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# The Profitability – Risk Relationship and Financing Decision

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**Abstract.** The enterprise financial decision is a rational process for option to the optimal variant related to financing and investments. For the capital investment to be justified, the profitability of the invested money must be at least equal with the profitability of the alternative investment opportunities with the same risk on market. The choosing of a way for financing is determined on the one side by their cost and on the other side by the existent capital structure. In this paper I tried to analyse the profitability – risk relationship in the financing decision for the "NIKOS" Ltd.

**Key words:** financing decision, profitability, risk, market value of the enterprise, capital structure

## 1. Introduction

The financial decision is a rational process for choosing of the optimal variant related to financing and investments. The objective of each decision had taken to the enterprise level has a financial character that consist in the increasing of the profitability on the product, activity or entire enterprise, assurance of a permanent liquidity state and risk avoiding, the aspects that have placed the enterprise into a leader position on the market.

## 2. Financing decision

Any enterprise, even the situation where is (in the development activity phase or in the maintaining of the production capacity) needed to attract the resources for the developed activities financing. The substantiation of the enterprise financing decision have supposed the following aspect analyses: the period on the financing sources are needed, the financing sources cost, the financing contract flexibility, the taxation impact on the enterprise financing policy, the agent costs but and the information asymmetry problem<sup>1</sup>.

The enterprise ability to evaluate both their products value and its costumer's value in terms of their contribution to enterprise value increasing is peremptorily needed for long term assuring of competitiveness and success.

But, how in the present the information volume, complexity and value from these processes are continuously increasing, there is very difficult to evaluate the enterprise performance<sup>2</sup>. Usually, to the enterprise performance evaluation is using many financial indicators that are

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<sup>1</sup> Dragotă, V., Dragotă, M. Tătu, L., Ciobanu, A., Obreja, L., Racsc, A. – *Abordări practice în finanțele firmei*, Editura IRECSON, București, 2005, page. 322-324;

<sup>2</sup> Fahy, M., Roche, J., Weiner, A. – *Beyond Governance. Creating Corporate Value through Performance, Conformance and Responsibility*, John Wiley & Sons Ltd., England, 2004, page. 57;

well-known: the discounted net present value, the economic added, the profitability ratio, the liquidity ratio, long term solvency ratio etc.<sup>3</sup>. But the financial decisions have an important role in the obtaining the favorable values for these indicators.

The financial decisions that can be taken by the business administration are grouped in two categories:

- *the investment decision* or dez-investment, that is referred to the constituting and administration of the assets portfolio;
- *the financing decision*, that is referred to the financial structure of the enterprise, respectively to the manner of the resources constituting.

The financing decision makes possible the investment decision. If in the neoclassical approach of the international financial management theory, the financing decision don't add value to the enterprise, in the variant of an imperfect market existence of the same theory, there is argued that there is the possibility to create additional value for the enterprise through the financing decision, the manner in which the funds are obtained and the other support decisions.

Thus, because of the some lopsidedness of the incomes fiscal treatment generated by the shareholder and creditors, the financing and dividend decisions can influence the enterprise value and its investment value. There is very important the possibility of the obtaining of an extra value, as well as the identifying of the involved risks. Generally, the financial structure of the internal and external own capital and of the borrowed capital have determined the fiscal economies according as the increasing of the debt rate. The newest theories in finance (the signal and agent theories) argue that the leverage, the buying of the shares by the managers is urged for enterprise' performance and lead to their rise in value.

Even the additional value achieved through the imperfections' exploitation by the financial markets is rather a bonus of the financing decision than a prior objective for enterprise, we can say about this new unique distinctive feature of the enterprise that the value is created from both investment decisions and financing decisions. To the international level, the decisions about investment capital obtaining are reflected on the long term, in the *efficiency and competitiveness of the enterprises' activity*. Because of the importance of these decisions, these are included in the international capital strategy, more exactly in the global strategy of the enterprises' financing.

There is well known that the financial politics decisions have referred to the financing adopted by the enterprise in function of the profitability, growth and risk criteria. After the stable financing needs determination is decided the part that can be financed through the permanent capitals as well as the leverage policy, that is the repartition between own funds and debts.

Thus, the financing decision represents the enterprise option for covering the financing needs both through the internal or external own funds and loans and participation. The decision act about financing belongs to the enterprise, because it is the most interested in using with efficiency of the funds and obtaining of the good results.

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<sup>3</sup> Brealey, M., Stewart, M., Richard, A. – *Principles of Corporate Finance*, Editura Mc GrawHill, 2003, page. 321-329;

In the same time, the financing decision doesn't exclusively depend on the enterprise. The financing *depends* on the enterprise and on banks, through the facilities that can be obtained in the loans negotiation and on shareholders and their disposable funds for subscribing to the increases in borrowed capitals, and on the existence or inexistence of the available capitals, possible to be attracted.

Because the financing decision is assumed in the bigger part by the enterprise leading and much little by the capitals providers (shareholders and enterprise creditors), the major objective followed by managers and capital investors is the same: *maximising of the enterprise market value*. Then, this value will be proportional divided between shareholders and creditors. In function of the same value is established and the managers remuneration. In this assembly of interests there are different ways for approaching the enterprise value maximisation.

The capital investors have followed a remuneration of their investment to profitability higher than investment opportunities offered by financial market. In this way, they are obtaining an increase in their final value higher than, in average, the possible value on the financial market. The enterprise managers, acting in the capital investors' interest, respectively the rising of the total value of the enterprise, are forced to follow the reducing of the rally capitals cost. Using this reduced cost as capitalisation factor of the cash-flows that are give off by the enterprise will lead to their increase in value.

### **3. The determinants factors of the financing decision**

The international specialty literature have analyse many *factors*<sup>4</sup> that are influencing the enterprise financing decision. The relative importance of these factors varies from an enterprise to another at a given moment and for an enterprise lengthways, but for an enterprise that has planned obtaining of a capital, taking into account of the following particularities is needed:

a. *the target capital structure*. Generally, the enterprises have established the target capital structures. Thus, to the taking of any financing decision is followed the comparisons between the actual capital structure and target structure;

b. *the concordance between liabilities maturity and assets maturity*. This factor has a larger influence on the type of used debt: for example, for exploitation needs on short term are contracted the short term loans and for the acquisition of the fixed assets are contracted the loans on medium and long term;

c. *the level of the interest rate*. To the making of the financing decision, the financial managers have take into account the interest rates levels, both absolutely and relatively, on the short term and on the medium and long term. When the interest rates on the long term are too higher, the managers are avoiding an issue of securities on the long term that will fix those higher costs for long periods of time. A solution for this problem is using of the long term loans with cancellation clause. The enterprises are based in their financing decisions on the anticipations related to the future interest rates;

d. *the present and predicted conditions of the enterprise*. If the present financial situation of the enterprise is mediocre, the managers can avoid to issue of securities on long

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<sup>4</sup> Halpern, P., Weston, J. F., Brigham, E. F. - *Finanțe manageriale*, Editura Economică, București, 1998, page. 792 - 794;

term because, the long term debts issued when an enterprise has a mediocre financial situation, have a higher cost and is supposed on the sever restricted conditions then the debts issued in a good financial situation. Thus, an enterprise with a weak situation but that has predicted a good situation in the futures will decide to postpone the permanent financing until to the situation improvement. An enterprise with a good situation, but that have predicted a bad potential situation in the next period, has motives to finance now the activity on long term then wait;

e. *the restriction in the existent leverage contracts.* There are situation when the enterprises are restricted in issue of new primary mortgage redeemable stock by the issue contracts provisions related to debts covering. Also, the current ratio, leverage rate etc. are able to restrict the capacity of an enterprise of using different types of financing at the given moment;

f. *the guarantee availability.* Generally, the guaranteed debts on long term are more little expensive then un-guaranteed debts. Thus, the enterprises that have many fixed assets for general and specialty using with an established reseller value can use a higher value of the debts, especially mortgage redeemable stocks. More than that, each annually financing decision is influenced by the quantity of new fixed assets bought and available as guarantee for new redeemable stocks.

Besides on the mentioned factor, with general character, the appealing to some new financing source more depends on the following factors: the administrative and legal costs of the actual increasing in financing; the cost of the financing duty, for example the paid interest; the level of the obligation for making interest payments and others; the level of obligation of the financing reimbursement; the fiscal deductibility of the cost related to the financing; the effect of a new financing on the control level of the enterprise by the existent shareholders and their freedom in actions.

The decisions related to the establishing of the adequate sources of internal or external funds, have affected both the paid dividends index and the capital structure. Some authors analyse the financing decision to the enterprise level, in the context of theories related to the enterprises that have acted in the industry field, decisions that have referred on the one side, to the relationship between capital structure of an enterprise and the strategy of the market assessment and on the other side the relationship between financing structure and the characteristics of the enterprise inputs and outputs.

This approach was determined by the influence of the leverage on the strategic variables (price and quantity) of the enterprise and on the relationship between providers and consumers.

These models have explained theoretically the relationship between capital structure and the characteristics of demand, supply and competition force from a branch or field activity. The studies from this domain had distinguished the following conclusions<sup>5</sup>:

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<sup>5</sup> Dragotă, V., Ciobanu, A., Obreja, L., Dragotă, M. - *Management financiar*, Vol. II, Editura Economică, București, 2003, page.168 - 169;

- the enterprises that have acted in a oligopoly competition economy have tend to have higher debts then the enterprises that have acted in a monopoly competition economy or in a pure competition economy;
- for the enterprises that have produced unique goods, the achieved reputation on the market through these goods is very important, and it's waiting to have lower debts;
- the enterprises that are organized in consortiums or other forms of group organizing as well as the enterprises with employees with easy transferable knowledge are higher leverage.

More than that, it can be taken into account as research domains and the influences wield by other enterprise strategic variables, as: publicity, research-development expenses or the characteristics of the production capacities and of the goods on the capital structure.

#### **4. The profitability-risk relationship in the case of "NIKOS" Ltd.**

For the capital investment to be justified, the profitability of the invested money must be at least equal with the profitability of the alternative investment opportunities with the same risk. The choosing of a way for financing is determined on the one side by their cost and on the other side by the existent capital structure. An optimal financial structure has corresponded to a minimum cost of the capital. To the microeconomic level, the utility of the shared average cost of the capital is recovered in many fields:

☞ of the shared average cost of the capital can be used as a *discounted rate in enterprise cash-flows evaluation*. Both the creditors and shareholders are waiting to be paid starting to the opportunity cost value determined by the investment of their funds into a some enterprise, then in other investment with the same risk;

☞ from the enterprise point of view, there is discussed in terms of "*cost*" that must be supported by it for disposing of financing sources and from the investors point of view, that are wishing to obtain a gain from their investment in enterprise there is discussed in terms of "*profitability*". Thus, from the investors point of view (shareholders and creditors), the shared average cost of the capital represents the minimum level of the total profitability that can be registered by an enterprise through using of their assets for maintain the invested capital value in its assets;

☞ the calculus of the shared average cost of the capital have utility in the investment project selection, and it's considered the minimum breakeven, under which the investors won't accept to be situated, respectively the required profitability for any enterprise investment that have a identical risk with the enterprise risk on the whole.

The capital structure policy has involved the equilibration of risk grade with profitability ratio. The using of the loan capital in a higher proportion have determined the increasing of the risk grade of the enterprise gains, but in the same time a higher leverage rate means a profitability rate estimated to a superior value.

The higher grade of risk, associated with a higher leverage rate tends to diminishing of the enterprise stock rate when the estimation of a higher profitability rate leads to the increasing in this price. The optimal capital structure is realising an equilibrium between the risk grade and estimated profitability rate and in this way there is maximised the market price of the stock. For pointing the relationship between the profitability and risk, we are proposing the

following example, using the records concerning to „NIKOS” Ltd., presented in the table no. 1:

**Table 1. Records related on "NIKOS" Ltd.**

I. Balance sheet on 31.12.2006		- Euros -	
Fixed assets (net value)	140.000	The own capital (3.000 shares)	300.000
Circulating assets	160.000	Borrowed capital	0

II. Profit and lose account (simplified) la 31.12.2006		- EUR -
Turnover		300.000
The exploitation expenses - fixed		50.000
The exploitation expenses - variable		180.000
The total expenses		230.000
The exploitation profit (EBIT)		70.000
The interest expenses		0
The imposable incomes		70.000
The profit tax (33,33% <sup>6</sup> )		23.331
The net profit		46.669
The profit on share <sup>7</sup>		15,56
The own capital profitability <sup>8</sup>		15,56%
The economic assets profitability <sup>9</sup>		23,33%

In the next paragraphs we will show how vary the profit on share estimation once with the changes appeared in the financial leverage, taking into account the following value for turnover of the "NIKOS" Ltd., presented in the table no. 2.

The first part of the table has started with a probabilities distribution of the turnover: 0,20, 0,60 and 0,20. For simplifying, we are proposing that the possible turnovers are: 150.000 Euros, 300.000 Euros and respectively 450.000 Euros.

Later, there is calculates the exploitation profit (EBIT) accordingly with each of those three turnover, considering that the exploitation expenses – fixed are constant at 50.000 Euros, and the exploitation expenses – variables represent 60% from turnover. In the first case, we are considering that the turnover and operating costs are irrespective of the financial leverage.

The second part of the table has showed the "NIKOS" Ltd. Situation if this enterprise are continuing do not use the loan capital. Thus, to a little turnover, at 150.000 Euros, the profit on share will be 2,22 Euros, but will grow up to 15,56 Euros and respectively to 28,89 Euros, to a turnover of 300.000 Euros and respectively 450.000 Euros.

**Table 2. The profit on share variation once with the financial leverage modification**

I. EBIT calculation			
The estimate turnover probability	0,20	0,60	0,20
Turnover	150.000	300.000	450.000
The exploitation expenses - fixed	50.000	50.000	50.000
The exploitation expenses - variable	90.000	180.000	270.000

<sup>6</sup> in this example was used the profit tax from France, the source: <http://www.icl-directory.com/company-formation.php>;

<sup>7</sup> the net profit on share is determined thus: *Net profit / Number of issued shares*;

<sup>8</sup> the own capital profitability is determined thus: *Net profit / The own capital*;

<sup>9</sup> the economic assets profitability is determined thus: *EBIT / The assets value*;

The total expenses	140.000	230.000	320.000
The exploitation profit (EBIT)	10.000	70.000	130.000
The economic assets profitability	3,33%	23,33%	43,33%

II. The enterprise "NIKOS" Ltd. situation, if the ratio Liabilities / Assets value = 0%			
The exploitation profit (EBIT)	10.000	70.000	130.000
The interest expenses	0	0	0
The imposable incomes	10.000	70.000	130.000
The profit tax (33,33%)	3.333	23.331	43.329
The net profit	6.667	46.669	86.671
The profit on share	2,22	15,56	28,89
The estimated profit on share ( $\bar{k}$ ) <sup>10</sup>		15,56	
The standard deviation of the profit on share ( $\sigma$ ) <sup>11</sup>		8,43	
The percentage deviation ( $CV$ ) <sup>12</sup>		0,54	
The own capital profitability	2,22%	15,56%	28,89%

III. The enterprise "NIKOS" Ltd. situation, if the ratio Liabilities / Assets value = 50%			
The exploitation profit (EBIT)	10.000	70.000	130.000
The interest expenses	22.500	22.500	22.500
The imposable incomes	-12.500	47.500	107.500
The profit tax (33,33%)	4.166	15.832	35.830
The net profit	-8.334	31.668	71.670
The profit on share	-5,56	21,11	47,78
The estimated profit on share ( $\bar{k}$ )		21,11	
The standard deviation of the profit on share ( $\sigma$ )		16,87	
The percentage deviation ( $CV$ )		0,80	
The own capital profitability	-5,56%	21,11%	47,78%

The profit on share calculated for each turnover is multiplied with the probability that those turnover to product, for calculating the estimated profit on share, that is 15,56 Euros, if the enterprise doesn't use the loan capital. Also, there is calculated the standard deviation and the percentage deviation of the profit on share, as indicators of the enterprise risk degree for a leverage ratio equal with nought:  $\sigma_{Pr/act} = 8,43$  and  $CV_{Pr/act} = 0,54$ .

The third part of the table have present the financial results that can be expected by the "NIKOS" enterprise if will use the leverage ratio of 50%. In this situation, the loan capital is

<sup>10</sup> the estimated profit on share ( $\bar{k}$ ) was calculated thus:  $\sum_{i=1}^3 k_i \times P_i$ , where  $k_i$  represents the profit on share determined for those three value of the turnover,  $P_i$  represents the probability of achieving of each of those three considered turnover;

<sup>11</sup> the standard deviation of the profit on share ( $\sigma$ ) was calculated with the formula:  $\sqrt{\sum_{i=1}^3 (k_i - \bar{k})^2 \times P_i}$ , where  $\bar{k}$  represents the estimated profit on share calculated in accordance with the above formula;

<sup>12</sup> the percentage deviation ( $CV$ ) was calculated with the formula:  $\frac{\sigma}{k}$ .



150.000 Euros from those 300.000 Euros – the total value of the liabilities. The interest rate for this capital is 15%.

With a borrowed capital of 150.000 Euros, to a interest rate of 15% on year, the interest expenses supported by the enterprise are 22.500 Euros on year. These are representing a financial cost and is subtracted from EBIT value, previous calculated. After that, it is applied the tax rate for determining the total net profit.

The profit on share is calculated as rate between net profit and the share number. If the loan capital is 0, that means that all 3.000 shares are to the owners. But if a half from the own capital is substituted with the loan capital of 150.000 Euros, then there will be to holders only 1.500 shares, and this will be the number of shares that will be used for determining the profit on share accordingly with each turnover<sup>13</sup>. With a leverage rate of 50%, the profit on share will be -2,78 Euros, for a turnover of 150.000 Euros, then will rise to 10,56 Euros when the turnover is 300.000 Euros and will attain the value of 23,89 Euros, when the turnover is 450.000 Euros.

## Conclusions

In conclusion, the risk grade measured by standard deviation or percentage deviation of the profit on share is increasing continuous, with a positive rise in ratio, when the loan capital have replaced the own capital.

Thus, the financial leverage using has involved an equilibration of the risk grade with the profitability ratio: a higher grade of using of the financial leverage lead to the increasing in the estimated profit on share. In our case, the estimated profit on share have risen from 15,56 in the case of leverage grade at nought, to 21,11 in the case of the 50% leverage ratio, but this rise lead to the increasing of the enterprise risk ratio.

## References

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4. Fahy, M., Roche, J., Weiner, A. – *Beyond Governance. Creating Corporate Value through Performance, Conformance and Responsibility*, John Wiley & Sons Ltd., England, 2004;
5. Halpern, P., Weston, J. F., Brigham, E. F. - *Finanțe manageriale*, Editura Economică, București, 1998.

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<sup>13</sup> in this example, we are started from the hypothesis that the enterprise is changing the capital structure through the redemption of a part from issued and sold shares, paying for redemption a price equal with the accounting value of 150.000 Euros/ 1.500 shares = 100 Euros;