Optimisations of the Cost and Structure of Created Investment Resources of an Entity Based on Financial Leverage Elements

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Abstract

The article demonstrates the author's method for cost and structure optimisation of created investment resources of an entity based on financial leverage tools for effective financing of real investments in case of development of an investment strategy for an entity development, namely: - Criteria of investments financing from line items of conservative, compromise, and aggressive approaches are determined using in the scheme of financing owner's capital, and also short-term and long-term loan fund capital; - Step-by-step creation of the financial performances considering industry specifics, scale of functioning of economic agents' activities is offered. Effective activities of the entities in long terms, ensuring high rates of their development and competitiveness increase in the conditions of market economy, are substantially determined by the level of their investment activity and the range of investing activities. One of the main tasks of forming the investment resources is the optimisation of their structure taking into account the profitability level and the investment risk. The optimisation of a capital structure by criterion of financial profitability level maximisation (profitability of the owner's capital) is reached by means of financial leverage mechanism. Profitability level maximisation for the capital considering the set level of financial risk is performed through the financial leverage, showing the use of borrowed funds by the entity. Carrying out complex calculations within the investment analysis with use of mechanisms of financial leverage allows determining the optimum structure of the created investment resources providing maximisation of the profitability level.

Keywords: financial management, investment capital structure, cost optimisation, financial leverage.

1. Introduction

1.1 Introduce the Problem

The theory of financial management differentiates the two concepts: "financial structure" and "capitalized structure" of the entity. A method of financing activities of the entity is implied by the term of "financial structure" in general, i.e. the structures of all sources of means. The second term belongs to a narrower part of the means sources – to long-term liabilities (owners' means sources and long-term loan capital).
One of the problems connected with the development of investing activities of the entities is the absence of reliable criteria for optimisation of the investment capital structure considered by an accounting entity, taking into account the industry specifics. It is well known that the same indicators at the entities of different industries are calculated differently. This fact shall be taken into account in case making managerial decisions about investments. The opportunity and feasibility of capital structure management of the entity has been a learning object for the scientists and practicing economists for a long time. There are two main approaches to this problem: the traditional one and the Modigliani-Miller's theory. The founders of the second approach, Modigliani and Miller, approved the contrary: the price of the capital does not depend on its structure and, consequently, it cannot be optimised. To argument this approach, they introduce a number of restrictions: availability of the efficient market; lack of taxes; the identical size of interest rates for natural persons and legal entities; rational economic behaviour; possibility of identification of the entities with an identical risk rate, etc. In these conditions, as they affirm, the price of the capital is always levelled by transferring the capital at the expense of the loans granted to the companies by physical persons. The followers of the first approach consider that the price of the capital depends on the structure and, therefore, there is an "optimal capital structure". As the price of the loan capital is, on average, lower than the owners' capital price, there is a capital structure called optimum. For this structure, the advanced capital cost has the minimum value, and, consequently, the cost of the entity will be the maximum.

1.2 Importance of the Problem

Now the level of investment activity in Russian entities and the range of their investing activities are determined by the financial opportunities in a long-term perspective, ensuring high rates of development and competitiveness.

The practical importance is determined by the possibility of direct use of the developed complex of suggestions for improvement of approaches to optimise the costs and the structure of the created investment resources used at the Russian entities, when choosing the most attractive option for the investment attraction.

1.3 Relevant Scholarship


1.4 State Hypotheses and Their Correspondence to Research Design

One of the problems connected with the development of investing activities of the entities is the absence of reliable criteria for optimisation of investment capital structure considered by an accounting entity, taking into account the industry specifics. It is well known that the same indicators at the entities of different industries are calculated differently. This fact shall be taken into account during making the management decisions about investments. The possibility and feasibility of structure management for the entity capital has been a learning object for scientists and practicing economists for a long time.

2. Method

2.1 Method of statistical monitoring

The methodical research apparatus includes the methods of system and structural, functional, factorial, and comparative analysis with creation of analytical models based on synthesis of modern scientific methods of economic and social phenomena studying. The paper uses historical and logical, graphical, statistical and economic-mathematical methods of information processing.

The theoretic and methodological basis of research with instrumental and methodical apparatus, as well as information and empirical research base representation, is shown. The information base is quite representative, thereto, there is a reliable basis for creation of a complete picture of a complex analysis technique for investment projects.
2.2 Method of analysis and measurement

The main content of the method

1st stage. Analysis of the entity’s capital. A detailed analysis of activities financial indicators for the subject of the economic relations with the purpose of effective use of financial resources is carried out.

1. Analysis of financial stability of the entity:
   - Autonomy rate;
   - Financial leverage ratio;
   - Long-term financial independence ratio;
   - Coefficient of long and short-term debt ratio.

2. Capital utilisation efficiency evaluation:
   - Net current value of the capital;
   - Investment profitability;
   - Internal profit margin;
   - Payback period (simple and discounted).

2nd stage. Evaluation of the major factors determining the capital structure forming:
   - Industry features of operating activities of the entity;
   - Stage of the entity lifecycle;
   - Conditions of the goods market;
   - Conditions of the real investment market;
   - Profitability level of operating activities;
   - Operational leverage rate;
   - Creditors’ relation to the entity;
   - Profit taxation level;
   - The investment mentality of owners and managers of the entity;
   - Concentration level of the owner’s capital.

3rd stage. Capital structure optimisation by criterion of maximisation of financial profitability level.

Carrying out multiple practical calculations using the mechanism of the financial leverage allowing determination of the optimal capital structure providing maximisation of the financial profitability level.

4th stage. Capital structure optimisation by criterion of its cost’s minimisation.

It is reached by means of a value assessment of the owners’ and the loan capital under different conditions of its attraction, and the multivariate calculations of the weighted average price of the capital. The cost indexes of separate elements and weighted average capital cost are used for taking the management decisions. During the assessment and forecasting of weighted-average capital cost at the entity, the following criteria shall be considered:
   - The capital structure on sources of its forming;
   - Use duration of the attracted capital;
   - Average lending rate;
   - Dividend policy of the entity;
   - The availability of various sources determining financial flexibility of the entity.

5th stage. Capital structure optimisation by criterion of minimisation of investment risks level.

The entity’s owners or managers perform the differentiated financing source selection for different types of assets (fixed, variable current assets and non-current assets) depending on the attitude to investment risks. There are three basic approaches to financing of various groups of assets of the entity: conservative, moderate and aggressive. Considering the fact that nowadays long-term loans are practically not granted to entities, the chosen model of assets financing will represent the ratio of the owners’ and the short-term (medium-term) loan capital, i.e. to optimize its structure from these line items.

6th stage. Forming of the target capital structure indicator.

Limiting borders of the most profitable and minimum risk capital structure allows determining the field of choice of its specific values for a forecast period. In the course of this choice, earlier estimated factors characterizing specifics and special features of the entity activities are considered.

The basic concepts of the technique of cost and structure optimisation of the created investment resources of the entity based on financial leverage:

1) Financial leverage. The author sees this concept as the objective factor arising with the advent of borrowed funds in volume of the investment capital used by the entity allowing it to get additional profit on the owner
capital. This indicator, which reflects the level of additionally generated profit on the owner capital in various share of the borrowed funds use, is called the financial leverage effect and is determined as follows:

\[
FL = (1 - Nr) \cdot (Rc - P) \cdot \frac{E_c}{E_s},
\]

where

- FL – financial leverage effect;
- \(Nr\) – income tax rate;
- Rc – profit ratio of assets;
- P – average interest rate on the credit paid by the entity when using the loan capital;
- \(E_c\) – average cost of the loan capital;
- \(E_s\) – average cost of the capital.

The financial leverage calculation is made with use of the following criteria:

- Tax copyholder of financial leverage;
- Financial leverage differential;
- Financial leverage ratio.

Allocation of these components allows purposeful management for the financial leverage effect in the course of implementation of investing activities of the subject of the economic relations.

2) **Tax copyholder of financial leverage.** The tax copyholder practically does not depend on the entity's activities, as the rate of the income tax is established legislatively in the form of the federal law. However, its influence can increase the financial leverage effect, influencing the industry and regional production structure, using the diversification benefits, having lowered the regional component of the profit tax rate. In process of financial leverage governance, the differentiated tax copyholder can be used in the following cases: if on separate types of activity the entity uses tax privileges on profit; if separate affiliated companies of the entity perform the activities in special economic zones of the country, where the preferential tax regime works. The tax copyholder of the financial leverage (1–) shows, in what degree the financial leverage effect in connection with various taxation level of profit is shown.

3) **Financial leverage differential.** In process of management of financial leverage, the differentiated tax copyholder can be used in the following cases: if on separate types of activity the entity uses tax privileges on profit; if separate affiliated firms of the entity perform the activities in special economic zones of the country where the preferential tax regime works. This main condition a creation of a positive financial leverage effect. This effect is shown only if the level of the gross profit generated by assets of the entity exceeds an average interest rate on the utilised credit (including not only its direct rate, but also other specific expenses on its attraction, insurance and servicing). The higher the positive value of differential of financial leverage is, the higher its effect will be with other equal conditions. The positive size of the differential appears only if the level of the gross profit generated by the entity's assets exceeds the average interest rate on the utilised credit. Forming of differential negative value always leads to a decrease in the profit ratio of the owner capital.

The financial leverage differential (\(\Delta\)) is determined by the following formula

\[(Rc - P).\]

It characterizes the difference between the ratios of gross margin of assets and the average interest rate on the credit.

Based on the aforesaid, we can make a conclusion that forming of a negative value of financial leverage differential on any of the above-mentioned reasons always leads to a decrease in the profit ratio of the owner capital. In this case, use of the loan capital by the entity gives a negative effect.

4) **Financial leverage ratio.** In case of positive value of differential, any surplus of financial leverage ratio causes a bigger surplus of profit ratio of the capital, and in case of negative value of differential the surplus of financial leverage ratio will result in even bigger decrease rate in the profit ratio.

In a formula of the financial leverage effect the financial leverage ratio is determined by the ratio of profit ratio of assets and the average cost of the capital.

\[
K_{FL} = \frac{NP}{GP} \times 100\%
\]

where

- NP – net profit (net profit change rate);
- GP – gross profit (gross profit change rate).
After simple transformations the financial leverage ratio can be presented in a simpler form: \[
\hat{E}_{rl} = \frac{\hat{E}}{\hat{A} - r} \times 100\% ,
\]
where \( r \) is the loan interest.

Thus, in case of invariable differential, the financial leverage ratio is the main generator for the increases of the amount and profit level on the capital, as well as for the financial risk of loss of this profit. Similarly, in case of invariable coefficient of financial leverage, positive or negative dynamics of its differential generates the increase of the amount and profit level on an capital as well as the financial risk of its loss.

5) *The Weighted Average Capital Cost (WACC-ŁŁɄ)* is determined as the arithmetic-mean weighed size of cost of separate elements of the owner capital. The scales of each element are its specific weight in the total amount of the owner capital.

2.3 Taxonomic method

The authors have developed the optimisation for cost and structure of the created investment resources of the entity based on financial leverage, which consists of several stages (fig.1)

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Figure 1. of the method for optimisation of cost and structure of the created investment resources of the entity based on elements of financial average

The main objective of the authors’ method is the creation of the complex financial and credit mechanism of optimisation for cost and structure of investment resources of the accounting entity. This allows showing the ways of increase in level of profitability and decrease in the investment risk based on determination the criteria of the level
maximisation of financial profitability, the risks of minimisation, and forming of a target indicator of an optimal capital structure.

The main objectives:
1) Maximisation of profitability level of capital on the set level of financial risk;
2) Minimisation of costs on forming of investment resources for the integrated accounting entity based on cluster compliance of the attracted investment resources to the created investment requirements;
3) Effective use of investment resources of the entity in the course of investing activities taking into account the level of profitability and the risk;
4) Combination of financial and credit and statistical approaches to the formation of the investment resources of the entity.

2.4 Method of observational generalisation and logical inference

The advantages of the authors' method are as follows:
1) Reflection of the additional generated profit level of the owner capital with various share of use of the borrowed funds;
2) Ensuring the reliability of optimisation of cost and structure of the entity's investment resources for short-term and mid-term projects;
3) Forecasting of the cash flows specific components (capital cost, sales price etc.);
4) The structure optimality of the investment resources based on methodological calculation of the financial leverage effect on rather reliable results.

The purpose of the method: it can be applied to addition of traditional approaches to management process and the construction of investments portfolio, and in particular, during the working at the investment strategy of the entity's development.

3. Results

The optimisation method for the cost and structure of the created investment resources of the entity is constructed based on the systematic tasks solution, making organisational and financial decisions and achievement of effective objectives.

The need for amount of real investments based on financial performance of activities of the entity is originally established. Thus, the first two stages of the authors' method have settlement and analytical character; these ratios are used for the purpose of further reasons for the principles of optimisation of an entity's structure.

The decision made on this matter allows creating an indicator of a target capital structure according to which its subsequent forming at the entity by investment attraction from the corresponding sources will be performed for the forthcoming period.

Based on the above mentioned, it is possible to draw the following conclusions:
– The indicator of the weighted average capital cost is the most important measuring instrument of the market value level of the entity. Decrease in this indicator involves increase of weighted average cost of the entity, and vice versa;
– The weighted average capital cost is the minimum regulation (lower bound), when planning the sizes of the entity's profit. It shall be noted that the bigger the gap between the profitability level and the level of weighted average capital cost is, the higher is the internal level of financial opportunities of entity's development;
– Financial (investment) capacity of the entity acts as a criteria indicator of making the management decisions in the real investment sphere;
– The knowledge of the impact mechanism of financial leverage on the level of an entity' capital and level of financial risk allows purposeful management for both the cost and the capital structure of the entity;
– The integrated approach to optimisation of the capital structure allows estimating a risk degree of financial and economic activities of the entity, as in the conditions of high-risk level investors and creditors require providing the raised rate of return on the provided capital, which leads to increase of the weighted average capital cost level.

Cost indexes of separate elements of a capital structure, used for further acceptance of management decisions, are consistently identified. The assessment of investment risk for the purpose of capital structure optimisation is carried out applying various approaches to forming of investment resources of the entity.

Limiting bounds of the most profitable and minimum risk capital structure allow determining a field of a choice of its
specific values for a forecast period. In the course of this choice, the earlier considered factors of individualisation and specialisation of this entity's activities are considered. The taken management decision on this matter allows creating an indicator of "a target capital structure", according to which its subsequent forming at the entity by investment attraction from appropriate sources for the forthcoming period will be performed.

The investment potential of the entity acts as a criteria indicator of making the management decisions in the sphere of real investment, and the knowledge of the mechanism of financial leverage effect on the profitability level of the capital and the financial risk allows purposeful management for both the cost and the capital structure of the entity. The integrated approach to optimisation of a capital structure allows estimating a risk degree of financial and economic activities of the entity, as in the conditions of high-risk level the investors and the creditor require providing the raised rate of return on the provided capital, leading to increase of weighted average capital cost level.

Thus, ensuring an effective forming of the investment capital, the entity requires an assessment of its limiting cost — the cost level of each one of its new units, attracted additionally by the entity. In process of development of the entity and the attraction of the increasing amount of the new capital by it, the indicator of the limit cost constantly increases. At the same time, it leads to the growth of weighted average cost of in addition attracted capital of the entity.

4. Discussion

Variety and importance of theoretical and practical aspects of investments relations system requires deepening of basic and applied researches of forming the necessary investment resources, providing financing of investing activities of national economy in general, and, in particular, the specific business subject. It is rather actual, because the active investment policy has come to the forefront at most of subjects of the economic relations. Because of that, the subject of dissertation research dedicated to development of the theory, methodology, and practice of real investments financing is actual, and has a great practical value, both for national economy and for the certain subject of business.

In the conditions of globalisation of the world economic communications and the amplifying international competition, the stability of the Russian economy in many respects depends on a capability to compete successfully in the world market. The global changes in the world caused by the political and economic reasons require innovative approaches to social and economic development of the country in general, and the Russian regions in particular.

One of the means of a new vision to economic development of national economy is a cluster approach. Today, practically each Russian region tries to strengthen the regional economy by attraction of supplementary capital, i.e. investments. Regions with effectively functioning clusters (such as investment appeal, investment potential, and investment risk) have higher rates in development dynamics, and the clusterisation is one of the most perspective directions of their economic growth, as the clusterisation of both national economy and the investment market is the perspective direction of increased competitiveness and investment appeal.

For increasing the effective management of investments within the approved investment strategy of the entity, the special policy of real investments management, providing preparation, assessment, and implementation of the most effective real investment projects, is developed. Due to high investment activity of the entity, the politics of investment management is in strategy development of real investments management in a combination to strategy of their financing, which in total shall provide forming of the optimum cost size and a capital structure size. The matter is that the special role in this process belongs to the investment strategy of an entity, including various investment cluster approaches to the implementation of real investments management policy.

There are the renovating investment policy, the innovative investment policy, and the policy of current assets investment, the policy of monetary investment instruments portfolio creation, the policy of forming the investment resources, the policy of the own investment resources forming, the policy of loan investment resources attraction, the policy of investment risks management, and the risk management policy of real investment.

In the conditions of financial globalisation, as a rule, potential investors and participants of the investment market consider the optimisation process in the three directions:

1. Need of ensuring a high financial stability of the company shows the security degree of investors and creditors interests, the possibility of the company to settle in time the financial liabilities based on calculations of autonomy, borrowed and own funds ratios, and self-financing ratio.
2. Maximisation of the amount of profit on investing activities, being at disposal of the founders of the company or owners, is reached by calculation of the financial leverage effect.
3. Minimisation of weighted average capital cost of the company is determine the price of each separate capital source of the entity.

Analysing criteria and financial ratios in the determination of structure optimisation of sources structure of forming
the investment resources, in the context of taking an effective management decision, it is necessary to consider that the
own means are always more expensive as the lost profit connected with their alternative use is always reflected in their
cost. The lost profit, as a rule, is the greatest percent in relation to borrowed funds.

Based on the analytic review of economic literature, and periodicals in the area of corporate finances and
management of cash flows, the traditional approaches to the cost and structure optimisation of the created investment
resources of the entity were considered. The authors offer to add some approaches to the cost and structure optimisation
of the created investment resources of the entity with a competitiveness factor as of the entities in general, and of
separate products or the provided services on the basis of index methods of information processing.

The made research of methodical ensuring effective forming of the investment capital of the entity requires an
assessment of its limiting cost — the cost level of its each new unit, which is additionally attracted by the entity. In
process of the entity's development and its attraction of increasing amount of new capital, the cost-limiting indicator
constantly increases. At the same time, it leads to growth of weighted average cost of additionally attracted capital of the
entity as well.

Optimisation of capital cost and structure, used in investment process on its separate stages, is aimed at providing
financial stability of the entity in the course of implementation of its investing activities.

The method of cost and structure optimisation of the created investment resources offered by the authors based on
financial leverage allows influencing the profitability level of an capital and the financial risk level. Moreover, it allows
purposeful management for both the cost and the capital structure of the entity. In addition, the used integrated approach
to optimisation of a capital structure allows estimating the risk degree of financial and economic activities of the entity.
This is necessary because in the conditions of high risk level, investors and creditors require providing the raised rate of
return on the provided capital that leads to an increase of weighted average cost level of the capital.

5. Conclusion

In the conditions of accruing competition, the subjects of economic relations face a problem of forming of an investment
strategy at the entity, and one of its main components is cost and structure optimisation of investment resources. For the
purpose of dynamic development and development trajectory of an entity's investment strategy to become the priority
direction in the system of the Russian companies management. In the period of economic shocks, financial resources are
limited, implementation of all potentially interesting investment projects become impossible. In this situation, we have to
solve the problem of a choice of investment projects implementation and to make investment decisions on condition of
value maximisation of business and capital adequacy.

Nowadays, the review of investment policy of the economic relations subject and, as a result, review of forming
and distribution of investment resources between the federal centre, subjects of federation and corporate structures, is
very actual. During the economic shocks and crises, all of us need to act together, to aim for a common goal, and not to
pursue our own interests. It will be one of the decisive factors of the further success of the country and of each region in
particular. Therefore, if the federal centre also makes the decision on transformation of distribution system of investment
resources between the regions, the regional centres and corporate structures shall not use once again a situation and
cash them in the form of "official awards" or remove to the offshores. Since it can happen, pursuing the every minute
benefit, Russia remains a raw appendage of other countries.

Thus, cost and structure optimisation of investment resources shall be carried out taking into account the external
and internal factors of a market situation, pursuing the aim of value maximisation of the entity’s capital.

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References
