

ANALYSIS OF THE INFLUENCE OF A COMPANY’S INDEBTEDNESS ON THE FINANCIAL RISK

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Abstract

Awareness of indebtedness and financial risk represents a great importance not only for the management of the company but also for creditors, investors, institutional investors, rating agencies, etc. An indebtedness analysis implies its effect on financial risk through financial lever coefficient or the financial lever. A financial lever is a notion originating in physics and it is the force that is applied in order to give a boost of a process or a phenomenon. However, in economics that notion was adapted and can be regarded as the strenght of different financial categories, financial instruments used in order to give a boost in a certain sense to various economic processes or activities in order to achieve the established objectives. More specifically we can say that the financial lever or the financial leverage expresses the impact of the financial structure over the company’s profitability.

The research aims at analysing indebtedness and its influence over the financial risk and all the aspects underlined in the present article will prove the assumption that a company's performance and its capacity to produce profit depends mainly on the management and the use of financial resources. The purpose of present article is to highlight the impact of indebtedness over financial risk through the financial lever. The main objectives of the article set out to achieve this purpose are: the theoretical approach of a company's overall indebtedness, the analysis of the financial levers, and the analysis of the positive and negative leverage effects.

Keywords: *indebtedness, financial risk, financial lever, financial return, rentability*

JEL Classification: *G32 Financing Policy • Financial Risk and Risk Management • Capital and Ownership Structure • Value of Firms • Goodwill*

1. Introduction

Risk analysis at the microeconomic level and particularly the economic, financial and bankruptcy risk is a constant concern of specialists in the field, these aspects are in line with all the other risks which occur in different areas of activity of the company. This article aims at providing preliminary guidance relating to financial risk and thereby at influencing indebtedness on the financial risk.

Risk is an inherent component which comes in the process of an economic activity, at all levels, and that is based on a complex of factors. Due to the significant potential impact of these risk factors on the results of the enterprise and the impossibility of their full control by the enterprise, risk analysis is an important dimension of strategic management of the enterprise that presumes the following sequence of steps: risk identification, analysis and risk assessment, determination of primary interventions to limit risk and risk treatment.[4]

Financial risk is defined as “the variability of result indicators within the scope of the financial structure of the company”. [5] This type of risk occurs and manifests itself when the economic rate of return is lower than the interest rate on loan capital.

Taking into consideration the influence of the company indebtedness upon the profitability of capital, an analysis of the financial risk can be done on the basis of financial lever or financial leverage.

The financial leverage expresses the impact of the financial rentability of the capital assets of the company as related to the correlation between the rate of economic rentability and the debt cost or interest rate as well as to the degree of indebtedness.[5]

Leverage is the positive effect of funding a company also by resorting to loans, thus ensuring a higher financial rentability rate of capital as compared to the situation in which one would have turned down loans; in other words, the loan produces a higher return than the payable interest.[7]

We can also state that leverage effect is a technique of financial management by means of which the board of a company tries to improve the rentability of the company's capital. This technique is used in order to determine the volume of the company's own resources, the borrowed or attracted capital used during the operation activity, major issues that mark on the growth or the reduction of a company's indebtedness.

The main objectives of the present research paper are:

- an analysis of the influence of the indebtedness on the financial risk;
- an identification of situations arising from the correlation between the economic rentability rate and the interest rate;
- an analysis of the favourable effect of the financial lever;
- an analysis of the unfavourable effect of the financial lever;
- submitting the conclusions on the company debt and its effects on the financial risk.

Concerning the contribution of the research to the development of economic theory and economic practice, we believe that by elaborating this article we have expanded our field of analysis on financial risk and the company indebtedness, creating a friendly environment for debates and discussions on the subject. The frequency with which the approach appears in scientific papers has led us to believe that the risk analysis and the analysis of the company indebtedness represent the key aspects of the economic and financial activity of a firm.

2. Materials and methods

In the justification of the theory of this article we start from the presentation of the definitions of the key elements of this research, definitions which are meant to indicate the precise meaning of the terms listed above. After the presentation of these definitions we have exhibited a number of issues which provide information about the behaviour of key elements of the study. In the economic theory and practice there is a wealth of possibilities to approach and analyse this theme, so our way of approaching and analysing supplements develops the present and previous studies related to the topic.

We have used various methods in reaching the objectives of this article. There have been used and combined different methods of research specific to the economic area such as: the method of the combination of analysis and synthesis, the deductive method, the historic method, the method of the combination of the quantitative and qualitative analysis.

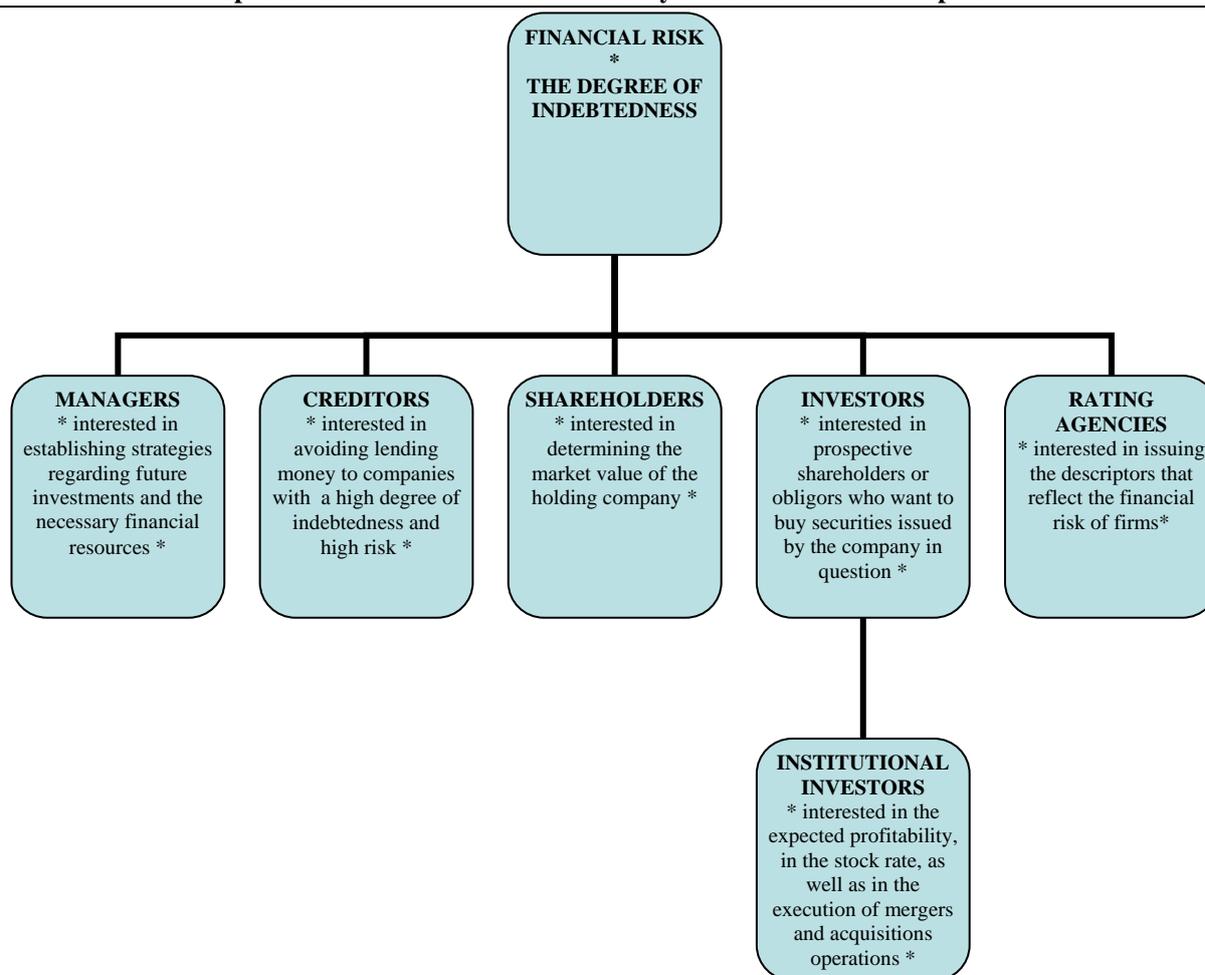
In the first phase of realizing this article I have established the theme which is to be presented and developed taking into consideration the importance of the subject and the bibliographic sources that we have. I have used an analysis which combines theoretical and practical.

3. The body of the paper

3.1. Financial risk analysis-theory and methodology

Due to complex and dynamic competitive environment, companies face a number of difficulties and uncertainties related to a multitude of issues such as: investments, funding, interest rates, obtained loans etc. Thus, any company must pay special attention to all these items because they all converge towards materialization in a higher or lower grade of the financial risk, which can cause restriction or suspension of access to bank credit and funding on the capital markets.

Knowledge of the level and the degree of influence of financial risk, as well as the degree of indebtedness of a company are very important aspects for a multitude of participants in the economic and financial environment of a company. They can be represented using a synthetic graphics (Scheme no. 1):



Scheme no. 1

Schematic presentation of the participants in the economic and financial activity of the company interested in the financial risk and indebtedness

Source: personal resource

Financial risk reflects the variability of resulted indicators as a change in the financial structure of the enterprise. [1]

Financial risk assessment can be made on the basis of the global profitability threshold which takes into account financial expenses, interest expenses that at a certain level of activity are considered fixed costs on the basis of financial leverage.

Overall profitability threshold is the point at which the net turnover (CA) covers the expenses used during the operation activity (fixed and variable) plus interest expenses, and the result is null or zero profit. After exceeding this threshold, the company's activity becomes profitable. The calculation formula is:

$$CA_{cr} = \frac{\text{Total expenditure (fixed and variable)} + \text{Interest expenses}}{1 - \frac{\text{Variable expenses}}{\text{Turnover}}} \quad (1)$$

where:

CA cr - critical turnover;

$$\text{Margin rate of variable expenses} = 1 - \frac{\text{Variable expenses}}{\text{Turnover}} \quad (2)$$

Financial leverage is also called the general rate of borrowing or leverage ratio and expresses the company indebtedness in relation to equity and it is defined as the ratio between total liabilities and long-term debts and equity. At the same time financial leverage highlights also the ability of financial managers to attract external resources for capital efficiency.

$$\text{Financial leverage} = \frac{\text{Net debt}}{\text{Equity}} \cdot 100 \quad (3)$$

Net debt represents interest-bearing debts, including debts related to financial leasing and excludes cash funds and cash equivalents. This rate must have a subunitary value. If it registers a subunitary value it means that the company has a high degree of indebtedness. Where a rate exceeding the threshold value of 2,33 it means that the value of bank loans represents 70% of the total assets, expressing a very high degree of indebtedness, the company being even close to the stage of imminent bankruptcy if the result repeatedly exceeds the threshold of 2,33.

The indicator that highlights the additional benefit of company equity in relation to the volume of borrowed resources are financial leverage or the effect of indebtedness. It highlights the influence of the company indebtedness over the profitability of company equity (net profit/company equity x 100).

In view of the link between the economic rentability, the gap between economic profitability and the interest rate, and the financial leverage we can say that the financial profitability is determined by the ratio:

$$R_f = R_e + (R_e - R_d) \cdot \frac{\text{Net debt}}{\text{Equity capital}} \quad (4)$$

where:

R_f - financial rate of return;

R_e - economic rate of return;

R_e-R_d - the gap between the economic rate of return and interest rate;

$\frac{\text{Net debt}}{\text{Equity capital}}$ - financial leverage (LF) or indebtedness;

(R_e-R_d) · LF - financial leverage effect or the leverage effect of indebtedness.

This relationship links the financial profitability to the global financial profitability of the company (economic profitability), to the loan costs incurred by the enterprise (the interest rate) and to the extent of the indebtedness (leverage, L = DAT > 1 year/ CPR) and highlights the influence of loans over the profitability obtained by the owners. Leverage shows indebtedness of equity capital and it is an expression of the additional risk assumed by shareholders through indebtedness, risks for which they will charge a risk premium, additional wages (in the form of financial leverage effect of borrowing). Possible situations:[8]

a) When **Rec > R_{dob}**, the company undertakes efficient use of borrowed from creditors and gets a rentability of assets financed from these sources sufficiently consistent as to cover the cost of debts (R_{dob}) and for additional pay of shareholders (via the leverage effect). In this case, the effect on indebtedness upon the financial rate is positive and the increase of indebtedness leads to increasing the financial rate, but only as long as the Rec > R_{dob}; thus, shareholders are paid more than the average level of profitability of the company (economic profitability).

b) The maximum point to which a company can accumulate debt is the case in which **Rec = R_{dob}**. As a result, the leverage effect is 0 and the financial rentability = economic profitability. In this case, shareholders are paid at the average level of profitability of the company. Beyond this point debt has a negative effect on financial profitability.

c) When **Rec < R_{dob}**, the company does not get enough rentability out of exploiting the assets it possesses, or the financial rentability < economic profitability, shareholders are paid below the average level of profitability of the company. The increase of indebtedness (of the lever) leads to an even lower financial profitability.

The main factors that may influence leverage effect could be:

-economic rate of return as determined in turn by the level of profit from operating activity and the value of the assets controlled;

-the rate of tax to taxable profit determined by government authorities in accordance with the macroeconomic and fiscal policies;

-the financial structure of the entity reflected by the ratio between the capital attracted by indebtedness to creditors of financial and company equity. In case the entity has used debt as a form of financing, it supports financial expenses representing the cost of attracted indebted resources.

The recognition in the financial statements of expenditure concerning financial interest entails a financial leverage effect, which reflects the positive or negative impact of the decision of financing a company by debts, upon the rentability of equity capital of the entity and upon the financial or operational risks concerning the business.

3.2. The influence of the borrowing on the financial risk and default on financial profitability

Generally, a company's capital consists of two main components: equity and borrowed capital, the two being clearly different in terms of cost they entail. In the dedicated literature the effect of indebtedness on the benefit is known as the leverage effect, a name which derives from the fact that loans represent a lever influencing the profitability of equity capital.

Financial structure rates reflect the different relationships between chapters within a company's balance sheet, essentially by comparing its equity with the attracted capital. By means of these rates the funding policy of the enterprise is underlined.[3] The most commonly used financial structure rates are as follows:[9]

-borrowing rate: calculated in two forms, both as a ratio between total debt and total capital, as well as a ratio between debt and company equity; generally, it is about mid-term and long-term debts and the total capital or the permanent capital;

-financial autonomy rate: complementary rate to the former, it represents the ratio between equity and total or permanent capital;

-financial stability rate: calculated as a ratio between the permanent and the total capital of the company.

Data necessary to calculating the indicators required in the study have been extracted from the situations displayed on www.bvb.ro dated February 15, 2015 (Table no. 1).

Table no. 1 The value of the indicators used in the study

Nr. crt.	Name of the indicator	2013	2014	Deviation 2014/2013
1.	Total asset (lei)	40.047.000.000	43.125.000.000	+3.078.000.000
2.	Equity capital (lei)	26.641.680.000	27.005.280.000	+363.600.000
3.	Net debt (lei)	332.000.000	890.000.000	+558.000.000
4.	Net profit (lei)	4.821.000.000	2.103.000.000	-2.718.000.000
5.	Indebtedness (%)	1,25	3,3	+2,05

Data source: <http://www.bvb.ro/FinancialInstruments/Details/FinancialInstrumentsDetails.aspx?s=SNP>

Rentability of equity capital is calculated through the ratio:

$$RC_p = \frac{\text{Net profit}}{\text{Equity capital}} \times 100 \quad (5)$$

In the case of SC OMV PETROM SA this registers the following figures:

$$RC_{p_{2014}} = \frac{\text{Net profit}}{\text{Equity capital}} \times 100 = \frac{2.103.000.000}{27.005.280.000} \times 100 = 7,80\% \quad (6)$$

$$RC_{p_{2013}} = \frac{\text{Net profit}}{\text{Equity capital}} \times 100 = \frac{4.821.000.000}{26.641.680.000} \times 100 = 18,10\% \quad (7)$$

Economic profitability built on the basis of net profit records the following figures:

$$RRe_{2014} = \frac{\text{Net profit}}{\text{Total asset}} \cdot 100 = \frac{2.103.000.000}{43.125.000.000} \cdot 100 = 4,87\% \quad (8)$$

$$RRe_{2013} = \frac{\text{Net profit}}{\text{Total asset}} \cdot 100 = \frac{4.821.000.000}{40.047.000.000} \cdot 100 = 12,04\% \quad (9)$$

The economic profitability of SC OMV PETROM SA must pay its creditors and shareholders in accordance with the risk assumed by investing in the company or granting the loans.

As for the interest rates, it expresses the profitability from the point of view of creditors who make available to companies loan capital, being paid by interest. In the case of the study company the interest for 2014 is 3.32% and in 2013 the interest is 4.43%.

In order to calculate the rate of financial rentability we must also analyse the financial structure of SC OMV PETROM SA, which is determined as follows:

$$SFin_{2014} = \frac{\text{Total asset}}{\text{Equity capital}} = \frac{43.125.000.000}{27.005.280.000} \cdot 100 = 1,5969 \quad (10)$$

$$SFin_{2013} = \frac{\text{Total asset}}{\text{Equity capital}} = \frac{40.047.000.000}{26.641.680.000} \cdot 100 = 1,5032 \quad (11)$$

So starting from the two relationships, the financial rate of return can be determined and after the relationship:

$$RRFin_{2014} = \left(\text{Economic profitability} \cdot \frac{\text{Total asset}}{\text{Equity capital}} \right) \cdot 100 = 4,87 \cdot 1,5969 = 7,78\% \quad (12)$$

$$RRFin_{2013} = \left(\text{Economic profitability} \cdot \frac{\text{Total asset}}{\text{Equity capital}} \right) \cdot 100 = 12,04 \cdot 1,5032 = 18,10\% \quad (13)$$

Relations 6, 7 and 12, 13 can be translated into Du Pont system and the financial rate of return can be determined as follows:

$$\begin{aligned} RRf_{2014} &= \frac{\text{Net profit}}{\text{Equity capital}} \times 100 = \left(\frac{\text{Total assets}}{\text{Equity capital}} \times \frac{\text{Net profit}}{\text{Total asset}} \right) \times 100 = \\ &= \left(\frac{43.125.000.000}{27.005.280.000} \times \frac{2.103.000.000}{43.125.000.000} \right) \times 100 = 1,5969 \times 4,87 = 7,78\% \end{aligned} \quad (14)$$

$$\begin{aligned} RRf_{2013} &= \frac{\text{Net profit}}{\text{Equity capital}} \times 100 = \left(\frac{\text{Total assets}}{\text{Equity capital}} \times \frac{\text{Net profit}}{\text{Total asset}} \right) \times 100 = \\ &= \left(\frac{40.047.000.000}{26.641.680.000} \times \frac{4.821.000.000}{40.047.000.000} \right) \times 100 = 1,5032 \times 12,04 = 18,10\% \end{aligned} \quad (15)$$

Interested in the evolution of the rate of return, financial managers are able to influence it by the acting upon: [8]

- sales generated by the use of assets;
- financing mode of assets by means of equity capital and loans;
- net income profitability.

The gap between the rate of return economic and interest rate:

$$E_{Re/Rd2014} = Re - Rd = 12,04 - 3,32 = 8,72\% \quad (16)$$

$$E_{Re/Rd2013} = Re - Rd = 4,87 - 4,43 = 0,44\% \quad (17)$$

where:

$E_{Re/Rd2014}$ - the gap between the rate of return economic and interest rate.

In order to reflect the influence on the rate of return financial indebtedness, it is necessary to determine the financial lever (indebtedness), which is determined as the ratio between net debt and equity, as follows:

$$LF(GI)_{2014} = \frac{\text{Net debt}}{\text{Equity capital}} \times 100 = \frac{890.000.000}{27.005.280.000} \cdot 100 = 3,30\% \quad (18)$$

$$LF(GI)_{2013} = \frac{\text{Net debt}}{\text{Equity capital}} \times 100 = \frac{332.000.000}{26.641.680.000} \cdot 100 = 1,25\% \quad (19)$$

The effect of indebtedness reflects the influence of interest on loans, the impact on profitability. The effect of indebtedness changes the level of financial profitability in the sense of increasing or decreasing, the same way as economic profitability is superior or inferior on the average cost of debt.

Considering the above relations, the illustration of the company's indebtedness by determining the rate of return on the basis of financial leverage effect or financial leverage is calculated as follows:

$$\begin{aligned} RF_{2014} &= [Re + (Re - Rd) \cdot \text{financial leverage}] \cdot \left(1 - \frac{\text{tax listing}}{100} \right) = \\ &= [4,88 + (4,88 - 3,32) \cdot 3,3] \cdot \left(1 - \frac{16}{100} \right) = 7,80\% \end{aligned} \quad (20)$$

$$\begin{aligned} RF_{2013} &= [Re + (Re - Rd) \cdot \text{financial leverage}] \cdot \left(1 - \frac{\text{tax listing}}{100} \right) = \\ &= [12,04 + (12,04 - 4,43) \cdot 1,25] \cdot \left(1 - \frac{16}{100} \right) = 18,10\% \end{aligned} \quad (21)$$

The above results can be summarized (table no. 2):

Table no. 2 Synthesizing results obtained

Nr. crt.	Name of the indicator	2013	2014	deviation 2014/2013
1.	Indebtedness (%)	1,25	3,3	+2,05
2.	Equity rate or financial rate of return (%)	18,10	7,80	-10,3
3.	Economic rate of return (%)	12,04	4,88	-7,16
4.	Financial leverage	1,25	3,3	2,05
5.	Leverage effect	9,96	5,15	-4,81

From the point of view of the enterprise that asks for the loan, there is a risk of failing to meet payment obligations to lenders and a large amount of debts receivable outstanding can make insolvent resulting in bankruptcy and the loss of equity. This aspect of the practice of borrowing is known as the financial risk and the higher the proportion of loan capital and interest are the lower the economic profitability is. The share of the funding structure of the indebtedness of the enterprise depends on its development strategy, the situation of the existence at a time on the financial market and the prospects of its development in the future. Even in the case of high rates of interest and so has a high cost of capital borrowed, you can't get leverage, through the judicious selection of the activities financed through debt, ensuring the use with maximum efficiency and speed up the rotation the whole capital.[10]

4. Results and conclusions

The opinions of the experts converge towards risk normality, this matter being a normal constitution in business world. Its disappearance creates confusion, inefficiency and generates unnatural behavior of enterprises, fact that was ascertained in the totalitarian regimes, when the economy has been led through leading levers of an administrative nature. The multitude of factors, which generate business risk, determines its manifestation in different states: market risk, economic risk, financial risk, technological risk exchange risk, bankrupting risk.[2]

In terms of financial risk, in general you can set several general reduction measures:

-increase economic performance whose values must be overcome with more borrowed capital costs in order to avoid the manifestation of the financial risk;

-adopting a financial structure in which to be avoided increasing indebtedness, but not increasing the profitability of the economy;

-increase the recovery of production;

-increase turnover and achieve superior returns and trade;

-increasing the speed of rotation of the economic assets by increasing the patrimonial elements as needed and by increasing the share of current assets, which can reproduce more quickly through turnover.

By the analysis of economic profitability and the rate of interest shall be deducted the following aspects:

-in both 2013 and 2014 spread Re/Rd is positive favorable situation for the company, which is reflected by the level of profitability of financial ratio in 2013 was 18,10% and 7,78% in 2014;

-in the case of these positive differences, borrowing the firm has no negative effect on the rate of financial return, and OMV PETROM SA may lend benefiting from leverage.

From the results obtained from SC OMV PETROM SA we draw the following conclusions:

-indebtedness has increased in 2014 compared with 2.05%, 2013 aspect appreciated unfavorable for the company;

-low financial rate of return in 2014 from 2013 with 10.3% which denotes the fact that the organisation has adopted a policy regarding the insufficient funding sources demonstrated and reducing leverage with -4.81%;

-low economic rate of return in 2014 from 2013 is -7.16% with work due in particular to the decrease in net profit by about 50% in 2014 from 2013.

The “10 threats” in the case of not evaluating the risk: [12]

1. The location of the business. It is connected to the marketing policy: assume nepromovarea of ads triggered a market fair and favorable product sales.

2. Too much capital in fixed assets. The efficiency of the use of fixed assets is low.

3. lack of capital. He also made investments in fixed assets are too large and there are no longer enough working capital to continue the process of production.
4. problems with the loans. There are no resources for debt repayment.
5. The mismanagement of stocks. Doubling sales do not involve doubling stocks. Stocks will rise only 1/4 times.
6. uncontrolled Expansion. Product launches on a market that has not been researched in advance.
7. inadequate Capitalization. It is determined by the risk task. If the risk is high, the dividends demanded by investors will be big. Profit from the dividend and invested will be small.
8. Lack of experience and skill. There is no interest in raising the level of professional training of the employees.
9. problems with the staff. If the work goes bad the staff will be tempted to find another job.
10. The bureaucracy. It is found in activities whose results are no longer satisfactory.

The "7 success factors" in case of risk assessment:[11]

Specialists have examined the factors which determine the success of an enterprise. They believe that if you follow certain conditions, performance is assured. The conditions laid down are:

1. The trend towards action. Every employee is able to act on a daily basis, without waiting for orders from anyone.
2. Proximity to the client for understanding its needs. Production activity must have a double goal: achieving a superior quality product and meeting the needs of a specific segment of consumers.
3. Autonomy in decision-making. All work must be divided into chapters which they know exactly what to do and where to actually take the decisions.
4. simple and Leadership based on values. Americans call this K = "keep things simple" (from keep it short and simple).
5. The attainment of the proposed or referred to as plastic "according to model, vegetal fiber plaiting. The idea is that a new product is launched only in a market known, and a new market are only sells a product already known. A new product is launched on a new market, because the risk is very high.
6. A well-trained and dedicated staff. The activity involves a chain of people involved in the production process from the initial supplier to end customer. If everyone is interested in the activity carried out and submit a quality work, the risk that in the process of production interruptions occur is very small.
7. An inspection as soon as possible of the activity. No aspect of control should not be neglected in any phase of activity.

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