

## CAPITAL STRUCTURE THEORIES: REVIEW OF LITERATURE

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### **Abstract:**

*Research background:* Capital structure is a broad topic in the field of financial management of a company, which describes the composition of sources of financing for a particular enterprise. This issue has not been given much importance in the past. However, financial theorists have begun to address this topic due to the modernization of the financial system and efforts to make the business more efficient.

*Purpose of the article:* The main focus was on financial resources that the enterprise chooses to finance its business activities. The theories of the capital structure began to develop during this historical development, and their main essence is to capture the relationship between the structure of liabilities and the enterprise value. In 1958, there was a principal breakthrough in this area, as Miller and Modigliani published timeless work for the time. In this publication, the authors set out the basic assumptions and statements that shaped one of the first capital structure theories.

*Methods:* Many authors were inspired by Miller and Modigliani publication in creating new theories because these two authors introduced the idea of the independence of the capital structure. The long-term enterprise survival is conditioned by its ability to generate profit. The question is how important the liability structure itself is in achieving this goal.

*Findings & Value added:* The capital structure and decision-making in corporate financing are essential for the operation of an enterprise. The principal aim of this review paper is to explain and clarify the basic definition of the term "capital structure" and, subsequently, to evaluate the historical development of capital structure theories.

**Keywords:** capital structure; capital structure theories; literature review

**JEL Classification:** G32; L25; O16

## **1. Introduction**

The financing sources of the enterprise affect the structure of its balance sheet. The balance sheet on its right side shows the structure and state of liabilities and shareholders' equity (Shygun et al., 2020). The capital structure theories solve how many resources an enterprise

should borrow and how many resources its owners should invest in the business. The issue of capital structure optimization is one of the most discussed issues in the theory of corporate finance, to which modern corporate finance theory has not yet found a convincing answer (Michalkova et al., 2021). The development of views on the optimization of the financial structure has led to a number of theoretical concepts that differ in methodological approaches to the evaluation of individual theories, despite it is necessary to proceed from changes in institutional conditions of economic processes that significantly affect the explanatory power of specific approaches (Kucera et al., 2021). The traditional optimization criterion of minimizing the cost of capital is gradually being abandoned (Ranosz, 2017), and a new unconventional view of the equity and debt structure is coming to the fore (Ayala and Blazsek, 2021; Mouandat, 2022). Financial managers should know the theoretical approaches together with their practical modifications to the creation of the capital structure and to apply them creatively to the conditions of their own company (Kumar and Bindu, 2021). According to Bensoussan et al. (2021), the primary objective of financial decision-making is to select a structure or to find a combination of equity and debt that is most reliable for investors and simultaneously maximizes the market value of the enterprise.

In a market economy, the optimal capital structure is not only one of the principal areas but one of the most complex tasks of financial management (Paun and Pinzaru, 2021). In deciding on the optimization of the capital structure, the financial manager should, in addition to theoretical approaches and models and their practical modifications, take into account and respect several other factors that result from the generalization of empirical capital structure research.

The principal aim of this review paper is to explain and clarify the basic definition of the term "capital structure" and, subsequently, to evaluate the historical development of capital structure theories.

## **2. Theoretical Background**

In the professional literature, it is possible to encounter a double view of the description of the terms financial and capital structure. Some authors identify these concepts of financial and capital structure, and others, on the contrary, distinguish these two key concepts. Sierpinska (2021) states that the capital structure represents the structure of the resources from which the undertaking's assets arose. As reported by author, it indicates the capital structure from which the property is financed (Bukalska, 2019). According to this definition, the capital structure includes all liabilities shown on the right side of the balance sheet, and the concept of the capital structure is equal to the financial structure. Karanovic et al. (2020), in turn, refers to capital structure as the structure of resources from which are financed not only fixed assets but the fixed part of current assets. This definition therefore refers to a capital structure, a structure composed exclusively of the long-term financial resources of an enterprise. According to the authors, the term capital structure is a subset of the term financial structure, which also includes short-term financial resources of the enterprise (Dufour et al., 2018). In the international literature, Gupta et al. (2020) define capital structure as a combination of different securities and do not include, for example, retained earnings and various types of loans, thus totally ignoring resources other than the securities issued. The authors state that the financial structure has a broader scope than the capital structure. It thus includes not only the long-term capital of the enterprise, but also short-term loans (Nicolas, 2021), whose main task is to cover short-term needs and bridge the temporary shortage of means of payment. The capital structure is needed to finance the assets located in the enterprise. The decision on the appropriate ratio between

equity and debt depends on a several factors. Unfortunately, empirical research in this area lags behind theoretical knowledge because financial analysis is based on abstract concepts that are not directly observable (Kruk, 2021). Each enterprise moves in a different environment and has various competition. Thus, the resulting capital structure is influenced by income diversity (Gregova et al., 2021), expected growth, firm size (Thakolwiroj and Sithipolvanichgul, 2021) and the classification of the industry in which it operates (Nguyen et al., 2021).

Every enterprise should use just as much capital as is necessary and optimal for its efficient business operation. If the business unit operating in the market has a higher capital ratio than it can efficiently use, the enterprise is overcapitalized. This situation occurs when the ratio of shareholders' funds and non-current liabilities to fixed assets is higher than 1, and part of current assets is financed by equity. On the other hand, an enterprise may have less capital than its efficient operation requires, and this can cause problems for the business. Undercapitalization occurs when the ratio of shareholders' funds and non-current liabilities to fixed assets is lower than 1. In this case, the fixed assets are financed by shareholders funds and non-current liabilities, and the enterprise becomes insolvent (Foulis et al., 2019).

The ratio between equity and debt depends mainly on the industry in which the enterprise operates (Batrancea, 2021), the structure of the assets (Quintella and Coelho, 2021), the interest rate of banks (Saif-Alyousfi et al., 2020), and other factors. It is not possible to determine clearly whether it is better to use equity or debt to finance a particular business activity. The question of capital structure and the choice of the appropriate method of financing is an issue that enterprises are constantly dealing with. In general, the use of foreign capital increases the return on equity if the interest rate is lower than the profit of the enterprise. This effect of foreign capital is referred to as financial leverage. However, with the involvement of foreign capital, its risk also increases (Akhtar et al., 2021). The question of determining the optimal capital structure of the enterprise, hence, becomes very important. In the 20th century, the authors of financial management gradually developed several theories of capital structure optimization. Appropriate models of capital structures have been the subject of research for decades. In historical financial ideology, several capital structure theories have gradually developed, while these are variously accepted in the academic, professional sphere, and in practice.

An enterprise has to decide the proportion in which it should have its finance and outsider's finance, particularly debt finance. Based on the ratio of finance, the weighted average cost of capital (WACC) and firm value are affected. There are four capital structure theories: net income approach, net operating income approach, traditional approach, and M&M approach.

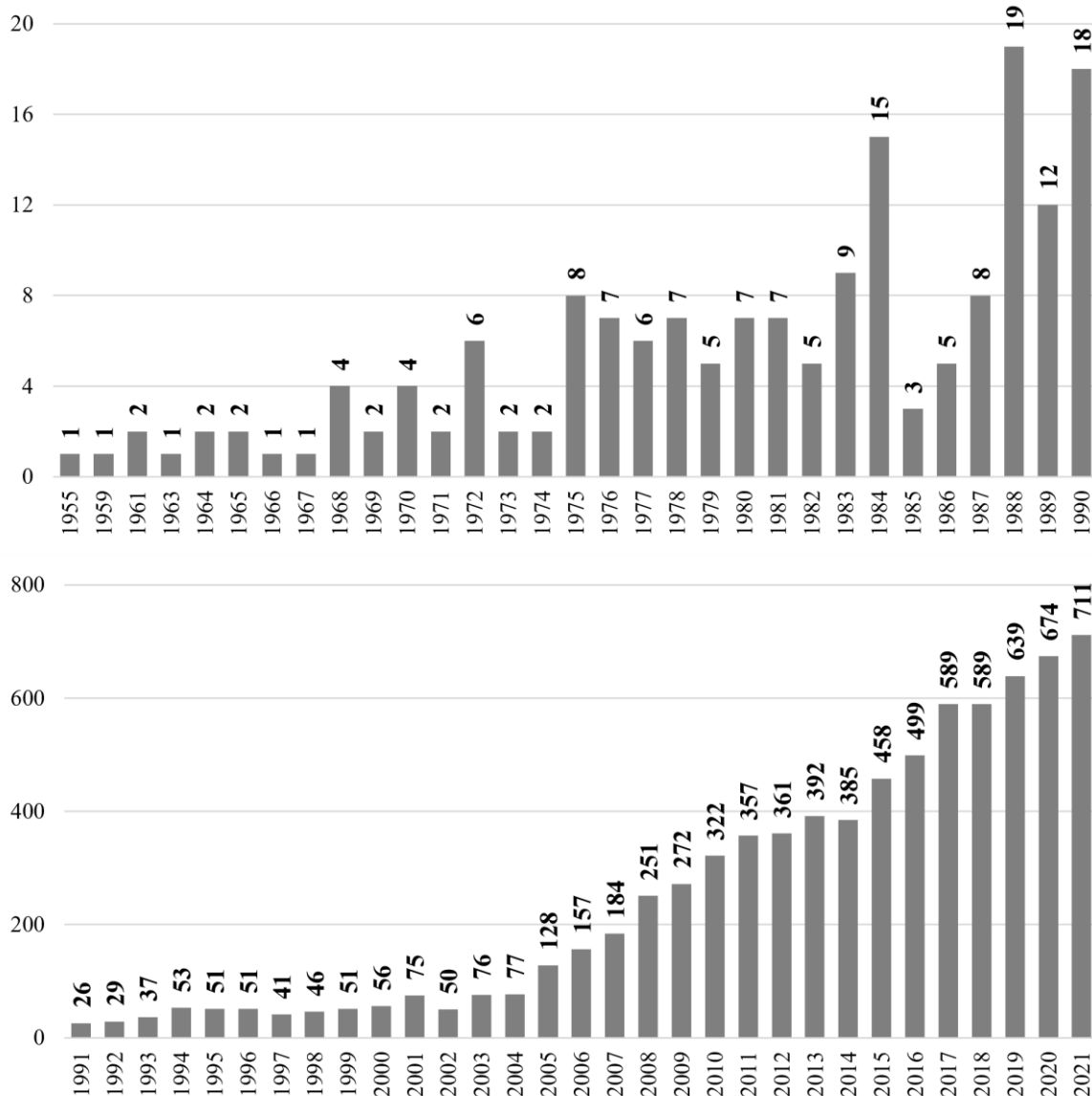
At present, many capital structure theories speak to its details, i.e. what capital composition an enterprise must have, assuming the existence of an optimal capital structure (Myers, 1984), as well as whether taxes influence the choice of an appropriate capital structure (Durand, 1952, 1959; Modigliani and Miller, 1958, 1963; Friedman, 1962, 1970), whether the risk of possible bankruptcy affects the capital structure (Baxter, 1967; Kraus & Litzenberger, 1973; Jensen, 1986), as affected by asymmetric information (Mandelbrot, 1963; Samuelson, 1965; Fama, 1970), or who implements the decision to use equity or debt financing (Donaldson, 1961; Ross, 1977; Myers and Majluf, 1984).

### **3. Methodology**

As the main idea of the paper is the research of the literature, standard scientific methods such as excerpt, abstraction, analysis, synthesis, induction, and deduction were used, working with secondary data sources including available literature sources.

The theory of capital structure plays an important role in the internal processes of enterprises, especially in the context of its financial performance, risk management assessment as well as many other processes evaluating the corporate value. The interest of researchers and academicians in this issues has been unceasing which is declared in the following figure (Fig. 1).

Figure 1. Annual growth of documents related to the issue of capital structure in the period 1955-2021



Source: own processing based on data in the scientific database Web of Science

Capital structure refers to the specific mix of debt and equity used to finance corporate assets and operations. From a corporate perspective, equity represents a more expensive, permanent source of capital with greater financial flexibility. Debt, on the other hand, represents a cheaper, finite-to-maturity capital source that legally obligates the company to fixed, promised cash outflows with the need to refinance at some future date at an unknown cost. A corporate capital structure is the result of such financing decisions that may be guided by capital structure policies or targets set by management and the board to set an optimal mix of debt and equity - this can be achieved by an application of different capital structure theories, which are revealed based on the analysis of relevant literature sources and documents.

## **4. Results and Discussion**

### **Net Income (NI) Theory**

In the past, Durand (1952) was one of the first authors who describe the capital structure and its impact on the firm value. According to the NI theory, the change in capital structure is reflected in the enterprise value. In support of this claim, the indebtedness of the enterprise increases as the weighted average cost of capital decreases. The result is an increase in the enterprise value. Therefore, the capital structure is optimal when the weighted average cost of capital is minimal.

The NI theory is based on the following assumptions: (i) there is no taxation of profits, (ii) does not take into account transaction costs associated with the issue of shares or the acquisition of foreign capital, (iii) the entire profit is divided into dividends, (iv) earnings before interest and taxes does not change in individual periods and does not change even with a change in the capital structure, (v) the distribution of the probability of expected returns is the same for all investors, (vi) shareholders demand a constant percentage of the return on their capital, and creditors similarly demand the same interest rate regardless of the enterprise capital structure.

This theory has a relatively absurd result: a capital structure with 100% foreign capital is the most appropriate because the cost of debt is lower than the cost of equity, and, therefore, the weighted average cost of capital will decrease as the share of debt in the capital structure increases. This capital structure theory ignores tax shield effects and transaction costs. The NI approach is relevant for deciding on the appropriate combination of equity and debt. The decision on the suitable capital structure thus affects not only the weighted average cost of capital of the enterprise but the value itself (Chen, 2021).

### **Net Operating Income (NOI) Theory**

A few years later, the proposal of the NOI theory to capital formation was republished by Durand (1959), which, however, differs diametrically from the NI theory. This theory suggests that a change in the value of a debt or in its leverage does not affect the overall enterprise value. Based on this theory, the weighted average cost of capital and the firm value are independent of an appropriate equity and debt financing combination.

The NOI theory is based on the following assumptions: (i) there are no corporate income taxes, (ii) debt costs remain constant at all levels of debt, (iii) total debt costs remain constant, (iv) the value of the enterprise depends on the expected net operating income and the overall capitalization rate, (v) weighted average cost of capital and the net operating income of the enterprise are not affected by the degree of leverage, (vi) operational and business risk is constant when changing the combination of equity and debt.

According to this theory, the cost of debt, the enterprise value, and the market value of the shares are constant regardless of the financial leverage modification. The advantage of low debt costs is offset by the increased rate of return on equity with the increase in debt in the capital structure. As the weighted average cost of capital is constant at any level of debt, the capital structure is thus optimal for any combination of equity and debt. Under these circumstances, the optimum level of a capital structure composed of equity and debt composition becomes indeterminate because the impact of financial leverage is counter balanced by a corresponding change in the cost of equity in the opposite direction (Kling et al., 2021).

## **Traditional Theory**

Four years later, Soloman (1963) proposed and published a traditional theory that is a compromise between the NI theory and the NOI theory, and rejects both extreme prepositions of relevance theory of NI theory and the irrelevance theory of NOI theory.

According to this approach, an enterprise can borrow at the lower interest rate until creditors consider the debt ratio as increasing their risk. Consequently, they are willing to lend only at a higher interest rate, and so the average interest rate that an enterprise pays for foreign capital begins to rise. Even the shareholders do not attend to this issue to a certain extent. If they start to feel the risk to their debt, they require an increase in its return as compensation, and the equity costs rise. As a result, to a certain proportion of foreign capital, the weighted average cost of capital of the enterprise decreases and then begins to increase. Under these assumptions, it is possible to determine the optimal capital structure at the point where the weighted average cost of capital is minimal. At this point, the optimal enterprise value is achieved (Navas, 2021).

In the past, the question was how the cost of financial distress could affect the optimal capital structure. Some theorists have not mentioned the cost of financial distress in their publications, and this has led to the misconception that enterprises should be in debt as much as possible. However, experience has shown that these costs significantly affect the cost of the debt and, therefore, the weighted average cost of capital. The optimal capital structure is described in terms of maximizing market value (Bank et al., 2020).

## **Modigliani and Miller (MM) Theory**

The initial concept of the best known and most debated model, known as the MM model, dates from 1958. The MM model is considered a fundamental element of economic theory that forms the basis of modern thinking about capital structure. The authors of this theory are Modigliani and Miller (1958).

Brusov et al. (2021) state in their publication that the MM model is based on the following assumptions: (i) the capital market is perfect, (ii) the information is free of charge and available to all investors, (iii) does not take into account transaction costs, (iv) investors behave rationally, (v) all current and future investors expect the same future profits of the enterprise (characterized by homogeneous expectations of future profits and their riskiness), (vi) enterprises are financed only by shares and bonds, (vii) the corporate debt is not risky, and the interest rate is also considered risk-free (from this point of view, it is not examined how much foreign capital the enterprise uses), (viii) the costs of financial difficulties are not taken into account, (ix) profit taxation is not taken into account (the benefit of the tax shield does not apply), (x) net income (profit and interest) does not change in individual periods, and the probable yield is the same for all investors in the given profit class, (xi) the possibility of obtaining a loan and the conditions for obtaining it are the same for all capital market entities (for enterprises as well as for individuals).

### ***MM proposition I (without taxes)***

Johnstone and Tulig (2021) present the basic principle of this model, which is statement I: under certain assumptions, the total cost of corporate capital, and thus the market value of the enterprise, is independent of the capital structure and depend solely on the return on total capital. This statement summarizes that the enterprise value is determined by corporate assets in the balance sheet, but not by the ratio between equity and debt. In fact, if there are two cash flows (A and B) in an enterprise, with flows from equity (stocks) and debt (bonds), then mathematically, the present value of the sum of those cash flows  $A + B$  it must be equal to the

present value of the cash flow from equity A (issued stocks) plus the present value of the cash flow from foreign capital B (issued bonds).

***MM proposition II (without taxes)***

Qi and Xie (2016) mention the statement II: the expected rate of return on the common stock equals to the realization rate of return of the class plus premium (derived from the financial risk), which equals to the ratio of debt-to-equity multiplied by the difference between the realization rate of return of the class and the interest rate of the debt. In simple terms, the requests of shareholders for a higher return on their capital do not appear suddenly with the increasing share of foreign capital but grow gradually. However, the interest rate on foreign capital increases from a certain level of indebtedness. The growing demands of shareholders outweigh the financial benefits of the increasing share of foreign capital, although the average costs to raise and tie up capital remain the same in any capital structure.

From the above, it is clear that in the risk debt, the rate of return on equity is growing more slowly, as the expected return is becoming less and less sensitive to further debt increases. On the contrary, a gradual increase in the rate of return on foreign capital can be observed. The reason is the gradual assumption of business risk by creditors, i.e. the more an enterprise borrows, the more risk is transferred from shareholders to creditors.

The authors interpret the following: the expected return on equity in an enterprise with foreign capital increases in direct proportion to the ratio of foreign capital to equity expressed in market values.

***MM proposition I (with taxes)***

In 1963, the authors of the model published a correction in which they recognized the impact of income taxation on the weighted average cost of capital and the market value of the business. According to this correction, with increasing indebtedness, the weighted average cost of capital decreases due to the effect of the interest tax shield. Consequently, not only the return on equity but the enterprise value increases, and therefore the enterprise should increase the share of debt in its capital structure. However, this does not mean that the enterprise should maximize the amount of its debt at all costs, as in some circumstances other financing forms may be cheaper. The authors considered the impact of personal income tax, increased requests of creditors, and the costs that are realistically associated with the business operation in the market and which cannot be included in the static equilibrium model.

Li et al. (2021) state that due to the repetition of the interest tax shield every year, its value can be determined by capitalization. The newly capitalized tax shield increases the market value of an enterprise that uses foreign resources.

***MM proposition II (with taxes)***

From the previous proposition, the enterprise should use the highest possible share of foreign resources because the present value of the tax shield is maximized as well as the enterprise value. However, financial practice has not accepted this model correction because it does not consider another crucial factor, the cost of financial difficulties. In 1976, Miller decided to include individual taxes in the model in addition to corporate taxes. Following the introduction of personal taxes, the aim of an enterprise is to choose a capital structure that maximizes the overall after-tax income and thus minimizes the overall taxation not only of the enterprise but of individuals (Elkhal, 2019).

## **Trade-off Theory**

The trade-off theory, written by Brealey and Stewart, combines the best of MM and Miller's model with market conditions. While the MM model is considered the highest indebtedness of an enterprise optimal, according to Miller's model, the optimal indebtedness is achieved when the debtor's benefits are equal to the personal tax expense of the marginal creditor. The trade-off theory realizes this assumption because it argues that the tax savings from the tax shield are uncertain. According to this theory, only a few enterprises operating in the market can be sure that they will report accounting, i.e. taxable profit. If an enterprise recognizes a loss, its interest tax shield cannot be used in a given year but only in subsequent tax periods when it makes a taxable profit.

The authors of the trade-off theory took into account not only the impact of taxes but the costs of the financial difficulties of a possible bankruptcy. They define an optimal capital structure as a compromise between the benefits of an interest tax shield and the cost of financial distress. This theory accepts the validity of individual differences between firms in the level of indebtedness and admits that firms should have as much debt as they can handle.

Sanfilippo-Azofra et al. (2016) state that the costs of financial difficulties are caused mainly by the high level of indebtedness. The costs of financial distress consist of direct costs (include various fees for lawyers and experts that a company has to pay if it goes bankrupt) and indirect costs (include expenses that result from the complexity of managing a failing enterprise).

The optimal capital structure is determined by the relationship between tax benefits and the cost of financial difficulties. As debt grows, the present value of the interest tax shield grows. With moderate indebtedness, the probability of financial distress is negligible, and the benefits of the interest tax shield prevail. However, at some point in debt, the probability of financial difficulties increases rapidly, and the cost of financial distress begins to reduce a substantial part of the enterprise value. The theoretical optimum is reached by the enterprise when the present value of tax savings from additional debt is offset by an increase in the present value of the cost of financial difficulties.

The quantification of direct and indirect costs of financial difficulties caused by the high corporate indebtedness was discussed by Altman (1984), who estimated through detailed analyses that these costs in industrial business units in the USA range from 12-17% on average. Weiss (1990), who in his empirical study of 37 enterprises that went bankrupt between 1979 and 1986, also summarized, that the average costs of bankruptcy accounted for 3% of the total book value of the assets of the enterprise and 20% of the market value shares in the last year before the bankruptcy. Other authors, Levy and Sarnat (1970), gave a specific example for calculating the impact of financial difficulties on the enterprise value. They assumed that the enterprise had the opportunity to insure against bankruptcy and subsequently identified the annual premium with the costs of financial distress.

Flor (2011) states that the trade-off theory of capital structure can be extended by costs arising from conflicts of interest, i.e. agency costs incurred between managers, owners and creditors. In connection with the decision on the optimal capital structure with significant two types of agency costs: agency costs of equity, which are the result of conflicting interests of managers and owners of the enterprise, and agency costs of debt resulting from conflicting interests between owners and creditors and between managers and creditors.

Lin and Chang (2011) state that the optimal capital structure is in terms of agency costs for equity and agency costs for the debt at the point where the agency costs per additional debt unit equal the agency costs per equity unit.



## **Signaling Theory**

Signaling theory is based on information asymmetry and thus expresses the belief that information about the financial health of an enterprise is not available to all market participants at the same time. In 1977, the signaling theory was developed by Ross (1977), and the author hypothesized that leverage might be affected by a positive sign of an increase in debt, which may lead to future business profits. Managers are trying to send investors a positive signal about the enterprise by adopting a capital structure with a high share of the debt. Only a prosperous enterprise can afford a higher debt in its capital structure. Investor interest will subsequently increase the prices of corporate shares. On the other hand, the additional issue of shares is a negative signal for investors. According to the author of this theory, the manager maximizes the return on incentives by choosing a financial package that would be a compromise between the current value of the broadcast market signal and the stimulating consequences. The enterprise value will increase with increasing indebtedness unless this growing indebtedness ceases to increase the market's perception of the firm value.

## **Market Efficiency Theory**

The idea that financial market returns are difficult to predict dates back to Mandelbrot (1963) and Samuelson (1965), but above all, it is closely linked to Fama (1970), in part because of his influential review of theoretical and empirical research in the 1970s. The market efficiency theory offers a completely different view of exchange rate movements. According to this theory, it is unnecessary to analyze enterprises, securities, prices, trading volumes, stock audiences, or other factors to determine future price developments because stock prices perform random movements according to this hypothesis. For this reason, financial economics recognizes this approach as well as the theory of random walks. The market efficiency theory further argues that it is not possible to achieve above-average profits in the market after adjusting for risk. Above-average profits represent higher profits adjusted for risk and transaction costs. If an enterprise achieves these above-average results, it is probably due to the use of non-public information. According to the theory, the price of each financial instrument (stock, bond, derivative, etc.) fully reflects all available relevant information, i.e. the financial market is efficient in terms of relevant information. It is not possible to find incorrectly valued financial instruments on the market. Conversely, if this situation occurs, the reason for the price change is only new information because stock prices change randomly, and stock returns are random. The market efficiency theory is the opposite of theories based on symmetric information. The efficient market hypothesis provides crucial logic for modern risk-based asset pricing theories and frameworks for how consumer-based asset valuation and consumer asset valuation can be considered a combination of the risk model with this hypothesis. Pandya (2014) states that the market efficiency theory is often considered only an academic theory, especially by fundamental and technical analysis, which often contradicts the conclusions of these analyses and tries to rationally explain the behavior of market participants and thus price movements. At the same time, it currently solves many unclear capital market problems and shows the path that the market should take.

## **Pecking Order Theory**

Pecking order theory was first suggested by Donaldson (1961), who was the first to find that an enterprise favors internal funds as a source of capital investment. In 1984, this theory was modified by Myers and Majluf (1984), and authors suggested that the use of internal funds to finance business be preferred to external ones due to the emergence of information asymmetry.

This term expresses the inequality between the knowledge of external investors and the knowledge of managers who have far more information about the economic situation of the enterprise. Pecking order theory is based on the following assumptions: (i) inflexible dividend policy, (ii) preference for internal sources of financing, (iii) aversion to the issuance of shares, (iv) asymmetry of information between managers and investors, (v) managers act by the interests of shareholders.

Pecking order theory does not define an optimal composition between equity and debt. It is crucial to divide equity into two categories: internal and external equity. The problem is that the pecking order theory recommends the enterprise to use the internal component in the first place and the external one in the last. If it is necessary to use external financing, the enterprise should use the debt first, then hybrid securities such as convertible bonds, and use the shares only as a last resort. This situation explains why less profitable enterprises borrow more. The reason is the need for more external financing, and also because the debt is in line hierarchically as soon as the internal funds are exhausted. As stated by Su et al. (2022), this theory does not explain what the optimal capital structure of the enterprise is but only determines the ideal order of sources of financing.

### **Agency Costs Theory and Free Cash Flow Theory**

Agency cost theory deals with the division of enterprise management between managers and enterprise owners. Jensen and Meckling (1976) considered two types of conflicts: conflict between shareholders and managers and conflict between shareholders and corporate bondholders. The authors argued that the conflicts lead to an agent problem, which involves an asymmetry of information between the owners and their agents (managers). Asymmetric information is a common term in capital structure theories, as it also occurs in the pecking order theory or in the signaling theory. The authors of the theory stated that managers tend to borrow due to the existence of the tax shield, but on the other hand, claim that indebtedness raises three types of agency costs that need to be taken into account. These three types include control costs with the costs of justification for creditors, the high risk costs of remunerating creditors and the costs of financial distress. Therefore, the enterprise should be in debt until the marginal increase in its value is higher than the marginal cost of the debt. Agency theory serves as a theoretical basis for the free cash flow hypothesis, which explains dividends as a means to mitigate the agency cost of free cash flows. The free cash flow hypothesis is based on the argument that a conflict of interest between managers and shareholders exists. According to Jensen (1986), debt is more likely to reduce the agency costs associated with free cash flow due to the required payments for debt contracts generally reduce the freely available cash flows that managers can use. The corporate debt draws attention to the manager's willingness to pay out future cash flows and to monitoring from creditors and the debt capital market.

## **5. Conclusion**

The capital structure theories are an internationally accepted topic among an erudite group of experts. Their contribution to the financial management of the enterprise is growing due to the increasing number of empirical studies being conducted in different countries and sectors. Many years have passed since the publication of Miller and Modigliani's ground-breaking work in 1958, and many other experts have offered their views on the issue by creating new theories.

The different approaches of capital structure theories to the firm were interesting because each of the theories tried to describe this relationship differently. Miller and Modigliani's original theory spoke of the independence of the capital structure, being indifferent between the

collection of equity and debt as a tool for financing an enterprise. Net income theory sought the optimal ratio between equity and debt, considering the amount of the tax shield and the cost of financial distress. Achieving consistent profitability and the share of tangible assets were crucial factors in trade-off theory. All these capital structure theories with the traditional theory were among the static theories, which sought the optimal level of indebtedness compared to dynamic theories. The individual static approaches were based on simplified assumptions, and since the reality was different, their applicability to the financial practice of enterprises was considerably limited. Most capital structure theories consider only a few determinants affecting the debt ratio. Empirical studies created in the past have shown that the capital structure besides the interest tax shield, the cost of financial difficulties, agency costs, etc., other determinants also affect the composition of corporate capital to varying degrees. Supporters of dynamic theories, such as pecking order theory, on the other hand, deny this idea and try to look at the problem from a different perspective.

The issue of capital structure optimization is one of the most discussed issues in the theory of corporate finance, to which modern theory of corporate finance has not yet found a convincing answer. The development of opinions on the optimization of the financial structure has led to several theoretical concepts, which differ in the methodological approach to individual theories. The traditional optimization criterion of minimizing the cost of capital is slowly being abandoned, making noticeable an unconventional view of the structure of equity and debt together.

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## References

- Akhtar, M., Yusheng, K., Haris, M., Ain, Q. U., & Javaid, H. M. (2021). Impact of financial leverage on sustainable growth, market performance, and profitability. *Economic Change and Restructuring*. doi: 10.1007/s10644-021-09321-z
- Altman, E. I. (1984). A further empirical investigation of the bankruptcy cost question. *The Journal of Finance*, 39(4), 1067-1089. doi: 10.2307/2327613
- Ayala, A. L., & Blazsek, S. (2021). Score-driven panel data models of the capital structure of US firms. *Applied Economics Letters*, 28(19), 1666-1670. doi: 10.1080/13504851.2020.1845293
- Bank, S., Çollu, D. Ai, & Bulut, H. I. (2020). Traditional or behavioural? A combined decision making trial and evaluation laboratory and analytic network process approach for capital structure determinants of Turkish companies. *Journal of Multi-Criteria Decision Analysis*, 27(3-4), 159-172. doi: 10.1002/mcda.1686
- Batrancea, L. (2021). The Influence of Liquidity and Solvency on Performance within the Healthcare Industry: Evidence from Publicly Listed Companies. *Mathematics*, 9(18). doi: 10.3390/math9182231
- Baxter, N. D. (1967). Leverage, risk of ruin and the cost of capital. *The Journal of Finance*, 22(3), 395-403. doi: 10.2307/2978892
- Bensoussan, A., Chevalier-Roignant, B., & Rivera, A. (2021). Does performance-sensitive debt mitigate debt overhang? *Journal of Economic Dynamics and Control*, 131. doi: 10.1016/j.jedc.2021.104203

- Brusov, P., Filatova, T., Orekhova, N., Kulik, V., Chang, S. I., & Lin, G. (2021). Generalization of the Modigliani–Miller Theory for the Case of Variable Profit. *Mathematics*, 9(11). doi: 10.3390/math9111286
- Bukalska, E. (2019). Testing trade-off theory and pecking order theory under managerial overconfidence. *International Journal of Management and Economics*, 55(2), 99-117. doi: 10.2478/ijme-2019-0008
- Chen, J. (2021). On the theoretical foundation of corporate finance. *Structural Change and Economic Dynamics*, 59, 256-262. doi: 10.1016/j.strueco.2021.08.012
- Donaldson, G. (1961). *Corporate Debt Capacity: A Study of Corporate Debt Policy and the Determination of Corporate Debt Capacity*. Division of Research, Graduate School of Business Administration, Harvard University.
- Dufour, D., Luu, P., & Teller, P. (2018). The influence of cash flow on the speed of adjustment to the optimal capital structure. *Research in International Business and Finance*, 45, 62-71. doi: 10.1016/j.ribaf.2017.07.132
- Durand, D. (1952). Cost of Debt and Equity Funds for Business: Trends and Problems of Measurement. *National Bureau of Economic Research*, 215–262.
- Durand, D. (1959). The Cost of Capital, Corporation Finance, and the Theory of Investment: Comment. *The American Economic Review*. 49(4), 639–655.
- Elkhal, K. (2019). Business uncertainty and financial leverage: should the firm double up on risk? *Managerial Finance*, 45(4), 536-544. doi: 10.1108/MF-10-2018-0491
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25(2), 383-423. doi: 10.2307/2325486
- Flor, C. R. (2011). Asset substitution and debt renegotiation. *Journal of Business Finance & Accounting*, 38(7-8), 915-944. doi: 10.1111/j.1468-5957.2011.02253.x
- Foullis, A., Nelson, B., & Tanaka, M. (2019). Credit traps and macroprudential leverage. *Journal of Money, Credit and Banking*, 51(7), 1963-1998. doi: 10.1111/jmcb.12567
- Last name, Initials. (Year). Book title. Publisher. URL or DOI
- Friedman, M. (1962). *Capitalism and Freedom*. The University of Chicago Press, Chicago 60637, reprint 1982.
- Friedman, M. (1970). *The Social Responsibility of Business is to Increase its Profits*. The New York Times Magazine.
- Gregova, E., Smrcka, L., Michalkova, L., & Svabova, L. (2021). Impact of tax benefits and earnings management of capital structures across V4 countries. *Acta Polytechnica Hungarica*, 18(3), 221-244.
- Gupta, S., Yadav, S. S., & Jain, P. K. (2020). Impact of foreign ownership on leverage: A study of Indian firms. *Global Business Review*. doi: 10.1177/0972150920927360
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, 76(2), 323-329.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Johnstone, D., & Tulig, S. (2021). Hamada's equation and the beta of debt under CAPM. *Accounting & Finance*. doi: 10.1111/acfi.12868
- Karanovic, G., Stambuk, A., & Jagodic, D. (2020). Profitability Performance Undercapital Structure and Other Company Characteristics: An Empirical Study Of Croatian Hotel Industry. *Zbornik veleucilista u Rijeci- Journal of the polytechnics of Rijeka*, 8(1), 227-242. doi: 10.31784/zvr.8.1.21
- Kling, G., Volz, U., Murinde, V., & Ayas, S. (2021). The impact of climate vulnerability on firms' cost of capital and access to finance. *World Development*, 137. doi: 10.1016/j.worlddev.2020.105131
- Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The journal of finance*, 28(4), 911-922. doi: 10.2307/2978343
- Kruk, S. (2021). Impact of Capital Structure on Corporate Value-Review of Literature. *Journal of Risk and Financial Management*, 14(4). doi: 10.3390/jrfm14040155
- Kucera, J., Vochozka, M., & Rowland, Z. (2021). The ideal debt ratio of an agricultural enterprise. *Sustainability*, 13(9). doi: 10.3390/su13094613
- Kumar, S. S., & Bindu, C. (2021). Determinants of capital structure: a panel regression analysis of Indian auto manufacturing companies. *Journal of Social and Economic Development*, 23(2), 338-356. doi: 10.1007/s40847-021-00159-9
- Levy, H., & Sarnat, M. (1970). Diversification, portfolio analysis and the uneasy case for conglomerate mergers. *The Journal of Finance*, 25(4), 795-802. doi: 10.2307/2325416
- Li, S., Gao, D., & Hui, X. (2021). Corporate Governance, Agency Costs, and Corporate Sustainable Development: A Mediating Effect Analysis. *Discrete Dynamics in Nature and Society*, 2021. doi: 10.1155/2021/5558175
- Lin, F. L., & Chang, T. (2011). Does debt affect firm value in Taiwan? A panel threshold regression analysis. *Applied Economics*, 43(1), 117-128. doi: 10.1080/00036840802360310

- Mandelbrot, B. (1963). The Variation of Certain Speculative Prices. *The Journal of Business*, 36(4), 394-419. doi: 10.1086/294632
- Michalkova, L., Stehel, V., Nica, E., & Durana, P. (2021). Corporate Management: Capital Structure and Tax Shields. *Marketing and Management of Innovations*, (3), 276-295. doi: 10.21272/mmi.2021.3-23
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.
- Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. *The American Economic Review*, 53(3), 433-443.
- Mouandat, S. R. (2022). Is Foreign Debt Management in Gabon Efficient? *Management Dynamics in the Knowledge Economy*, 10(1), 82-94. doi: 10.2478/mdke-2022-0006
- Myers, S. C. (1984). Capital structure puzzle. *Journal of Finance*, 39(3), 575-592. doi: 10.2307/2327916
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221. doi: 10.1016/0304-405X(84)90023-0
- Navas, J. F. (2021). Secured Debt, Agency Problems, and the Classic Model of the Firm. *The Quarterly Journal of Finance*, 11(3). doi: 10.1142/S2010139221500154
- Nguyen, T. G., Nguyen, L., & Nguyen, T. D. (2021). Capital structure and its determinants: evidence from Vietnam. *Journal of Asian Finance Economics and Business*, 8(10), 1-10. doi: 10.13106/jafeb.2021.vol8.no10.0001
- Nicolas, T. (2021). Short-term financial constraints and SMEs' investment decision: evidence from the working capital channel. *Small Business Economics*, 58(4), 1885-1914. doi: 10.1007/s11187-021-00488-3
- Pandya, F. H. (2014). An Empirical Study of Stock Market Anomalies. *NMIMS Management Review*, 25, 31-59.
- Paun, T. & Pinzaru, P. (2021). Advancing Strategic Management through Sustainable Finance. *Management Dynamics in the Knowledge Economy*, 9(2), 279-291. doi: 10.2478/mdke-2021-00019
- Qi, H., & Xie, Y. A. (2016). Cost of capital: spot rate or forward rate? *Applied Economics*, 48(40), 3804-3811. doi: 10.1080/00036846.2016.1145350
- Quintella, O. M., & Coelho, C. U. F. (2021). A study about the determinant factors of the capital structure of Brazilian companies: a quantile regression analysis. *Revista Ambiente Contabil*, 13(1), 54-71. doi: 10.21680/2176-9036.2021v13n1ID19701
- Ranosz, R. (2017). Analysis of the structure and cost of capital in mining enterprises. *Gospodarka Surowcami Mineralnymi-Mineral Resources Management*, 33(1), 77-91. doi: 10.1515/gospo-2017-0001
- Ross, S. A. (1977). Determination of Financial Structure – Incentive-Signaling Approach. *Bell Journal of Economics*, 8(1), 23-40. doi: 10.2307/3003485
- Saif-Alyousfi, A. Y., Md-Rus, R., Taufil-Mohd, K. N., Taib, H. M., & Shahar, H. K. (2020). Determinants of capital structure: evidence from Malaysian firms. *Asia-Pacific Journal of Business Administration*, 12(3-4), 283-326. doi: 10.1108/APJBA-09-2019-0202
- Samuelson, P. A. (1965). Rational theory of warrant pricing. *IMR-Industrial Management Review*, 6(2), 13-32.
- Samuelson, P. A. (2016). Proof that properly anticipated prices fluctuate randomly. *IMR-Industrial Management Review*, 6(2), 41-49.
- Sanfilippo-Azofra, S., Lopez-Gutierrez, C., & Torre-Olmo, B. (2016). Coverage of financing deficit in firms in financial distress under the pecking order theory. *E & M Ekonomie a Management*, 19(4), 104-116. doi: 10.15240/tul/001/2016-4-008
- Shygun, M., Ostapyuk, N., Zayachkivska, O., & Goilo, N. (2020). The influence of the classification of non-current assets as holding for sales on the liquidity of the company's balance sheet. *Entrepreneurship and sustainability issues*, 8(1), 30-441. doi: 10.9770/jesi.2020.8.1(30)
- Sierpinska, M. (2021). Determinants of mining companies' capital structure. *Gospodarka Surowcami Mineralnymi-Mineral Resources Management*, 37(2), 125-144. doi: 10.24425/gsm.2021.137561
- Su, M., Yan, W., & Harvey, N. Pecking order theory and church debt financing: Evidence from the United Methodist church. *Nonprofit Management and Leadership*. doi: 10.1002/nml.21509
- Thakolwiroj, C., & Sithipolvanichgul, J. (2021). Board characteristics and capital structure: evidence from Thai listed companies. *Journal of Asian Finance, Economics and Business*, 8(2), 861-872. doi: 10.13106/jafeb.2021.vol8.no2.0861
- Weiss, L. A. (1990). Bankruptcy resolution: Direct costs and violation of priority of claims. *Journal of Financial Economics*, 27(2), 285-314. doi: 10.1016/0304-405X(90)90058-8