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## **THE EVOLUTION OF CAPITAL STRUCTURE THEORIES AND THEIR CLASSIFICATION**

**Abstract.** *The article deals with existing approaches of determining the optimal capital structure. Joint-stock companies operation calls for improving the capital structure aimed at the stockholder equity rise in profitability. In this case, the interests of capital owners and management may not coincide. The existing approaches distribution to two groups based on the conceptual approaches analysis dealing with optimal capital structure determination has been made. One group, called “static”, determine the optimal capital structure by current assets evaluation maximization, the other, called “dynamic”, is liable to variations of target capital structure at the certain moment. Theories within these groups were classified and their characteristic features were described on the basis of theoretical ideas of optimal capital structure peculiarities.*

**Keywords:** *financial capital, capital structure, the capital structure conceptions.*

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## **ЕВОЛЮЦІЯ ТЕОРІЙ СТРУКТУРИ КАПІТАЛУ ТА ЇХ КЛАСИФІКАЦІЯ**

**Анотація.** *У статті розглянуто існуючі підходи до визначення оптимальної структури капіталу. Функціонування акціонерних товариств викликає необхідність оптимізувати структуру капіталу для підвищення рентабельності власного капіталу. При цьому інтереси власників капіталу та менеджменту можуть не співпадати. На основі аналізу концептуальних підходів до визначення оптимальної структури капіталу здійснено розподіл існуючих підходів на дві групи: статичні – ті, які визначають оптимальну структуру капіталу шляхом максимізації поточної оцінки активів, та динамічні – ті, які допускають можливість відхилення від цільової структури капіталу у конкретний момент часу. На підставі узагальнення теоретичних уявлень про особливості формування оптимальної структури капіталу була здійснена їх класифікація в середині цих груп та дано їх характеристики.*

*Ключові слова:* фінансовий капітал; структура капіталу; концепції структури капіталу

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## ЭВОЛЮЦИЯ ТЕОРИЙ СТРУКТУРЫ КАПИТАЛА И ИХ КЛАССИФИКАЦИЯ

*Аннотация.* В статье рассмотрены существующие подходы к определению оптимальной структуры капитала. Функционирование акционерных обществ вызывает необходимость оптимизировать структуру капитала для повышения рентабельности собственного капитала. При этом интересы владельцев капитала и менеджмента могут не совпадать. На основе анализа концептуальных подходов к определению оптимальной структуры капитала осуществлено распределение существующих подходов на две группы: статические – те, которые определяют оптимальную структуру капитала путем максимизации текущей оценки активов, и динамические – те, которые допускают возможность отклонения от целевой структуры капитала в конкретный момент времени. На основании обобщения теоретических представлений об особенностях формирования оптимальной структуры капитала была осуществлена их классификация в середине этих групп.

*Ключевые слова:* финансовый капитал; структура капитала; концепции структуры капитала.

**Introduction.** Financial capital is a structural component of capital. From the point of view of the effectiveness of the usage of corporate capital the financial component plays one of the key roles. As financial capital ensures the process of production and is a link in the process of capital circulation, it gradually undergoes changing from monetary form to commodity form, providing functioning of all other corporate capital components.

Under the modern conditions of global economy development the understanding of financial capital as a purely monetary capital of financial institutes, used in a real sector, is transforming gradually. The reason is that under modern conditions stock companies' capital is formed not only due to money mobilization from different sources, but also by means of deposits of tangible and intangible assets, lots, securities, intellectual ideas etc. (Vorobiov, 2013).

As regards ensuring of the effective processes of involving and using financial capital, the questions of its structure have a primary meaning. Capital structure accumulates the possibilities of providing strategy plans realization, determines the main directions of strategic corporate development and the interests of owners in the investment in further business development. Consequently, the most debated question among economists is the question of capital structure in the context of the assessment of financial corporate capital component.

**Literature review.** The question of capital structure is studied on various planes of economy: corporate finances, finance management, finances, accounting and auditing.

Capital structure influences the results of the financial and economic activities of enterprises directly and the attitude of owners and lenders towards it, i.e. the capital value (Koval'ov, 2007).

The highest emphasis on the capital structure study is placed by foreign scientists. Among the most famous researchers of this field are: Brigham, E., Westerfield, R., Gapenski, L., Graham, B., Gropelli's, A., Franklin, A., Jordan, B., Ross, C., Dodd, D., Koval'ov, V., Kuznetsov, B., Stoyanova, O., Meyers, S., Brealey, M., Rudyk, N., Kraus, A., Majluf, N, Merton, R., Miller, M., Modigliani, F., Holt, R., [James C. Van Horne](#), Walsh, C.

Ukrainian scientists who research the problem of effective capital structure formation are: Blank, I., Bezginova, L., Vorobiov, Yu., Vlasenko, M., Garkusha, N., Yeroputov, O., Matvyichuk, L., Pantyeleyev, V., Podderiogyn, A., Ryditska, A., Semenov, G. and others. At the

same time, the question of capital structure in the context of the assessment of financial corporate capital component remains debatable among economists.

**The purpose of the article** is to generalize existing capital structure theories from the point of view of the assessment of the effectiveness of capital usage.

**Results.** The analysis of the existing approaches to the definition of capital structure helps to conclude that the majority of scientists regard capital structure as the correlation between different funding sources of an enterprise activity. Moreover, capital structure is sometimes considered as the correlation between long-term funding sources or the totality of assets invested into assets of an enterprise.

The capital structure theories base on different approaches, which characterize the possibility of corporate capital structure optimization and determine priority factors, which predetermine the mechanism of its optimization.

Let's dwell on the main characteristics of capital structure theories, described in scientific literature: trade-off, traditional capital structure theories; theories of indifference and conflicting views of capital structure formation.

The developers of trade-off theory were: M. Miller, H. DeAngelo, R. Masiulis, D. Corner (A. Kraus, 1976). According to the following theory optimal capital structure may be determined via the trade-off between maximum possible taxes economy (Tax Shield), conditioned by debt-financing and expenses, connected with possible bankruptcy, which becomes more possible, when a share debt-financing increases. For company value maximization debt-financing share must be so, that marginal costs of an additional unit of loan capital are equal to marginal benefits from using it.

Trade-off capital theory does not take into account transaction costs, which follow the process of recapitalization. It considers capital structure of the enterprises, which have assets of the same type, similar commercial risks, income level and terms of taxation. According to such conditions this theory doesn't offer a precise calculation scheme for the most effective combination of owned and borrowed capitals. The theory may help make general recommendations about taking decisions concerning capital.

Traditional capital structure theory is based on the statement about the possibility of capital structure optimization by means of considering different values of its separate components. Gordon M. (1959) concluded that capital value is the function of its structure, therefore optimal capital structure exists. At the same time, optimality criterion appears with the help of providing the minimal capital value without decreasing company value. In this case sales proceeds do not decline, market segment does not narrow, business standing do not get worth, rating among other commodity producers do not fall.

The theory is based on the statement that capital structure is optimal, an enterprise may increase its own value, using leverage rationally.

The point of optimal capital structure corresponds to the state, when weighted capital value is minimal and aggregate company value is maximal. ([James C. Van Horne](#), 2005, pp. 781-782). To increase its value an enterprise needs decrease its long-term investments and increase borrowed funds ([James C. Van Horne](#), 2005, pp. 477-478). This theory does not take into consideration influences during capital structure formation.

The author considers that using this theory under real conditions impels to use borrowed capital in business, the effective usage of which may be doubtful. Capital structure optimization is conditioned by the determination of the value of separate capital structure components.

The theory of indifference (of total value, the pie principle) is based on the idea that capital structure optimization is impossible using both the minimum weighted capital value criterion and the criterion of market value maximization of an enterprise, but is possible when the criterion of future earnings is applied. Thus, the authors of the theory (Hamada R. 1969; Miller M., Modigliani F. Dividend 1961) arrive at a conclusion that capital structure optimization does not influence these characteristics. To give proofs of their hypothesis the authors used a number of limitations, some of which ignored financial market conditions and therefore were alleviated ulteriorly. In our opinion,

the theory of the independent formation mechanism of capital value and market value of an enterprise on the basis of its structure should be regarded under the conditions of perfect market functioning.

In their further research in the network of M-M model the authors of this theory (Modigliani, F.; Miller, M. (1963), having removed a number of limitations, took into consideration the effect of company taxation and acknowledged that the mechanism of the formation of company market value is connected with the structure of its capital. The point of the modified M-M theory is that the value of a company, which uses debt financing, is higher than the value of a company, which uses its own financing by the value of the tax shield.

The basis of the theory of conflicting views is formed by the idea about different interests and levels of information awareness of owners (investors), creditors and managers in the process of capital management, the adjustment of which leads to an increase of its separate elements. The authors of the theory widened its usage substantially, without changing the principled essence of trade-off theory.

The conception of conflicting views is based on the following theories:

- the theory of information asymmetry (Bellalah M., Bouy C. (2005));
- the signalling theory ((Ross S.(1977); Myers S., Majluf N. (1984); Merton H., Rock K. (1985); Welch I. (1989));
- the theory of monitoring costs (Kathleen M. (1989); Jensen (1986)) etc.

Pecking order theory is based on the effect of information asymmetry. According to this theory (Myers S. (1993); Donaldson G. (1962)) enterprises apply a particular procedure of the choice of sources of finance, if it is necessary to attract additional capital. In this case, preference is given to inner sources of finance, i. e. accumulated profit and the sum of accumulated amortization, and only then to external sources, i. e. bank loans, debt capital issue, equity issue. Thus, the sequence of the choice of sources of finance is made out according to the criterion of risk minimization. The reason of such sequence of the choice of sources of finance, defined by pecking order theory, is information asymmetry and the effects of negative selection, which exist between managers and potential investors concerning unreasonably high yield rate.

The evaluation of risks and return on investment in an enterprise determine the conditions of capital structure optimization.

Capital structure theories may be summarized in the following way. All the models of capital structure may be divided into two big groups: static, those which determine optimal capital structure via maximization of the current valuation of assets, and dynamic, those which allow the possibility of deviation from the targeted capital structure at a particular moment of time (table 1).

*Table 1*

**The peculiarities of optimal capital structure formation on the basis of theoretical conceptions**

Theory	Optimality criterion	Advantages and peculiarities of usage	Disadvantages and limitations
1. Static capital structure theories			
1.1. Traditional theory Gordon M.	Optimal capital structure corresponds to the state, when weighted capital value is minimal and aggregate company value is maximal	<ul style="list-style-type: none"> <li>– it takes into account debt cost and capital stock cost separately;</li> <li>– it considers all the existing types of risks, and this information is available to all the participants of financial market;</li> <li>– it reconciles the interests of owners and creditors, their risks and necessary profitability (via the rates of interest of own and borrowed capitals);</li> <li>– capital value is the function of</li> </ul>	<ul style="list-style-type: none"> <li>– does not consider transaction costs and information asymmetry;</li> <li>– it is used for applied calculation, without the possibility of the analysis of causes and influences;</li> <li>– it requires a developed, marketable, diversified stock market and long-term historical data;</li> <li>– it has discrepancy in empirical data;</li> <li>– it does not explain the problems of the division of the property inside the company and the influence of capital structure on this division;</li> </ul>

		its structure;	
1.2. Theory of indifference  1.2.1. The principle of total cost  Modigliani F., Miller M.	Capital structure optimization does not influence the activities of weighted value and market value of an enterprise. Company market value depends on the aggregate value of the assets.	– it determines optimal capital structure on the basis of future cash flows; – it takes into account tax abatements of debt financing.	– it is used in a perfect market; – a single risk-free rate has an effect in the market; – the value of loan capital is not connected with the system of income taxation; – it does not take into account buying and selling capital expenses; – it does not consider the possibility of the change of integrated risk for the owners of securities under the influence of the change of capital structure.
1.2.2. The extended model of capital theory  Hamada R., Miller M., Modigliani F.	The mechanism of market value formation correlates with capital structure.	– it determines optimal capital structure on the basis of future cash flows maximization; – it takes into account tax abatements of debt financing – risk premium depends on the difference between the value of issued and borrowed capitals and the value of corporate tax rate.	– it is used in a perfect market; – a single risk-free rate has an effect in the market; – the value of loan capital is not connected with the system of income taxation; – it does not take into account buying and selling capital expenses; – the value of a financially dependent enterprise is equal to a financially independent enterprise of the same high-risk group <i>вартість</i> .
1.3. Trade-off theory  Miller M., DeAngelo H., Masiulis R., Corner D.	Optimal capital structure is determined by the point of the compromise of an enterprise, when weighted capital value is minimal.	– it considers taxation benefits of debt financing and financial instability expenses; – every enterprise chooses the level of profitability and risk in the process of capital structure formation independently.	– it does not explain the actions of managers in the periods of change of market capitalization; – the complexity of the determination of explicit and implicit costs of bankruptcy; – the ambiguity of the determination of the financial component of bankruptcy expenses, the fact (the moment) and the time horizon of bankruptcy; – problems with informational support of the evaluation of the probability of bankruptcy; – it exaggerates company's motivation concerning capital structure optimization in order to get tax abatement; – it does not consider the dynamic change of capital structure; – it does not take into account transaction costs, which follow the process of recapitalization.
<b>2. Dynamic (institutional) capital structure theories</b>			
<b>2.1. Theories of conflicting views</b>			
2.1.1. The theory of information asymmetry  Bellalah M., Bouy C.	An enterprise determines the priority of the criteria of capital structure optimization independently, considering target capital structure.	– it takes into account a real limitedness of financial information, its asymmetry; – it considers a limited rationality of economic agents; – it does not idealize market environment; – it explains available empirical data; – it characterizes the conditions of the increase of the value of separate components of capital	– it is descriptive <i>має описовий</i> (not regulatory), it is impossible to implement it in several models of capital optimization; – maximization of “positive” market signals and minimization of informational costs;

		structure.	
2.1.2. Agency costs theory (monitoring costs)  Eisenhardt K., Jensen M.	The increase of the specific weight of borrowed capital causes the increase of weighted capital value, which leads to the decrease of the market value of an enterprise.	– it considers the system status, which is the result of ambiguity, stimuli and risks; – it takes into account the value of agency costs via the conflict of interests between managers, owners and creditors; – minimization of the present value of agent costs.	– it is restricted by the case of availability of considerable agent costs; – the necessity to determine the part of all agent costs, which pertain to capital formation only; – the complexity of the determination of indirect agent costs; – it is not easy to single agent costs out because of their uniqueness and dynamism; – complicacy of the simultaneous “owners – managers” and “owners – creditors” agent costs keeping.
2.1.3. The theory of corporate control  Harris M., Raviv A., Schultz R.	Capital structure of an enterprise may be used by its management in order to block hostile takeovers.	– it describes the growth of the increase of common stock due to the initiation of the struggle for the votes of passive shareholders.	– it is restricted by the specific conditions of hostile takeover and long-term periods.
<b>2.2. The signalling theories</b>			
2.2.1. The signalling theory  Ross S., Myers S., Majluf N.	It determines the possible variants of the optimization of structure in accordance with the behaviour of managers.	– it considers the probability of the influence of managers on information flow	– managers act like monopolists on the information concerning future cash flows; – the possibility to influence the investors’ perception of risk with financial decisions; – the explanation of the choice of signals from the point of view of managers’ wellbeing.
2.2.2. The signalling model  Myers S., Majluf N.		– while using the sources of finance, which insignificantly depend on the private information about a company, allowing to take positive decisions concerning projects.	– managers act for the benefit of majority shareholders at the moment of taking decisions about the attraction of investments.
2.2.3. The signalling model  Miller M., Rock K.		– payments to the owners of capital in any form demonstrate that a company may generate considerable cash flows; – the recognition of information asymmetry, which comes from different interested parties.	– it is impossible to ensure the full access to the information concerning the criteria of investment optimality to avoid the manipulations the effects of the declaration of issues.
2.2.4. The signalling model  Rock K.		– the choice of the method of initial public offering signalizes about the risk of emission; – the ambiguity and limitedness of the information raises the price of stock floatation.	– the necessity of carrying out the evaluation of shares at a discount by initial public offering
2.2.5. The signalling model  Welch I.		– the level of underestimation of the value of shares by initial public offering is a signal for market.	– the necessity of providing the effective informing of investors by managers.
<b>2.3. Behavioural theories</b>			
2.3.1. The theory of	Minimization of the	– it considers the significance	– it is more effective for big companies,

hierarchy (pecking order theory, subordination of sources)  Myers S., Majluf N., Donaldson G.	costs and risks of financing.	of bankroll; – by the choice of the sources of finance an enterprise is guided by preserving its financial stability; – it proves the connection between the net profit ratio and loan structure.	which can use bond financing; – it determines agent risks, the dynamics of capital structure for short-term perspective on the basis of the forecast of profitability; – it uses not quantitative, but qualitative analysis of alternatives.
2.3.2. The theory of the adjustment to the market  Merton H., Baker M., Wurgler J.	The usage of the possibilities of the current market situation and keeping balance between justice and market price	– it explains the actions of financial managers under the conditions of the absence of anticipated data, necessary for capital structure optimization; – it may be used by the current planning of capital structure; – it allows to determine the time of putting shares on the market, considering the condition of share market.	– it regards an effective market with a well-developed infrastructure, a stable market situation; – it considers an effective management, able to use existing market opportunities; – the structure is regarded through the possibility of using current share market opportunities.
2.3.3. Dynamic trade-off theory  Migel A., Pindado H., Flannery M., Rengan K.	The maximization of the speed of capital structure adjustment to its optimality	– it does not contradict to static trade-off theory; – it researches the dynamics of actual capital structure, its change and the speed of adjustment to the targeted (optimality); – it researches the dynamics of capital structure in a long-term perspective; – it considers transaction costs of the financial leverage change.	– reaching optimal capital structure may not be among priority company targets; – the usage of the theory becomes more appropriate under the conditions of the increase of discount rate; – it is difficult to consider all the determinants, which influence the speed of adjustment and the width of the range of the change of capital structure.

*The table was improved and extended by the author (Rubanov, P.)*

**Conclusions.** The analysis of existing capital structure theories let us draw the following conclusions.

1. The optimality criteria of capital structure of every analyzed theory are determined in different ways.
2. The early capital structure theories consider both possible variants of capital structure management and criteria of its optimization and their absence.
3. With an increase of the role of information in taking decisions the theories, which connect the ability to manage capital structure with the amount of information, which is owned by persons concerned of corporations: management, owners, creditors, appear in the markets of capitals.

The analysis of capital structure theories allowed to group theoretical approaches to capital structure management in the following way:

- the theories, oriented to the minimization of risk, ensuring owned capital return of a moderate level by minimal enterprise value;
- the theories, oriented to the maximization of company value by the increase of the level of the profitability of owned capital and the increase of risk;
- the theories with an optimal risk and company market value ratio.

Different factors condition the usage of a theory by ensuring capital structure management; they will be researched in future. However, any capital structure theories are aimed at the usage of the main point, such as:

- on the basis of the fact that the value of different elements of capital is different, corporations, borrowing resources, which have different value, may change the profitability of owned capital, determining the level of risk, which is appropriate for them;

– to ensure an increase of market capital value, corporations may change specific gravity of different elements, which determine capital structure.

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