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# FINANCIAL RISK PART OF EFFICIENCY RATE VARIATION RELATED TO EQUITY

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## Abstract

Every enterprise develops the activity using both equity and borrowed capital, different one by the other through the generated/engendered costs.

The financial risk determines the variability of result indicators, thanks to the financial structure of enterprise modification<sup>1</sup>.

Due the lack of own resources, in order to activity development, the enterprise uses the loans in order to achieve the oportunity of one investment.

**Keywords:** financial risk, interest, debts, equity, interest ratio, capital

An enterprise which appeals to loans must to endure from the results also the financial expenses afferent to the respective loan. Due this fact, indebting/obliging , through it dimensions and cost, determine the results modifications, therefore modify the financial risk.

To an enterprise level, the investment decision generates the economical activity risk(by increasing of fixed costs) , and the financing decision generates the financial risk

The financial risk takes into account also the influence of capital's structure, respectively the indebting degree of one economic agent.

If for a certain capital need, the financial expenses( interest) are fixed expenses, then the financial risk could be evaluate through a global rentability threshold, as the following formula<sup>2</sup>:

$$RF = \frac{CF + Dob}{1 - \frac{CV}{CA}} \quad \text{or} \quad RF = \frac{CF + Dob}{Rmcv}$$

Consisting of :

CA- sales/turnover ;

CF- fixed expenses ;

Dob- interest ;

CV – variable expenses ;

Rmcv – variable expenses margin rate;

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<sup>1</sup>Popa I. E., Financial-accounting mechanism of provisions , Risoprint P.H, Cluj-Napoca, 2003, page. 82.

<sup>2</sup> Căruntu C., Tănăsioiu G., Căruntu G., Financial management.Theory and applications, Academica Brâncuși P.H, Tg-Jiu, 2003, page. 134.

The financial risk's evaluation are made simillarious to the exploiting risk, with the helping of the following indicators :

- the safety margin;
- the safety index;
- the elasticity coefficient.

If it modifies the return of equity, the analysis of this modification due the financial policy could be pursuit with the aid of a model entitled “financial leverage effect”<sup>3</sup>.

The financial leverage measures the impact of credit's quantization (in order to finance an investment) over its financial rentability.

The financial leverage effect, namely the variation of equity return depends on the correlations which exist between the return of assets and the debt cost or interest rate, on a side and the debt level on the other side.

Starting from balance sheet structure, respectively the rentability rates presented in figure no.1 could be illustrate the computation modalities of financial rentability starting from the economical rentability, accentuate, same time the influence of “leverage effect”<sup>4</sup>.

$A_e$ ( $r_e$ )	$C_{pr}$ ( $r_f$ )
	$Dat$ ( $r_d$ )

Figure 1. Accounting Balancesheet and the appropriate rentability rates

Consisting of:

$A_e$ = economic active ;

$r_e$ =assets return;

$C_{pr}$ =equity ;

$r_f$ = financial rentability rate ;

$Dat$ =debts ;

$r_d$ =interest.

If the economical agent analised is profit taxation exempt , then the exercise result ( $R_{ex}$ ) could be determine as difference between the exploiting result ( $R_{ex}$ ) and the interest (Dob) paid for the borrowed capital (Dat):

$$R_{ex} = RE - Dob$$

The exploiting result is obtained from the calculation relation of assets return ( $r_e$ ):

<sup>3</sup>H. Cristea, M. Pirtea, C. Enache, Establishment of enterprise's financial situation .Studies and problems. Mirton P.H , Timisoara, 2000, page. 58.

<sup>4</sup> Căruntu C., Tănăsioiu G., Căruntu G., Financial management . Theory and applications, Academica Brâncuși P.H, Tg-Jiu, 2003, page. 138.

$$r_e = \frac{RE}{A_e} \Rightarrow RE = A_e \times r_e$$

If all these dates are replaced in the calculation relation of financial return, will be obtaining the following formula :

$$r_f = \frac{R_{ex}}{C_{pr}} = \frac{RE - Dob}{C_{pr}} = \frac{A_e \times r_e - Dat \times r_d}{C_{pr}}$$

It si remarked that the economic active is entirely financed from the equity and the lended/borrowed capital ( $A_e = C_{pr} + Dat$ ). In this case the foregoing relation will become:

$$r_f = \frac{(C_{pr} - Dat) \times r_e - C_{pr} \times r_d}{C_{pr}} = r_e + (r_e - r_d) \frac{Dat}{C_{pr}}$$

It is considered the following relationship on which will be build the following relation :

$$\begin{aligned} V_f + V_{ex} - I_{mp} &= 0 \\ C_f &= Dob \end{aligned}$$

Consisting of :

$V_f, V_{ex}$  – financial incomes ,respectively extraordinary incomes ;

$C_f, C_{ex}$  – financial expenses , respectively exceptional expenses ;

$I_{mp}$  – profit tax .

If in the mentioned relationship are introduced the profit tax rate ( $t$ ) then the financial rentability rate becomes :

$$r_f = \left[ r_e + (r_e - r_d) \frac{Dat}{C_{pr}} \right] (1-t)$$

The indebting rate,as it is known under the title of leverage rate illustrates the influence which indebting detains over the equity rate of enterprise.

In financial theory are made the distinction between the rate of equity named also the financial rentability ratio<sup>5</sup>.

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<sup>5</sup> Ion Stancu, Finance, financial market and securities administration. Real investments and its financing. Analysis and financial administration of enterprise . The 3 rd edition Economic P.H , Bucharest, 2002.page. 107.

Computed on the enterprise's capital basis, the financial rentability ratio could be describe through the following formula:

$$r_f \frac{(r_e \cdot K_t - d \cdot K_i)}{K_p} = \frac{r_e(K_i + K_p) - d \cdot K_i}{K_p} =$$

$$\frac{K_i(r_e - d)}{K_p} + r_e = G(r - d)$$

Consisting of :

$K_t$ - total capital;

$K_i$ - borrowed capital;

$K_p$ - equity;

$d$  - interest ratio

$$G = K - K_p$$

$G$ - indebting ratio

Thereby if :

1.  $r_f < 1$  – the leverage effect acts unfavourable, the economic rentability /return of assets being lower then the debt cost, thereby the equity rentability decreases when the enterprises increase the indebting rate;

2.  $r_f = 1$  – the indebting course don't modify the equity rentability;

3.  $r_f > 1$  – the leverage effect acts on enterprise's advantage, the rentability is an increasing function of leverage ratio, the enterprise being able to improve their rentability by increasing the indebting ratio;

4. a decreasing of activity amplifies the loss of one indebting society, the finanacila expenses beeing without elasticity. Therefore are settled a connection between the exploiting risk and the indebting risk ;

In the case of one enterprises which cumullates profit, the indebting cost must be computed after taxation, thanks to the fact that financial expenses are deducitilited from the taxation basis and will generate tax savings. An enterprise which registered loss , can't deduct the financial expenses, it beares entirely the indebting cost.

The condition that financial rentability to increase when the enterprise appeals to debts is that return of asstes to be higher then the interest rate. in this case, the financial rentability ratio is lower then the interest ratio, then the leverage effect becomes negative and the financial ratio will be smaller then the assets return, as the indebting ratio is higher.

Un economic agent could be in one of these three situations :

1.  $r_e > r_d$  – thereby the credits using will conduct to assets return ratio improvement ;

2.  $r_e = r_d$  – credits using has no influence from leverage effect point of view;

3.  $r_e < r_d$  – credits using will conduct to performances reduction.

The influence factors on the financial rentability ratio are the assets return ratio and the leverage effect.

Beside these indicators occur other factors, such as :

- total assets turnover  $\frac{CA}{A_e}$  ;
- commercial rentability ratio  $\frac{RE}{CA}$  ;
- difference between the assets return ratio and the interest ratio ( $r_e - r_d$ );
- indebteding ratio of enterprise  $\frac{Dat}{C_{pr}}$  .

A lot of economic agents frenzy look for the certitude and risks elimination, without taking into account the fact that future has not certitude, can't be known from before and in fact must to resist to risks.

In order to allow enterprise to be able to enter obligations is necessary to establish a diagnosis of financial situations when are illustrated the strong points and the faible points of financial administration.

The pursuit objective is to detect eventually financial lack and to adopt new administration decision of enterprise.

These decisions are based on the origin's identification and the lack of poise's cause, on one part , and on the other side to establishment the measures to fix the balance lack, also the enterprise's capacity to respect/honour the obligations, on long or short term( liquidity and enterprise's solvency) and the enterprise's value.

In order to improve the financial performances, the enterprise must to accelerate the assets turnover, to increase the commercial rentability and to substantiate the financial policy which could afford to make available the favorable conjunctures. <sup>6</sup>

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<sup>6</sup> Aurel Isfănescu, Vasile Robu, Ion Anghel, Enterprise's evaluation, Economic Tribune P.H, Bucharest, 2001,page.113