

# THE DIAGNOSIS AND EVALUATION OF THE ECONOMIC RISK (OPERATING RISK) IN THE ECONOMICAL ACTIVITY OF THE ENTITIES

## DIAGNOSTICUL ȘI EVALUAREA RISCULUI ECONOMIC (DE EXPLOATARE) ÎN ACTIVITATEA ECONOMICĂ A ENTITĂȚILOR

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**Abstract.** *The diagnosis based on the data from the profit and loss account is not the only possibility to assess the performance of an enterprise, based. There is also a fundamental analysis model, based on the structure of expenses (variable and fixed) in relation to the turnover, a model that will allow the evaluation of the economic (operating) risk of the enterprise. The economic activity of an enterprise obviously requires the existence and the manifestation of the economic operating risk, as a consequence of the fact that one cannot accurately correlate and anticipate the elements of the due result of the operating activity (quantity, cost, price) with the elements of the operating process (supply, production, sales). In other words, the operating risk represents the probability that the income generated by the operating activity may not cover the expenses involved in the process, as a result of their structure. Therefore, risk does not depend only on general factors, but also on the structure of expenses, on their behaviour given the volume of activity respectively, behaviour that influences yield, thus triggering a leverage effect on the result of the operation.*

**Rezumat.** *Diagnosticul pe baza datelor din contul de profit și pierdere nu este singura posibilitate de apreciere a performanțelor întreprinderii, existând un model de analiză fundamentat pe structura cheltuielilor (variabile și fixe) în raport cu cifra de afaceri, model care va permite aprecierea riscului economic (de exploatare) al întreprinderii. Activitatea economică a unei întreprinderi presupune în mod evident, existența și manifestarea riscului operațional economic (de exploatare), ca urmare a faptului că nu se pot corela și anticipa cu certitudine elementele rezultatului aferent activității de exploatare (cantitate, cost, preț) cu elementele procesului de exploatare (aprovizionare, producție, desfacere). Cu alte cuvinte, riscul operațional reprezintă probabilitatea pentru care veniturile degajate de activitatea de exploatare să nu acopere cheltuielile implicate în acest proces, ca urmare a structurii acestora. Așadar, riscul nu depinde numai de factorii generali, ci și de structura cheltuielilor, respectiv de comportamentul acestora față de volumul de activitate, care influențează în mod determinat rentabilitatea, realizând un „efect de levier” asupra rezultatului exploatarii.*

The risk of economic activity or operating risk is in fact the risk determined by a slowing down of the operating (production) yield and it essentially depends on the grouping of the production expenses into fixed and variable expenses and their correct assessment. Economic risk is connected to the structuring of the

operating costs (into fixed and variable costs) and directly depends on the higher or lower weight of the fixed expenses in the total expenses.

## **MATERIAL AND METHODS**

The activity of an enterprise is subject to economic (or operating) risk since it cannot accurately predict the different components of its result (cost, quantity, and price) and of the operating cycle (purchases, processing, sales). By the nature of its activity and its position in the economic environment, the results of the enterprise are influenced by a series of economic-social events: the rise in the energy price, an increase in salaries, the increase in competition, technological advances, etc. Starting to this consideration, in this paper, I tried to explain the importance of the risks concerning the deploy of the any economical activity, witch obviously requires the existence and the manifestation of the economic operating risk. The risk does not only depend on the general factors (sale price, cost, turnover) but also on the structure of the costs, on their behaviour as related to the volume of activity, respectively.

## **RESULTS AND DISCUSSIONS**

### **The flexibility and sensitivity degree**

The flexibility degree depends on the technical potential of the enterprise, on the human potential, as well as on its organisational structure. The fluctuation will be better mastered by the economic agent as the latter displays a high degree of flexibility. Therefore, the risk of the economic activity expresses the volatility of the economic result in the operating conditions. The sensitivity degree of the economic result makes every enterprise a more or less risky investment.

### **The break even analysis**

The cost-volume-profit analysis is a means of measuring risk, also called the break even analysis. The break even analysis became an operating and effective method to evaluate risk in the financial analysis.

Linked to the marginal analysis, the use of the break even (or the balance point diagram) is a highly efficient instrument for outlining both the dependence of the business volume on the production costs and the income gained by the enterprise – or the losses it suffered – in relation to the different volumes of sales.

By pointing out the correlations between cost, price and volume of sales, the break even analysis allows the explanation of certain aspects related to:

- the relative importance of the different categories of costs;
- the way in which these costs vary depending on the volume of production;
- also the means to control these fluctuations;
- the anticipation of the influences generated by the structure changes of production, prices and costs on the profitability of the enterprise;
- the establishment of the production capacity necessary to reach maximum yield;
- the chance to accept or refuse contracts of a certain nature or importance, etc.

The calculation of the break even essentially leads to the establishment of the minimum production volume or of sales from where an enterprise must start to make profit. Moreover, one can also identify the maximum recommended volume production must be expanded to in order to maximise profit, in relation to the production capacity or the investment made. The break even is an instrument that measures the flexibility of the enterprise in relation to the fluctuations of its activity and it is therefore a method to measure risk. Also called “critical turnover” or “operating break even point”, the break even is the moment when the turnover covers the operating expenses and the result is null. After this moment, the activity becomes profitable.

The French literature defines the critical/breakeven point (balance point) as „point mort” or „l'analyse du seuil de rentabilité”, and the English literature defines it as „break-even”, defining the notion of expenses as the sum of the variable expenses due to the volume of activity and the total fixed expenses.

Using the break even point as an instrument to assess risk involves the proper command of the calculus methodology and its cognitive value. In order to analyse this instrument in risk analysis, one must properly know the methodology of calculating the break even, as well as its informational value. The break-even point calculation and analysis methodology differs depending on the following situations:

- a) the study is conducted for a single product or a group of products;
- b) the study is conducted for the entire activity of the enterprise.

The breakeven point analysis methodology for mono-productive enterprises or when we refer to a single product (group of products) relies on the following implicit hypotheses:

- the price for the production factors cannot be influenced;
- the price of the goods produced and sold cannot be influenced;
- fixed expenses do not vary in time;
- the variable expenses are not proportional to the level of activity.

Therefore, the only lever that can be triggered in the enterprise in order to diminish the effects of the operating risk and to increase yield is the level of activity.

- a) **The break even for a single product or a group of products** can be established in physical or value units or in number of days.

For the enterprises that produce and sell a wide range of products, with different costs and prices, the calculation of the break even and its informational value are conditioned by the organisational structure of the expenses and especially the distribution pattern of the fixed expenses. The break even in physical units is operating for mono-productive enterprises.

For the enterprises that manufacture a single product, *the physical units break even* is established starting from the hypothesis of a constant variable cost ( $v = ct$ ) in relation to a growth in the volume of production. This means that regardless of the physical volume of production sold ( $Q$ ), the variable expenses per product unit are constant while their total volume varies (CV).

$$CV = v \times Q$$

Similarly, we also start from the hypothesis of the constancy of the unitary sale price (p), regardless of the volume of sold physical products (Q). In other words, the market absorbs the entire production at the same price.

$$CA = p \times Q$$

Based on these hypotheses, *the break even*, which represents the physical volume of the production sold which covers the total expenses (fixed expenses + variable expenses;  $CT = CF + CV$ ) and the result of the operation is null ( $RE = 0$ ), is established as follows:

$$CA = CT$$

$$RE = \emptyset$$

$$CA = CV + CF$$

$$(p \times Q = v \times Q + CF$$

$$p \times Q - v \times Q = CF$$

$$Q_{PR} = \frac{CF}{p - v}$$

where:

$Q_{PR}$  - the physical volume of the production sold in order to reach the break even (PR);

$p - v$  - the unitary margin on variable expenses (MCV) or the gross margin of accumulation per product unit.

Results in:

$$Q_{PR} = \frac{CF}{MCV}$$

In order to determine the *break even in value* units, the enterprises that manufacture a single product multiply the break even in volume ( $Q_{PR}$ ) with the unitary sale price (p), resulting in the following equation:

$$p \times Q_{PR} = \frac{CF}{MCV} \times p$$

but

$$\frac{MCV}{p} \times 100 = R_{MCV}$$

where

$R_{MCV}$  – the margin rate on the variable cost results in:

or

$CA_{PR} = Q_{PR}$
$CA_{PR} = \frac{CF}{R_{MCV}}$

According to the last equation, the break even represents the value of the turnover for which the sum of the fixed expenses equals the absolute margin on the variable cost. The establishment of the break even in the decisional process is of particular interest as it signifies the calendar date when break even is reached.

$PR_{days} = \frac{CA_{pr}}{CA_{realizat\acute{a}}} \times 360$
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The break even analysis on products reveals the profit and the yield rate for each sort, as well as the path to take in order to increase this rate.

***b) The break even analysis for the entire activity of the enterprise*** is conducted for a large range of products.

For heterogeneous production, on the level of diversified production respectively, the break even is measured by means of value indices:

*Critical turnover ( $CA_{CR}$ ):*

$CA_{CR} = \frac{CF}{1 - \frac{CV}{CA}}$
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where:

CF - sum of fixed expenses;

CV - sum of variable expenses

$\frac{CF}{CA}$  - variable expenses for 1 leu turnover:

*The use of the manufacturing capacity at critical point ( $G_{CR}$ ):*

$$G_{CR} = \frac{CA_{CR}}{Q_{max}} \times 100$$

where:

$Q_{max}$  = the manufacturing capacity expressed in value units;

*Critical time period ( $T_{CR}$ ):*

$$T_{CR} = \frac{\frac{CACR}{CA}}{\frac{CA}{T}}$$

where:

$\frac{CA}{T}$  – average turnover per time unit (day, month, year)

The indices presented above are thus calculated in the hypothesis of a linear activity, without considering the seasonal factor.

In practice, enterprises often record a seasonal trend of income, as the turnover varies from one time period to another during a financial exercise. Thus, the break even point will be established in relation to the moment when the gross margin on the cumulated variable expenses covers the fixed annual expenses.

## CONCLUSIONS

Knowing and anticipating the risks and the effects they generate is a fundamental prerequisite of success in business and, implicitly, indispensable instruments for the effective management of any enterprise.

The operating risk also represents the impossibility of the enterprise to adapt in time and at the lowest cost to the changes in the environment. The economic risk evaluates the possibility of recording (gaining) an insufficient result or even some losses.

The quantification of the risk and the company uncertainty, as well as the determination of the influences that they have over the economical phenomena, represent a permanent problem for the decision factors which coordinate the activity in companies. It is obvious that the decisions are fundamental and pertinent, when the one who adopts them, as well as those who apply them, are well informed and capable of mastering the effects of change in a satisfactory way.

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