Căpuşneanu, S., Căprariu, A.E. 2013: 62)

"The relationships between fixed costs, variable costs and profit are highlighted by the analysis of the critical point (deadlock, the profitability threshold) which is an operative analysis instrument" (Păvăloaia, W., Paraschivescu, M.D., Lepădatu, Gh 2010: 354)

The profitability threshold analysis represents a planning instrument that highlights where the company is making profit, determining the minimum level of income needed to cover the costs, highlighting the value of loss and profit in relation to this point. (A. Ghelbet, E. Dolinscaia 2015: 102).

The analysis and methods of calculating the profitability threshold vary according to the business activity and can be determined in physical or value units, on a single product, by groups of products or by enterprise. (Nelea Chirilov, Svetlana Mihaila 2016: 92).

The profitability threshold is represented graphically in Figure 1.
In the graph presented in Figure 1 we have the following meanings:
- Ox axis represents the physical volume of production;
- Oy axis represents total expenses and total income;
- Line F – the line of fixed expenses;
- Line C – the line of total expenses;
- Line V – the line of income;
- Point P represents the profitability threshold. (Sabău, Crăciun. Nagy, Cristina Mihaela 2018: 18-19)
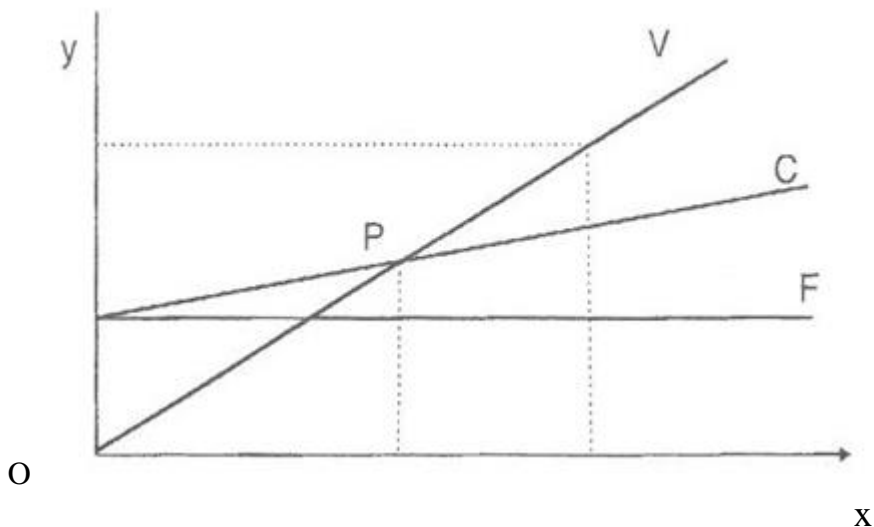
| the loss area | the planned profit area | the profit above the plan area |

„The calculation of the profitability threshold, starts from the above definition, namely from equality between total sales (turnover) and total costs (sum of variable and fixed costs):

$$Ca = Cv + Cf \qquad (1)$$

In the case of homogeneous production, turnover is expressed as a product between the physical quantity of products sold (qv) and the sales price (pv), and the variable costs are expressed as a product between the physical quantity of the products sold and the unitary cost (cv). Replacing in relation (1), the following equation is obtained:

$$qv \times pv = qv \times cv + Cf \qquad (2)$$

From equation no (2) the equilibrium point (q0) expressed in physical units can be deduced, namely:

$$Q_0 = \frac{C_f}{p_v - c_v} \qquad (3.1)$$” (Sabău C, Popovici Florin 2006: 116)

where:
Q_0 – represents the profitability threshold, i.e. the number of portions served in a month to cover total expenses;
Cf – amount of fixed costs;
Pv – unit price of a portion;
Cv – unit variable cost.

$$Q_0 = \frac{Ct}{Tu} \qquad (3.2)$$

where:
$Vt = Ct$,
   and replacing the total revenue (Vt) with the daily rate x the number of people accommodated,
Q_0 – represents the number of people accommodated in a month;
Ct – total expenses incurred in a month;
Tu – rate per person, for one day accommodation.

$$Qpl = \frac{(Cf + Ppl)}{(Pvu - Cvu)} \qquad (4.1.)$$

where:

Q_{pl} - quantities sold each month to make a profit

Cf – represents the amount of fixed monthly expenses;

Ppl – value of the profit planned;

Pvu – unit selling price;

Cvu – unit variable cost.

Ppl = Vpl – Ct, wherefrom the following results:

Vpl = Ppl + Ct No. of people accommodated = Vpl/ rate per day

(4.2.)

where:

Np - Number of people accommodated in a month to obtain a certain planned level of profit (Ppl);

Vpl – planned revenue;

Ct – total expenses;

Tu – rate per person for one day accommodation.

Qmax = (Cf + Pmax)/ (Pvu – Cvu) , wherefrom the following results:

Pmax. = Qmax (Pvu – Cvu) – Cf   (5.1)

Pmax = Vmax – Ct   (5.2)

CASE STUDY

Initial Information	"TURIST" restaurant has a serving capacity of 100 portions per day. He has concluded a convention with a commercial company to ensure that 80 persons are served daily, for 20 days each month. The price is 20 Lei/ portion. The total costs of the restaurant are 25.600 Lei/ month, of which fixed costs are 11.220 Lei/ month.	"Nely" guesthouse has an accommodation capacity of 40 tourists per day. The total costs of the guesthouse are 109.920 lei/ month (30 days), out of which the fixed costs represent 80%. The rate for one night accommodation is 120 lei/ person. In November a number of 1000 persons accommodated - days.
Requirements	a) The profitability rate of the restaurant in November.	a) The profitability rate of the guesthouse in November.
	b) The profitability threshold of the restaurant (Q_0).	b) The profitability threshold of the guesthause.
	c) Quantities sold each month (Qpl) to earn a profit of 8.000 Lei/ month.	c) Number of people accommodated to obtain a planned profit of 24.000 lei/ month.
	d) The maximum profit achieved (Pmax) in terms of the full use of the restaurant's capacity to serve.	d) The maximum profit achieved in the case of full occupancy of accommodation capacity.

	e) Utilization of the restaurant's capacity to serve presented in points a, b, c and d.	e) Utilization of accommodation capacity in the situations presented in points a, b, c and d.
Solution	a) $Rr = (P / Ct)*100 = [(Vt – Ct)/Ct]*100 = [(80*20*20-25.600)/25.600]*100 = 25\%$.	a)$R = Vt – Ct$ $Vt = 1.000$ pers. x 120 Lei/ pers. = 120.000 Lei/ month $Rr = 120.000$ Lei/ month – 109.920 Lei/ month = 10.080 Lei/ month
	b) In the case of public food activity, where fixed costs have a share of less than 50%, of the total costs, the equation 3.1 was used to determine the profitability threshold $Q_0 = Cf/ (Pvu – Cvu)$ $Cvu = Cvt/$ number of portions served monthly = $(Ct – Cf)/80$ portions * 20 days = $(25.600 – 11.220) /1.600 = 9$ Lei $Q_0 = 11.220/(20 – 9) = 1.020$ portions/ month.	b) In the case of tourism activity, where the share of fixed costs exceeds the weight of variable costs, the determination of the profitability threshold was started from the equation 3.2 $Vt = 109.920$ Lei/ month Vt = Daily rate x the number of people accommodated = 120 Lei/pers. x No. of pers. accommodated, wherefrom results: No. of pers. accommodated/ month = 109.920 Lei/ month : 120 Lei/ pers. = 916 pers./ month
	c) To determine the physical volume of sales (Qpl) in order to obtain a certain planned value of profit, in the case of public food services, equation 4.1 was used $Qpl = (11.220 + 8.000)/(20-9) = 1.747$ portions/ month.	c) In the case of tourism activity, to determine the number of people accommodated in a month, in order to obtain a certain value of profit, equation 4.2 is used $Ppl = Vpl – Ct$, wherefrom results: $Vpl = Ppl + Ct = 24.000$ lei + 109.920 Lei = 133.920 Lei No. of pers. accommodated = Vpl/ rate per day = 133.920 Lei/ month: 120 Lei/ pers. = 1.116 pers./ month.
	d) $Pmax. = 100$ portions/ day * 20 days/ month $(20 – 9) – 11.220 = 10.780$ portions/ month.	d) $Pmax = Vmax – Ct$ $Vmax$ = 40 pers. x 30 days x 120 Lei/ days = 144.000 Lei, Ct = 109.920 Lei $Pmax = 144.000 – 109.920 = 95.520$ lei/lună
	e) Usage degree of the restaurant's serving capacity In case a) $(80/100) – 100 = 80\%$; In case b) $(1.020 / 2000)*100 = 51\%$ In case c) $(1.747 / 2000) *100= 87,35\%$ In case d) 100%.	e) Degree of usage of accommodation capacity is calculated with the following equation: Gu = (Used capacity/ Maximum capacity)*100 In case a) $Gu = (1.000$ pers./1.200 pers.)*100 = 83,33% In case b) $Gu = (916$ pers./1.200 pers.) *100 = 76,33% In case c) $Gu = (1.116$ pers./1.200 pers.)*100= 93% In case d) $Gu = (1.200$ pers. / 1.2000 pers.)*100= 100%.

CONCLUSIONS

The analysis of the profitability threshold has general advantages related to the basic rules of profitability of the economic activity and its specific character, being a relevant instrument for information and decision at upper management level, and for monitoring and control - of expenses and achievements - at operational management level.

Analyzing the profitability threshold enables the establishment of production levels for which no losses are registered or for which a programmed level of profit is obtained.

The analysis of the profitability threshold highlights the correlations between the evolution of production, revenues and costs grouped in variable and fixed costs, offering the possibility of differentiating the profits achieved as a result of the change in activity volume, from the ones obtained as a result of its efficiency.

This analysis allows the development of hypotheses and simulations on the evolution of the company's profit.

Any company oriented towards long-term profitable economic activity has the obligation to ensure foresight and balance by successfully utilizing the calculation scenario presented in the given study, benefiting from the information and principles related to the basic profitability rules of any economic activity and more specific rules offered by the analysis of the profitability threshold , which has the task of orienting towards a long-term economic profitable activity and of ensuring predictability and balance in business.

Biblioghraphy

Briciu, S., Căpuşneanu, S., Căprariu, A.E. 2013. Optimizarea profitului în condiţii de criză. În: Economie teore tică şi aplicată, vol. XX, nr.6(583), p.57-73 (Optimizing profit in times of crisis. In: Theoretical and Applied Economics, vol.XX, no. 6 (583), p.57-73)

Ghelbet, E. Dolinscaia 2015. Aplicarea analizei pragului de rentabilitate în practica economică, Meridian Ingineresc, (Ghelbet, E. Dolinscaia 2015. Applying The Profitability Threshold Analysis In Economic Practice, Meridian Engineering). Numărul 1(56)/2015. ISSN 1683-853X, p. 101-107

Hristea, A.M. 2015. Analiza economică şi financiară a activităţii întreprinderii. De la instituţie la ştiinţă. Volumul 1. Ed. a II-a. Bucureşti: Editura Economică, 256 p. (Hristea, A.M. 2015 Economic and financial analysis of the enterprise's business. From institution to science. Volume 1. 2nd Edition. Bucharest: Economic Publishing House, 256 pages)

Nelea Chirilov, Svetlana Mihaila 2016. *Utilitatea analizei relaţiei cost-volum-profit în metoda direct-costing pentru procesul decizional*. Studia Universitatis Moldaviae,

nr.7(97) Seria Ştiinţe exacte şi economice" p.91-96 (Nelea Chirilov, Svetlana Mihaila 2016. *Usefulness of cost-volume-profit relationship analysis in direct-costing method for decision-making*. Studia Universitatis Moldaviae, no. 7 (97). Exact and Economic Science Series" p.91-96)

Păvăloaia, W., Paraschivescu, M.D., Lepădatu, Gh. ş.a. 2010. *Analiza economico-financiară. Concepte şi studii de caz*. Bucureşti: Editura Economică, 391 p. (Păvăloaia, W., Paraschivescu, M.D., Lepădatu, Gh. and others. *Financial and economic analysis. Concepts and case studies*. Bucharest: Economic Publishing House, 2010. 391 pages)

1. Sabău Crăciun, Nagy Cristina Mihaela 2018. *The importance of using the profitability threshold method in trade and service enterprises' management.* The 7th International Conference On Tourism And Sustainable Development Held In Timisoara On 19TH APRIL 2018. "Dimitrie Cantemir" Christian University Bucharest. Faculty Of Management In Tourism And Commerce Timişoara. Editura Eurostampa QUAESTUS NO. 13/ June 2018 Editorial Board Honorary Editors p. 18-24

Sabău, Crăciun. Popovici, Florin 2006. *Contabilitate de gestiune*. Editura Eurostampa. Timisoara 137 pag (Sabău, Crăciun. Popovici, Florin (2006). *Management accounting*. Eurostampa Publishing House. Timisoara 137 pages)

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