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ENHANCING THE EFFICIENCY OF BORROWED CAPITAL UTILIZATION IN THE MACHINERY SECTOR ENTERPRISES

ПІДВИЩЕННЯ ЕФЕКТИВНОСТІ ВИКОРИСТАННЯ ПОЗИЧКОВОГО КАПІТАЛУ НА ПІДПРИЄМСТВАХ МАШИНОБУДІВНОГО СЕКТОРУ

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The article investigates the efficiency of debt capital usage in machinery enterprises, considering macroeconomic conditions, internal resources, and market cycles. The financial leverage effect is analyzed for each source of borrowed funds, including long-term and short-term loans, borrowings, trade credits, accounts payable, and interest-free liabilities. Normative values of financial autonomy, dependence, and leverage ratios are examined, along with the relationship between equity profitability and debt utilization. The coordination of operating and financial leverage is highlighted as a tool for balancing profitability and financial stability. Recommendations for optimizing capital structure, controlling debt costs, and managing financial risks are provided to enhance enterprise profitability and competitiveness.

Keywords: machinery, enterprise, finance, borrowed capital, leverage, profit.

У статті досліджується ефективність використання позичкового капіталу на підприємствах машинобудівного сектору з урахуванням макроекономічних умов, внутрішніх ресурсів підприємства та циклічності ринку. Розглянуто окремо ефект фінансового левериджу для кожного джерела залучених коштів, зокрема довгострокових і короткострокових банківських кредитів, позик, комерційного кредиту, розрахунків з постачальниками та безвідсоткових зобов'язань. Визначено нормативні значення коефіцієнтів фінансової автономії, залежності та левериджу, а також проаналізовано взаємозв'язок рентабельності власного капіталу з використанням позичкових ресурсів. Окрему увагу приділено координації операційного та фінансового левериджу як механізму забезпечення збалансованої рентабельності та фінансової стійкості підприємства. Наведено приклад розрахунку ефекту фінансового левериджу для машинобудівного заводу, що демонструє вплив структури позичкових коштів та їх вартості на рентабельність власного капіталу. Досліджено оптимальні співвідношення власного та позичкового капіталу для різних стратегій фінансування, зокрема агресивної, поміркованої та консервативної політики, та оцінено рівень фінансового ризику залежно від обраної моделі. Показано, що систематичне використання інструментів фінансового левериджу, оптимізація структури капіталу та контроль за залученням позичкових коштів дозволяють підвищити прибутковість, забезпечити фінансову стійкість та конкурентоспроможність підприємства. Запропоновано рекомендації щодо ефективного управління позичковими ресурсами, зокрема моніторинг витрат на обслуговування боргу, диверсифікацію джерел фінансування та підтримання оптимального співвідношення власного та залученого капіталу. Практична значущість роботи полягає у створенні науково обґрунтованих підходів до управління фінансовим левериджем на машинобудівних підприємствах, що сприяє підвищенню прибутковості та стабільності функціонування підприємств у конкурентному ринковому середовищі.

Ключові слова: машинобудування, підприємство, фінанси, позичковий капітал, левередж, прибуток.

Formulation of the problem. One of the key tasks of financial management in a market economy is optimizing the structure of equity and debt capital. Maximizing a company's market value is possible only with a balanced ratio between financial profitability and financial stability indicators. Capital structure management is carried out in two main directions: determining the optimal proportion of equity and debt capital, and the justified attraction of borrowed funds to ensure the desired financial balance.

In financial management, the growth of an enterprise's profitability can be evaluated through the use of financial leverage, which measures how effectively different sources of capital are utilized. Leverage is generally classified into operating leverage, related to fixed cost structures, and financial leverage, associated with the use of borrowed funds. The strategic application of financial leverage allows a company to enhance returns on equity, provided that the cost of debt is efficiently managed and the risks are properly controlled.

Analysis of recent research and publications. In financial management, profitability growth is assessed using the financial leverage indicator, which reflects the efficiency of managing various sources of capital. Studies distinguish between two types of leverage: operating and financial. Financial leverage emerged alongside the practice of using borrowed funds, enabling the generation of additional profit on equity capital. Research on the formation and valuation of capital elements has been presented in the works of both domestic and foreign economists, including J. Vakhovich, L. Krushwitz, Ch. Lee, D. Finnerty, H. V. Savitskaya, as well as I. O. Blank, H. V. Sytnik, and L. A. Lakhtionova. However, the influence of various factors on the amount of additional profit on equity at different levels of debt usage remains insufficiently studied.

I. Fischer defined capital as the discounted income from investment, formed independently of its field of application [1]. O. H. Bila interprets capital as "the total monetary resources used in the enterprise and advanced into economic activity" [2]. I. O. Blank describes capital as "the total value of resources in monetary, material, and intangible forms, as well as resources invested in the formation of the enterprise's assets" [3]. Changes in the forms, functions, purposes, principles of formation, and accumulation methods of capital determine transformations in its structure and content. Thus, capital can be considered an object of financial management, characterized by continuous movement, susceptibility to influence, and the potential to generate income for its owners.

Capital structure defines the ratio of equity to debt financing chosen by an enterprise to implement its market strategy. The term is often equated with «financial leverage» a tool that amplifies the effect of invested resources. The use of borrowed capital is aimed at long-term development and increasing the market value of the enterprise's assets [4].

Formulation of research goals. This study aims to identify ways to increase enterprise profitability through the active use of financial leverage and effective capital structure and value management.

Presentation of the main research material. The formation of a modern capital structure management system requires the development of an effective strategy with a clearly defined long-term direction, aimed at strengthening the enterprise's position, satisfying consumer needs, and achieving established goals [6]. An effective capital structure management strategy should include the implementation of innovations, consider the enterprise's transformational processes based on the rational allocation of resources, adapt operations to external economic conditions, ensure internal coordination, and anticipate future changes in the enterprise's activities. At the same time, when forming an optimal capital structure, the enterprise must consider financial market conditions and respond promptly to their fluctuations. This is particularly important during periods of instability, such as the onset of full-scale military actions in Ukraine.

Accordingly, enterprises with high debt burdens, which thus increased the profitability of their equity, experienced a partial decline in financial capacity in 2024. This indicates that an aggressive financial policy aimed at maximizing equity profitability through the use of borrowed resources can increase the risks of bankruptcy and reduce enterprise liquidity.

Moreover, under the influence of an unstable economic situation and the consequences of the war, the financial performance of enterprises across various sectors deteriorated. According to statistical data, in 2024 the share of loss-making enterprises was 22.1%, compared to 22.0% in 2023 [7]. The total losses of loss-making enterprises in 2024 amounted to UAH 273.362 billion, which is 109.7% higher than in 2023 (UAH 130.291 billion) [7].

By industry, the highest shares of loss-making enterprises were observed in the arts, sports,

entertainment, and recreation sector – 51.1%, as well as in transport and warehousing – 38.1%, while in industry the share of loss-making enterprises was 26.2% [7].

These trends highlight the importance of implementing a modern capital structure management system and the active use of financial leverage. Effective capital management involves not only maintaining an optimal ratio of equity to debt but also timely adaptation to changes in the external financial environment, resource allocation considering risks, and forecasting potential negative consequences.

Particularly critical is the control of debt burden and the use of financial leverage, since exceeding permissible limits can lead to deterioration in liquidity and financial stability. Thus, the analysis of financial results, assessment of capital structure, and development of strategies for its optimization become key elements in ensuring sustainable enterprise development under conditions of economic and political instability.

Another important aspect is the relationship between operating and financial leverage. Enterprises with high operating leverage, characterized by a significant share of fixed costs in the cost structure, should use financial leverage more cautiously, as the combined effect can significantly increase financial risk. Effective capital structure management involves coordinating these two types of leverage to achieve balanced profitability and financial stability.

Thus, financial leverage management is not only a tool for increasing profitability but also a mechanism for controlling financial risk. Scientifically grounded application of this mechanism allows enterprises to optimize the ratio of equity to debt, ensuring stable growth in profitability and financial stability.

The efficiency of engineering enterprises can be assessed by the level of debt capital usage in the context of cyclical market development [5]. Depending on the dynamics of macroenvironmental factors and internal resource capabilities of the enterprise, the priority and efficiency of rationalizing debt usage change. Table 1 presents the illustrative results of the financial leverage effect calculation for an enterprise in the mechanical engineering industry.

The data analysis indicates that in the reporting period, profit before taxes and interest increased by UAH 112 thousand, while net profit after debt servicing rose by UAH 92 thousand. At the same time, return on total capital decreased from 30.05% to 28.79%, indicating a certain decline in the efficiency of asset utilization. Despite this, the financial leverage ratio increased from 0.059 to 0.086, and the financial leverage effect (FLE) rose from 0.72% to 0.99%. This suggests that the enterprise managed to offset the decrease in return on total capital due to the favorable cost of borrowed resources. According to industry benchmarks, a financial leverage effect of 1–2% is considered acceptable for generating additional profitability without excessive risk.

In the current market environment, mechanical engineering enterprises must systematically

Table 1

Results of the financial leverage effect calculation for a mechanical engineering plant

Indicator	Previous Period	Reporting Period
Profit before taxes and interest, thousand UAH	20,142	20,254
Interest payable, thousand UAH	2,920	2,940
Profit after interest on loans, thousand UAH	17,222	17,314
Income tax, thousand UAH	3,627	3,645
Tax rate, coefficient	0.210	0.210
Average annual assets, thousand UAH	66,970	70,350
Equity, thousand UAH	63,245	64,775
Debt capital, thousand UAH	3,725	5,575
Financial leverage ratio	0.059	0.086
Return on total capital, %	30.05	28.79
Weighted average cost of debt, %	14.5	14.2
Financial leverage effect (FLE), %	0.72	0.99

Source: developed by the author

assess the structure of financing sources, the level of financial stability, and the potential investment risk. Analyzing the proportion of equity and debt in asset formation allows enterprises to determine optimal financing ratios, taking into account industry characteristics, the nature of assets, and their turnover rate. For enterprises with a significant share of long-term assets and slow capital turnover, maintaining a moderate level of financial leverage is advisable.

The effectiveness of financial leverage management is evaluated by the ratio of net profit growth to the growth of total profit before taxes and interest, which reflects the impact of borrowed capital on return on equity. Calculations show that the increase in the financial leverage effect at the studied enterprise was mainly due to the rise in the financial leverage ratio and the favorable cost of borrowed resources, which helped compensate for the decline in return on total capital. The permanent portion of current assets is primarily financed by equity and long-term debt, while the variable portion of current assets is covered by short-term borrowed funds or partially by equity under a conservative approach. The calculated ratios of financial autonomy, financial dependence, and financial leverage allow for forecasting the level of financial risk and making informed decisions regarding the attraction of borrowed funds.

Systematic application of financial leverage instruments and optimization of capital structure ensure financial stability, enhance operational efficiency, and contribute to increased return on equity, while simultaneously reducing enterprise risks and improving competitiveness in the market.

Excessive use of financial leverage can significantly increase an enterprise's financial risks, including the likelihood of insolvency due to higher debt obligations and costs associated with servicing borrowed funds. To control these risks, enterprises implement a set of measures: they establish regulatory limits on the debt-to-equity ratio, continuously monitor the cost of borrowed resources, assess the dynamics of asset profitability, and diversify sources of borrowed capital. This approach allows achieving a balance between increasing return on equity and maintaining the financial stability of the enterprise.

The financial leverage effect, when resources are managed efficiently, should be calculated separately for each type of borrowed capital: long-term and short-term bank loans, borrowings, trade credits, accounts payable, and interest-free borrowed resources. In this case, instead of using the weighted average cost of debt, the formula for calculating the financial leverage effect should incorporate the cost of the specific source: the average interest rate on long-term bank loans, the average rate on short-term loans, and so on. Analyzing the results allows assessing the contribution of each type of borrowed funds to the financial leverage effect. For the operational conditions of a mechanical engineering enterprise, trade credits and interest-free borrowed resources accounted for the largest share of the financial leverage effect in the reporting period. Thus, a mechanical engineering enterprise can increase its equity if the return on invested capital exceeds the cost of borrowed resources.

For mechanical engineering enterprises, an optimal combination of equity and debt capital is a critical aspect of effective operations. The structure of asset financing is largely determined by industry specifics: for enterprises with slow capital turnover and a large share of long-term assets, the financial leverage ratio should not be too high to avoid excessive financial risk. Establishing normative values for financial autonomy, dependence, and leverage ratios requires analyzing the actual asset structure and applying generally accepted financing principles.

Calculations for one of the leading mechanical engineering plants in the Kremenchuk industrial region show that the approach to asset financing can vary depending on the chosen financial policy. Non-current assets are partially financed by long-term debt and equity, the permanent portion of current assets is primarily financed by equity or a combination of equity and long-term obligations, while the variable portion of current assets is typically covered by short-term debt, with possible partial use of equity under a conservative management approach.

This approach allows the enterprise to maintain a balance between financial stability and the effective use of borrowed funds, reducing risks and optimizing the capital structure to ensure stable growth and profitability.

The permanent portion of current assets represents the minimum required by a mechanical engineering plant to carry out operational activities, and its size does not depend on seasonal fluctuations in production and sales volumes. This portion of current assets is usually fully financed by equity and long-term borrowed funds. The variable portion of current assets fluctuates according to seasonal

changes in activity levels. Financing the variable portion is advisable through short-term borrowed capital, and under a conservative management approach, partial financing through equity is also possible.

The financial independence ratio (Kfn), dependency ratio (Kfd), and financial leverage ratio (Kfl) were determined as follows:

– Aggressive financial policy: Kfn = 55.5 × 0.6 + 25 × 0.5 + 19.5 × 0 = 45.8%; Kfd = 100 – 45.8 = 54.2%; Kfl = 54.2 / 45.8 = 1.18.

– Moderate financial policy: Kfn = 63.15%; Kfd = 36.85%; Kfl = 0.58.

– Conservative financial policy: Kfn = 84.7%; Kfd = 15.3%; Kfl = 0.18.

Comparing the financial leverage ratios of machine-building plants in the industrial region, it can be concluded that the specific enterprise follows a moderate financial policy. The level of financial risk does not exceed the normative threshold given the existing asset structure of the enterprise. The financial leverage ratio serves both as an indicator of financial stability and as a measure of its impact on the increase or decrease of profit at the corresponding level of equity capital. The ratio of average debt to equity acts as the leverage through which the positive or negative effect of financial leverage is amplified.

The financial leverage level (FL) is measured by the ratio of the growth rate of net income (Nig %) to the growth rate of total profit before tax and interest on debt servicing (GPg%): FL=NIg%/GPg%. This ratio shows how many times the growth rate of net income exceeds the growth rate of total profit. This excess is provided by the financial leverage effect, one of the components of which is its "arm" or "shoulder" – the ratio of borrowed capital to equity. An increase or decrease in the leverage arm, depending on the specific conditions of the machine-building plant's operations, can affect the profit and return on equity. Table 2 presents the results of calculating the financial leverage level of a machine-building enterprise.

The level of financial leverage (FL) is measured as the ratio of the growth rate of net income (NIg%) to the growth rate of total profit before taxes and interest on debt servicing (GPg%), i.e., FL = NIg% / GPg%. This ratio indicates how many times the growth rate of net income exceeds the growth rate of total profit. This excess is generated by the financial leverage effect, one of the components of which is the leverage “arm” or “shoulder,” i.e., the ratio of borrowed capital to equity. An increase or decrease in the leverage arm, depending on the specific operational conditions of the machine-building plant, can influence both profit and return on equity.

According to the analysis, the financial leverage level amounted to 1.041, meaning that each 1% increase in total profit resulted in a 1.041% increase in net profit. This indicator is relatively moderate and reflects a controlled level of risk. In the event of a production decline, the ratio would behave similarly, requiring the enterprise’s management to continuously monitor the capital structure. Compared to the normative range (1.0–1.2), the obtained value corresponds to the lower bound, confirming the enterprise’s cautious approach to the use of borrowed funds.

Thus, the analysis indicates that the enterprise follows a moderate financial policy, maintaining a balance between profitability and financial stability. Further efficiency improvements are possible through the optimization of debt structure and diversification of funding sources. In addition, operational efficiency, particularly the effective management of material inventories, plays a significant role in optimizing working capital turnover and supporting financial stability. [8].

One of the key performance indicators for a machine-building enterprise is return on equity (ROE) [5]. The activities of any enterprise should aim at increasing the amount of equity and enhancing its profitability. Return on equity (ROE) and return on assets (ROA) are closely interrelated: ROE = ROA × EM, where EM is the equity multiplier or financial leverage. This relationship demonstrates the connection between the level of financial risk and equity

Table 2

Presents the results of calculating the financial leverage level for the machine-building enterprise

Indicator	Base Period	Reporting Period	Growth, %
Profit before taxes and interest, mln UAH	2,212	3,340	51.0
Net profit after taxes and interest, mln UAH	1,440	2,205	53.1

Source: developed by the author

profitability. When return on assets decreases, a machine-building enterprise must account for a certain increase in financial risk to ensure an acceptable level of return on equity. The assessment of the financial leverage effect and the use of borrowed capital should also take into account mechanisms for controlling cashless transactions, which ensure the legitimacy, security, and efficiency of the financial system [9].

Conclusions. In the current market environment, optimizing the capital structure is a key task of financial management for enterprises. The studied machine-building enterprise applies a moderate financing approach, which ensures stable financial stability and effective risk management.

The analysis showed that the increase in the financial leverage effect is primarily due to the growth of the debt utilization ratio and the favorable cost of financial resources. This allows the enterprise to offset the decline in return on assets and ensures an increase in return on equity.

Systematic assessment of the proportions of equity and borrowed capital, the nature of assets, and their turnover rate enables the determination of optimal financing ratios. For enterprises with a significant share of long-term assets, it is advisable to maintain a moderate level of financial leverage, using equity and long-term debt to finance fixed assets, while short-term resources cover variable assets.

The calculation of key indicators, such as financial autonomy, dependence, and leverage ratios, allows enterprise management to forecast the level of risk and make informed decisions regarding the use of borrowed funds. This comprehensive approach not only enhances operational efficiency but also contributes to increasing return on equity and strengthens the enterprise's competitiveness in the market.

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