

THE EFFECTS OF FINANCING SOURCES COSTS OVER THE FINANCIAL AND OPERATIONAL RISK

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The selection of the financing sources of an enterprise constitutes a major problem for the managerial finance field with influences over the economic-financial performances. The theoretical and practical studies did not provide to the scientific research field the proper identification of the representative models for managing the capital structure and to evaluate the real costs for the financing sources.

The liquidity crisis by which are confronted the Romanian companies nowadays, relevant situation for the actual period, imposes the need for correlation and optimization of the capital structure and identification of the financial and operational risks at the level of the enterprises and at the level of the representative responsibility centres in order to valorise at a maximum level the existing financial potential..

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The main criteria for selection of the financial sources, according to the financial theory and practice are: **cost of capital, financial profitability and the exceeding of the liquidity flow**. Accurate estimation of the capital cost is important for maximizing the market value of the company and for implementation of the investment decisions, leasing, buy back of the own stocks, adoption of a circulating funds policy.

Depending on the level on which is applied, is realized a distinction between the *opportunity cost of the capital*, defined at the level of the investment projects and the weighted average cost of capital, at the level of the company.

Also depending the initial hypothesis and the proposed goal, to the cost of capital are attributed several interpretations. Thus, starting from the *net present value* criteria, the cost of the capital was considered for a long time to be the rate of interest and was used in the capital flow discounting techniques. The actualization rate was defined as the long term interest rate existing on the market. This explanation was used because the financial studies were realized considering a perfect financial market.

Just later was outlined the dependency of the discount rate by the interest rate of the low risk investments, existed on the financial market and by the risk represented by the company or by the project. The evaluation of the risk premium can be realized taking into consideration the influence of the financial structure.

Existence of two decision centres within the company: the managers on one side, and the shareholders, on the other sides, parties which don't have the same motivation, are leading to the distinction of two *cost of capital categories: explicit*, the effective costs sustained by the company and *implicit*, such as the minimum profitability rate required by the shareholders in order to justify the investment of their capital.

The capital investors and creditors are pursuing the remuneration of the capital at a higher profitability, over the average one offered by the financial market, in order to increase their wealth. The managers are acting in the interest of the capital investors, in order to grow the total value of the company, by reduction of the own and borrowed capital costs. One of the ways for reduction is to increase the proportion of the investors which require low remuneration of the

capital, which can lead to the increase of the debt, the loans being obtained at a lower cost than the capital of the shareholders.

In these conditions the **financial risk is increasing the operational risk**, so the total risk of the shareholders' capital is increasing, which endows them to request a higher remuneration rate. It imposed the determination of the global cost of the capital as a weighted average of the costs attributed to all sources of capital.

The global cost of capital (own internal and external and also borrowed) is not an historic cost, but an expectation for remuneration of capital investors, with its help being expressed the market value of the company.

Weighted average cost of capital represents the total amount of own and borrowed capital, corrected with their proportion in the total capital of the company before taxation:

Are considered two main groups of financial sources:

- **Own capital: internal**, obtained through auto-financing on the bases of reinvesting a part of the net profit and **external**, received through emission of new shares or by increasing the value of existing ones.

- **Borrowed capital**, such as bank loans, commercial loans offered by the business partners (if are obtained as grants and are not taken into consideration when counting the debts within the weighted average cost of capital formula), discounting loans based on bearer securities, collateral loans, leasing.

The fiscal asymmetry between the interest (deductible) and profit which belongs to the shareholders (un-deductible), **determines fiscal economies at the indebted company**, proportionate with the size of the interests and with the profit taxation rate: $(Dob \times \tau)$, average cost of the capital, being calculated based on the following formula:

$$k_{ec} = k_e \times \frac{CPR}{CPR + DAT} + k_d \times (1 - \tau) \times \frac{DAT}{CPR + DAT}$$

Where:

- k_{ec} = weighted average cost of capital;
- k_e = cost of own capital(equity), which is the profitability awaited by the shareholders;
- k_d = cost of borrowed capital.
- τ = profit taxation rate

For the enterprises which are quoted on the stock market is recommended **to be used market values both for estimation of the value of debts and also for estimation of the value of their own capital on capitalization basis**, which confers an objective and close to reality expression of the opportunity cost of the capital.

The cost of the capital, being an indicator which cannot be calculated objectively and coherently, being based on forecasts with high level of uncertainty, is considered an opportunity cost, which expresses simultaneously the situation of the company through the financial market as a result of its financial policy and of the pursued investment policy and it depends by two important factors:

- **financial structure** (share of owned and borrowed capital in total capital), reflecting the proportion of participating funding sources into the total capital of the company. Distinguished as **permanent capital** (long-term CPR and DAT) used to fund the investment cycle and **short-term capital**, proposed particularly for financing the operating cycle;

- **Specific costs of various components of capital**, especially distinguishing between equity and borrowed capital, the cost of which varies significantly and influence each other

The literature is addressing separately the four major components of capital: **loan, preference shares, reinvested or accumulated earnings and issuance of ordinary shares.**

On determining the marginal cost of each funding source, the composite cost of capital is essentially a marginal cost. **Self-financing is the most reliable source in terms of profitability**, involving also some costs.

Accumulated profits are a component of equity and have a profitability ratio approximately equal to that of external capital, some authors consider that there are only **three major sources of capital**: credit component, preferred shares and ordinary shares. The formula for calculating the average cost of capital is:

$$k_{ec} = k_d \times (1 - \tau) \frac{D}{C} + k_p \times \frac{P}{C} + k_e \times \frac{E}{C}$$

where:

D = market value of nonconvertible debt;

P = market value of nonconvertible preferred shares;

E = Equity market value;

k_d = interest rate on loans (loan capital);

k_p = the cost of preference shares component;

k_e = opportunity cost of owned capital;

C = D + P + E, total value of the capital;

$k_d \times (1 - \tau)$ = cost of the credit component after payment of the tax.

Other possible sources may be taken into consideration according to a specific combination of funding sources of the company: **leasing (operating or capital), convertible debt, convertible preferred shares, warrants or shares held by employees or managers, as stock programs - options.**

Capital cost estimation problems have contributed to the formulation of widely accepted views of scholars and practitioners. The most important are listed below.

- Cost of capital of a company is defined through the rate of remuneration of the different funding sources. The concept is directly related to the rate of return on investment projects having as minimum limit the capital costs, in order to maintain the same market rate for the company shares.

- Based on risk preferences, cost of capital is difficult to estimate, but can be determined by the dividend discount model on an indefinite duration or by the model for valuing financial assets, Capital Assets Pricing Model (CAPM).

- Among the modern methods proposed for estimating of the future evolution of capital costs are included the artificial neural networks and genetic algorithms with a limited scope.

- Cost of debt is given by the actualization rate, which equals the amount received from lending with cash outflows due to credit process, identified as the interest rate.

- Costs of other sources have specific determinations, the cost of the retained benefits which is approximated as being equal to that of own capital (equity), depreciation cost and preference shares cost with the debt costs. Cost of convertible bonds is a probabilistic mix between debt and

equity costs, leasing costs and subsidies cost are also approximated by the cost of debt, with differentiations according to existing regulations.

- Weighted average cost of capital is calculated as a weighted average cost of financing sources used by the company.
- Usage of weighted average cost as the rate of actualization is justified under fulfillment of certain requirements, relating mainly to maintain the level of risk, both economically and financially.
- When investment projects differ substantially in terms of risk, the weighted average cost needs to be adjusted.

Limitations of the usage of **weighted average cost of capital** can be divided into two broad categories:

- **First category**, linked to the method of calculation of its composing elements and even of its own, is determined as a weighted average cost of different funding sources. One problem is the use of weighted average cost of capital after the deduction of profit taxes or before deducting them. Most authors believe that the real cost of capital is that which is calculated before the tax deduction but which takes into account the savings from taxation induced by credit, but there are authors who only consider cost of capital only after tax deduction, arguing that the capital suppliers are interested only in the amounts to be divided between them, as interest and dividends.

- **The second category** refers to the identification of weighted average cost updated with the actualization rate used in selecting investment projects, within the net present value and internal rate of return criteria

Calculation of capital cost is also a controversial topic. Shareholders' expectations cannot be quantified and differ greatly from person to person. Costs of special categories of resources such as grants, depreciation and even retained benefits, which given the fact that are not explicit costs have received different interpretations. Because they are part of the owned capital, often, their costs are compared with the return required by shareholders.

Approach to the financial risk in terms of the effect of borrowed capital, generating interest expense, which have a fixed, insensible at the alteration of the volume of activity. This requires the approach of the financial structure in line with capital costs.

The financial risk refers to the additional variability of the net income per share caused by turning to fixed cost of financing, such as bank loans and loans from bond issues. Fixed capital cost generates financial obligations which must be fulfilled by the company, regardless the size of its gross operating income. Under these conditions, increasing borrowing costs takes to an increase in the company's fixed costs. To cover these costs, the company must obtain an additional gross operating result.

The level and evolution of the financial risk are important for managers and shareholders. Managers are interested by the financial risk in order to optimize the financial structure, respectively to combine the equity with the borrowed capital in order to minimize the weighted average cost of invested capital. Shareholders are interested in the size of the financial risk to establish the remunerations which are requested for investing funds in the company. The earnings are closely correlated with the risk they bear.

The financial risk can be measured using two indicators: **the position indicator**, based on the breakeven level, and the **financial leverage ratio**.

Break even, or minimum critical turnover (CAcr), reflects that volume of the activity of the company needed to ensure that revenues from sales fully cover operating expenses, without profit and it's based on clustering the operating expenses into variable and fixed expenses and is determined using the formula:

$$CA_{cr} = \frac{Cf}{1 - \frac{Cv}{CA}} = \frac{Cf}{1 - Rv} = \frac{Cf}{Rmv} ,$$

where:

Cf – fixed operating costs;

CA - total turnover of the company;

Cv – firm's total variable costs;

Rv – rate of total variable costs;

Rmv – margin rate of total variable costs.

Financial risk analysis, taking into account the financial costs with interest, which have a fixed character are modifying the formula as follows:

$$CA' = \frac{Cf + Dob}{1 - \frac{Cv}{CA}} = \frac{Cf + Dob}{1 - Rv} = \frac{Cf + Dob}{Rmv} ,$$

where:

CA' – critical turnover;

Dob – Interest expenses

Critical turnover (CA') shows which is the level of the sales volumes which have to be registered by a company to cover all fixed costs, both operating and those with interest payment. For financial risk assessment, it can be calculated the **position indicator** to break even level, both as absolute value(α) as well as a relative value($\alpha\%$), as follows:

$$\alpha = CA_1 - CA' ;$$

$$\alpha\% = \frac{CA_1 - CA'}{CA'} \times 100$$

where:

CA₁ – actual turnover.

Position indicator in absolute value, called also as the safety margin expresses the existing gap between the actual turnover achieved during the reported period and turnover corresponding to the overall breakeven level(Ca'). The greater this gap, the firm will have a greater flexibility and adaptability to short and medium term developments recorded in the economic sector where it operates, which will enable it to cover the fixed operating expenses and the interest costs from the total margin account of the variable costs, with no danger of loss occurrence.

The higher are the values of this indicator, the lower will be the financial risk registered by the company and vice versa. **The relative size position indicator**, expresses in percentages the gap between actual turnover and the one associated to the critical point.

Financial risk analysis, may consider, in addition to the cost of borrowed capital and the owned capital cost, in these conditions, in addition to covering the fixed operational and financial expenses, the company must to cover from the margin variable costs (turnover minus variable costs), both the cost of borrowed capital, and of the self-owned capital. Considering that this cost has a constant character, the breakeven formula (the critical turnover - CA") becomes:

$$CA'' = \frac{Cf + Dob + Ckpr}{1 - \frac{Cv}{CA}} = \frac{CFt}{1 - Rv} = \frac{CFt}{Rmv},$$

where:

CKpr – equity cost;

CFt – Total fixed costs (operating, interest and equity).

Critical turnover, set the by the new relationship, shows the value of sales volume which a company must make it in order to cover its fixed operating costs, but also the fixed financial cost of the invested capital (financial debt and equity), evaluation of financial risk using the same position indicators:

$$\alpha'' = Ca_1 - Ca'';$$

$$\alpha''\% = \frac{Ca_1 - Ca''}{Ca'} \times 100$$

The position indicators signifies the difference between the total turnover and the one which allows integrally covering of the operational and financing costs regarding the sold production, exceeding this threshold realizes value for the shareholders.

Positive position indicator means that operating expenses, interest, own capital cost was fully covered and all variable costs associated with the production margin that exceeds the threshold value represent an increase to the profitability of the company after deducting the income tax.

In these conditions it's increasing the value of position indicators, in the management process, in developing and implementing financial policy, allowing the establishment of a direct correlation between sales volume and the total expenditures regarding the production and financing of goods which form are the main active objective of the company.

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