EDITORIAL

One of the main and most important problems in corporate finance is the problem of cost of capital, the impact of capital structure on capital cost and capitalization of the companies and problem of an optimal capital structure of the companies (at which the company capitalization is maximal, and weighted average cost of capital is minimal). The importance of these problems is connected to the fact, that one can doing nothing, just by change the ratio between debt and equity (change the capital structure) increase the capitalization of the company. However, to date, even the question of the existence of an optimal capital structure of the companies still remains open. Numerous theories and models, including the first and the only one until recently quantitative theory by Nobel laureates Modigliani and Miller (MM), not only does not solve the problem, but also because of the large number of restrictions (such as, for example, theory of MM) have a weak relationship to the real economy. Herewith the qualitative theories and models, based on the empirical approach, do not allow to carry out the necessary assessment.

This special issue is devoted to recent development of capital structure theory and its applications. Discussions will be made within both main theories: modern theory by Brusov, Filatova and Orekhova (BFO theory) and its perpetuity limit - classical Modigliani-Miller (MM) theory, which will be compared in details. The BFO theory has replaced the famous theory of capital cost and capital structure by Nobel laureates Modigliani and Miller. The authors have moved from the assumption of Modigliani-Miller concerning the perpetuity (infinite time of life) of companies and further elaborated quantitative theory of valuation of core parameters of financial activities of companies of arbitrary age as well as arbitrary time of life.

Results of modern BFO theory turn out to be quite different from ones of Modigliani-Miller theory. They show, that later, via its perpetuity, underestimates the assessment of weighted average cost of capital, the equity cost of the company and substantially overestimates the assessment of the capitalization of the company.

Such an incorrect assessment of key performance indicators of financial activities of companies has led to an underestimation of risks involved, and impossibility, or serious difficulties in adequate managerial decision-making, that was one of the implicit reasons of global financial crisis of 2008 year.

Within new theory of capital cost and capital structure (BFO theory) a lot of qualitatively new results have been obtained, among them:

- **Bankruptcy of the famous trade off theory has been proven**. BFO theory has destroyed some main existing principles of financial management: among them trade off theory, which was considered as keystone of formation of optimal capital structure of the company during many decades, as well as some others.

- **The qualitatively new effect in corporate finance**, discovered by authors: abnormal dependence of equity cost on leverage, which significantly alters the principles of the company's dividend policy.

- **Mechanism of formation of the company optimal capital structure**, different from suggested by trade off theory has been suggested.

- **"A golden age" of the company** has been discovered. It was shown for the first time that valuation of WACC in the Modigliani – Miller theory is not minimal and valuation of the company capitalization is not maximal, as all financiers supposed up to now: at some age of the company its WACC value turns out to be lower, than in Modigliani – Miller theory and company capitalization V turns out to be greater, than V in Modigliani – Miller theory.

- **The inflation in both Modigliani-Miller as well as in Brusov-Filatova-Orekhova theories** has been taken into account in explicit form, with the detected its non-trivial impact on the dependence of equity cost on leverage.

- **Study of the role of taxes and leverage has been done**, that allows to the Regulator to set the tax on profits rate, and to businesses to choose the optimal level of debt financing.

- **Investigation of the influence of tax on profit rate on effectiveness of investment projects** at different debt levels showed, that increase of tax on profit rate from one side leads to decrease of project NPV, but from other side it leads to decrease of sensitivity of NPV with respect to leverage level. At high leverage level L the influence of tax on profit rate change on effectiveness of investment projects becomes significantly less.

- **Studying the influence of growth of tax on profit rate** on the efficiency of the investment as well has led to two qualitatively new effects in investments:

1. the growth of tax on profit rate changes the nature of the NPV dependence on leverage L at some value t*: there is a transition from diminishing function NPV(L) at t<t*, to growing function NPV(L) at t>t*.

2. at high leverage levels the growth of tax on profit rate leads to the growth of the efficiency of the investments.

Discovered effects in investments can be applied in a real economic practice for optimizing of the management of investments.

Established BFO theory allows to conduct a valid assessment of the core parameters of financial activities of companies, such as weighted average cost of capital and equity capital cost of the company, its capitalization. It allows to a management of company to make adequate decisions, that improves the effectiveness of the company management. More generally, the introduction of the new system of evaluation of the parameters of financial activities of companies into the systems of financial reporting (IFRS, GAAP etc.) would lead to lower risk of global financial crisis.

Corporate management in the modern world is the management of financial flows. The proposed Brusov-Filatova-Orekhova theory allows correctly identify a discount rates - basic parameters for discounting of financial flows to arbitrary time moment, compare financial flows with a view to adoption of literate managerial decisions. The discount rate is a key link of the existing financial system, by pulling on the which modern finance can be adequately build, and BFO theory can assist in this.

Applications of BFO theory and its perpetuity limit (MM theory) in corporate finance and investments are discussed in the following areas:

1. Optimal capital structure in companies and corporations;

2. Rating agencies;

3. Investment companies;

4. Insurance companies;

5. Valuation of business;

6. Financial reports (ISFR, GAAP etc).

In each area using the results of BFO theory, correct discount rate etc. is very important.

While the main results of BFO theory one can see from the monograph by Brusov P, Filatova T, Orehova N, Eskindarov M Modern Corporate Finance, Investments and Taxation, Springer, 2015, http://www.springer.com/gp/book/9783319147314, in this issue the further development of modern capital structure theory and its application in different areas of corporate finance, mentioned above, is discussed.

Two first papers by Brusov P, Filatova T, Orehova N, Kulik V are devoted to application of the perpetuity limit of BFO theory (MM theory) and general BFO theory to rating methodology. For the first time authors incorporate the

main parameters of ratings - rating "ratios" - directly into modern capital structure theory. This allows use the powerful methods and "toolkit" of this theory in rating and creates practically the new basis of a rating methodology, that allows make more correct ratings. The obtained results in rating methodology are already used in educational process at Financial University (Moscow, Russia).

First paper of the issue **"The ratings: new approach"** by Brusov P, Filatova T, Orehova N, Kulik V suggests a new approach to rating methodology, key factors of which are: 1) The adequate use of discounting of financial flows virtually not used in existing rating methodologies, 2) The incorporation of rating parameters (financial "ratios") into the modern theory of capital structure. This on the one hand allows use the powerful tools of this theory in the rating, and on the other hand it ensures the correct discount rates when discounting of financial flows. The interplay between rating ratios and leverage level which can be quite important in rating is discused.

In the second paper **Rating methodology: new look and new horizons** by Brusov P, Filatova T, Orehova N, Kulik V the analysis of methodological and systemic deficiencies in the existing credit rating of non–financial issuers has been done. Paper is devoted to further development of a new approach to rating methodology suggested at first paper. Authors have generalized it for the general case of modern theory of capital structure (Brusov–Filatova–Orekhova (BFO) theory): for companies of arbitrary age. A serious modification of BFO theory in order to use it in rating procedure has been required. It allows apply obtained results for real economics, where all companies have finite lifetime, introduce a factor of time into theory, estimate the creditworthiness of companies of arbitrary age (or arbitrary lifetime), introduce discounting of the financial flows, using the correct discount rate etc. This allows use the powerful tools of BFO theory in the rating. All these create a new base for rating methodologies.

Paper **New meaningful effects in modern capital structure theory** by Brusov P, Filatova T, Orehova N, Kulik V, I Weil is devoted to describe the new meaningful effects in capital structure theory, discovered within modern theory of capital cost and capital structure, created by Brusov, Filatova and Orekhova (BFO theory). These qualitatively new effects are present in general version of BFO theory and absent in its perpetuity limit (Modigliani – Miller theory). BFO theory has changed some main existing principles of financial management. Discovered effects modify our understanding of financial management and dictate some unusual managerial decisions.

In a paper **A "golden age" of the companies: Conditions of its existence** by Brusov P, Filatova T, Orehova N, Kulik V father investigation of discovered by the authors a few years ago the effect of the "golden age" of company is continuing. It was shown for the first time that valuation of the weighted average cost of capital, WACC, in the Modigliani – Miller theory is not minimal and valuation of the company capitalization is not maximal, as all financiers supposed up to this discovery: at some age of the company its WACC value turns out to be lower, than in Modigliani – Miller theory and company capitalization V turns out to be greater, than V in Modigliani – Miller theory. It was shown that, from the point of view of cost of attracting capital there are two types of dependences of weighted average cost of capital, WACC, on the company age n: monotonic descending with n and descending with passage through minimum, followed by a limited growth. In practice there are companies with both types of dependences of WACC on the company age n.

In this paper authors investigate which companies have the "golden age", i.e. obey the latter type of dependence of WACC on n. With this aim we study the dependence of WACC on the age of company n at various leverage levels within wide spectrum of capital costs values as well as the dependence of WACC on leverage level L at fixed company age n. It was shown that existence of the "golden age" of company does not depend on the value of capital costs of the company, but depends on the difference between equity k_0 and debt k_d costs. The "golden age" of company exists at small enough difference between k_0 and k_d costs, while at high value of this difference the "golden age" of company is absent: curve WACC(n) monotonic descends with n. For the companies with the "golden age" curve WACC(L) for perpetuity companies lies between curves WACC(L) for company ages n=1 and n=3, while for the companies without the "golden age" curve WACC(L) for perpetuity companies is the lowest one.

In previous paper as well also a third type of WACC(n) dependence has been found: descending with passage through minimum, which lies below the perpetuity limit value, then going through maximum followed by a limited descending (this effect was called "Kulik effect"). In this paper a variety of "Kulik effect" has been found: descending with passage through minimum of WACC, which lies above the perpetuity limit value, then going through maximum

followed by a limited descending. The company age, where WACC has a minimum, which lies above the perpetuity limit value, was called "a silver age" of the company.

Because the cost of attracting capital is used in rating methodologies as discounting rate under discounting of cash flows, study of WACC behavior is very important for rating procedures. The account of effects of the "golden (silver) age" could change the valuation of creditworthiness of issuers.

Remind that, since the "golden age" of company depends on the company's capital costs, by controlling them (for example, by modifying the value of dividend payments, that reflect the equity cost), company may extend the "golden age" of the company, when the cost to attract capital becomes a minimal (less than perpetuity limit), and capitalization of companies becomes maximal (above than perpetuity assessment) up to a specified time interval. We discuss the use of opened effects in developing economics.

Paper **Analysis of the telecommunication companies' capital and its structure optimization** by Filonova E is connected with the formation of an optimal capital structure of a company. The application of the research refers to the leaders of the Russian telecommunication market: companies «Rostelecom», «MTS», «MegaFon», «Vimpel-Communications» and there were some attempts to form an optimal capital structure in the strategic group of competitors, based on the materials of accounting (financial) reports of these companies as at 2014 and 2015.

Paper contains the analysis of the actual capital structure of the mentioned above companies based on studying their balance sheets, made as at the end of 2016, and gives the results of the search for optimal capital structure based on the data in the new accounting period.

Paper **BFO theory principles and new opportunities for company value and risk management** by Laptev C explores the significance and additional capabilities of new principles for analyzing the capital structure and calculating the market value of a company. These principles are being developed by use of Brusov–Filatova–Orekhova theory (BFO theory) and are aimed at considering the diverse factors which affect the market value of companies. These principles include accounting and calculating of the value of a company within its lifecycle; focusing on a more complete and differentiated assessment of a company's risks and their consideration in the course of running the company and managing its market value, compared to in the Modigliani–Miller theory (MM theory). According to these principles, one should take into account and assess all significant possible effects that are formed in the course of running a company with regard to its value, even if such effects do not explicitly materialize until a certain point of time, are not taken into account during the market appraisal and are used during the company valuation as some kind of a virtual, imaginary value. Changes in the calculation of such virtual values of a company value may suggest that risks have accumulated both at the micro and macro level of economy. Studying the mechanisms created in the course of running a company and aimed at transforming the virtual values of its value into real positive or negative changes in the value can be an important tool for enhancing the effectiveness of risk management in companies and economic systems.

The problems of the capital structure of the insurance company are discussed in a paper **Optimization of the formation of the capital structure of the insurance company, taking into account the national specifics of insurance** by Sukhorukova I and Chistiakova N. Their study proposed an economic model of capital structure optimization of the insurance company, based on the actuarial method of calculating insurance tariffs. Features of the national insurance system are considered. A mathematical model and actuarial calculation of insurance tariffs for partners in the implementation of joint activities are proposed. As the algorithm implementation calculations were made for the model of joint life insurance of spouses, which has their own practical interest. A lump-sum net rate has been calculated for a contractual partner in the event of the death of one of the partners (spouses) before the retirement age, depending on the interest rate, the age of the spouses, their residual times to pensions, the death rates and the maximum permissible ages. Average time and variance of the Treaty were calculated. It is practically important for the insurance company when planning the investment of assets under the agreement. The obtained results allow calculate the insurance tariffs in the form of a lump sum payment to the insured persons and to evaluate the numerical characteristics of the validity period of the contract.

The paper **The impact of cash flows and weighted average cost of capital to enterprise value in the oil and gas sector** by Zhukov P investigates whether there is relationship between fluctuations of enterprise value or capitalization and related changes of WACC and cash flows. The study carried on the sample of some companies from the oil and gas sector, for the changes at intermediate term - from a quarter to three years. At the first stage the common model of discounting free cash flow on WACC was considered as the base model for research. The main conclusion was - intermediate term changes in the enterprise value are independent from changes of WACC. Dependence of cash flows changes is insignificant, except permanent growth rate for some growing companies. Finally it is concluded, that traditional WACC is not relevant discount rate for an assessment of enterprise value. At the second stage the alternative method for assessment of enterprise value was proposed, where cash flow is considered equal to expected value, which may grow with permanent growth rate. The method is based on stochastic cost of capital, similar to the generalized method of moments proposed by J. Cochrane, but different in conduction.

Paper **Inflation and Cash** by Popov V is devoted to study of the problem of cash demand. The optimal cash amount a person needs in order to minimize the effect of inflation and maximize percent money is given here. The corresponding number of cash transfers for a period is calculated. The corresponding formulas are presented and proved.

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