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OPTIMAL LEVERAGE RATIO IN COMPANY MANAGEMENT AND APPLICATION PRACTICES

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Abstract

The article analyzes the approaches to the definition and assessment of financial leverage presented in domestic and foreign economic literature. The existing economic models, developed on the basis of the relationship between the interest coverage ratio and the level of financial leverage, allowing to determine the acceptable level of financial risk for an enterprise, as well as a general simplified scheme for analyzing financial leverage on the example of a small business entity. We also consider the difference in the approaches to using the leverage ratio, based on the goals of managing the company's profit or income. As well as the economic essence of such indicators as the volume and composition of equity and borrowed capital. The article considers the dual nature of economic events when attracting external financing, which can be considered on the basis of financial leverage. The methods of calculating the optimal leverage ratio and creating an equilibrium in the overall capital structure under various conditions, such as the conditions of a pandemic, are analyzed. The influence of various internal and external factors in making management decisions related to the determination of the optimal financial leverage ratio is disclosed. The article also discusses the sources of information used in the calculation of financial leverage that are most often used in practice in domestic companies.

Keywords: Financial leverage, financial risk, debt capital, interest coverage ratio

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1. Introduction

What is financial leverage? Financial leverage is considered to be the potential ability to manage the company's profits, based on economic indicators of the volume and components of equity and debt capital. If there is a need to increase the company's income, entrepreneurs can resort to using financial leverage. It is the most commonly used of the enterprise profitability management mechanisms.

The essence of this financial instrument lies in the fact that the company attracts borrowed money, carries out credit transactions, thereby replacing its own capital, and all its financial activities are carried out at the expense of credit money. But given the ambiguity of the nature of economic events, it must be remembered that the attraction of external financing increases the entrepreneur's own risks, because it is necessary to pay on obligations, regardless of whether the investment has brought profit or not. That is, it is necessary to take into account the effect of financial leverage.

According to the theory of Modigliani-Miller, the presence of a certain percentage of borrowed capital in the structure of total capital held by the company is beneficial for the current and future development of the company. Borrowed funds at an acceptable service price allow them to be directed to promising areas, in this case, the effect of a monetary multiplier will work, when one invested unit will increase an additional unit.

But in the presence of a high share of borrowed funds, the company may not fulfil its internal and external obligations by increasing the amount of loan servicing.

Thus, the main task of a company that attracts third-party capital is to calculate the optimal leverage ratio and create an equilibrium in the overall capital structure. It is very important.

2. Problem Statement

Studying the main task of any company is to increase its own profits. There are various ways of doing things, such as increasing market share, increasing sales, developing and introducing a new product, and so on. All of these options require additional funds. To expand or scale a business, additional cash injections or borrowed capital are always required. In Uzbekistan, where today the financial sector is well developed, it is quite easy to get access to credit or attracted capital.

“In order to increase the level of financial inclusion by optimizing the process of providing banking services in 2019-2020, commercial banks have simplified the procedure for providing credit, savings and cash services". In addition, in 2020, based on international experience in this area, the Central Bank attracted technical assistance from the World Bank in order to develop a “National Strategy for Increasing Financial Inclusion". Currently, specific measures are being developed for 2020-2025, aimed at: increasing the supply of basic financial services; development of digital financial services; financing and micro financing of small businesses; strengthening protection of the rights of consumers of financial services; increasing the financial literacy of the population and entrepreneurs (Early Report of the Central Bank of the Republic of Uzbekistan, 2019).

The main thing is to maintain a balance between the volume of borrowed and own funds. The imbalance usually leads to negative consequences. First of all, an entrepreneur who has used borrowed capital will need to return it with interest, for which it is important to have a certain financial potential. It

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is believed that a certain percentage of loan funds in the total share plays the role of an incentive for development. Usually, it is used to invest in future profits, and then the money multiplier will play. That is, the invested unit of money should give a certain rate of growth.

If the share of borrowed funds is too large, then the burden in the field of payments on obligations increases, which negatively affects the rate of asset turnover. All this together can reduce future income or lead to bankruptcy.

Financial leverage or leverage shows the effect of credit on a company's bottom line. This parameter is significant when assessing the investment potential of an organization. Its meaning is used in financial analytics. Financial leverage works in management in the same way as in physics, that is, by applying less effort, it increases the final result.

The differential of financial leverage shows the ability of an enterprise to meet its obligations and pay them, taking into account interest. If the value of the indicator is negative, then we are talking about the inability of the economic entity to cover interest payments.

The very ratio of financial leverage, first of all, shows the share of borrowed funds, as well as its effect in the formation of profits. In the course of practical and scientific research, it was determined that the share of loan capital should not exceed 70%. If the share increases, then the solvency, the independence of the company is lost, and the risk of bankruptcy also increases.

Here are the most common definitions of the leverage ratio. The leverage ratio (debt ratio, debt-to-equity ratio) is an indicator of the financial position of an enterprise, which characterizes the ratio of borrowed capital to all assets of the organization (Blank, 2002).

Leverage (Leverage - "leverage" or "lever action") is a long-term operating factor, a change in which may lead to a significant change in a number of effective indicators (Belolipetskiy, 2006).

To characterize the principled approach to business financing, financial managers and analysts use this ratio. When, with the help of borrowed funds, the company forms financial leverage to increase the return on its own funds invested in the business. Synonyms for this term are: equity ratio, financial dependence ratio, financial leverage ratio, debt burden.

In the economic literature, the following formula is most often given:

$$DFL = (1- t) \times (ROA- r) \times (D / E),$$

where, DFL is the effect of financial leverage, in percent;

t is the income tax rate, which is expressed as a decimal fraction;

ROA - the ratio of gross return on assets (characterized by the ratio of gross profit to average asset value) economic profitability by EBIT in%;

r is the average amount of interest on borrowed capital that the company pays for the use of borrowed capital, %;

D is the average amount of the borrowed capital used;

E is the average amount of the company's equity capital.

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3. Research Questions

3.1. What does this indicator reflect? In a nutshell, it makes it possible to assess the impact of a company's debt on such an indicator as the "profit" that each owner or investor expects to receive.

4. Purpose of the Study

In this paper we study to analyze financial leverage arises from the fact that the interest on debt obligations is constant, therefore, as the volume of sales changes, the profit per owner will change at a higher rate. Companies with high financial leverage are often characterized by high volatility in income or cash flows. The risks of using this financial instrument are most tangible during periods of economic downturns, since fixed costs must be financed regardless of the level of current income, based on which the enterprise management makes management decisions.

5. Research Methods

In 2020, by the Central Bank of the Republic of Uzbekistan, as part of the execution. The decree The President of the Republic of Uzbekistan dated March 19, 2020 No. UP-5969 deferred debt on loans to legal entities in the amount of 7.9 trillion soums. The Central Bank took measures to create conditions and simplify procedures for: granting by commercial banks until October 1, 2020, deferred payments on loans to legal entities and individuals, individual entrepreneurs facing financial difficulties; non-application of penalties and enforcement measures on collateral for overdue loans of borrowers whose activities were negatively affected by the introduced quarantine regime.

To understand why this formula is most often used in the calculation, we will consider the components of financial leverage. Let's highlight the most significant components:

1. Let's start with external factors, which the company practically cannot influence. The tax rate given by the expression (1 - t) - it characterizes how the financial leverage will change when the tax rate changes. The tax rate in the Republic of Uzbekistan is set by the state. But financial managers, when writing the tax policy of an enterprise, can use the most effective taxation regime: a simplified system or a generally established one, to use tax benefits or exemptions, become a payer of certain taxes on their own initiative, or open their branches in free economic zones.

Or take advantage of the opportunities provided during the pandemic, that is, the right to an interest-free deferral (installment plan) of taxes for a period until October 1, 2020 with notification of the tax authorities to micro firms, small enterprises and individual entrepreneurs who have suspended their activities and (or) who have the amount of proceeds from the sale of goods (services) is reduced by more than 50 percent compared to the monthly average for the first quarter of the current year: for value added tax - with their subsequent payment in equal installments within 12 months. That is, an external factor.

2. Second indicator (ROA - r)- the value of this indicator reflects the difference between the gross profitability ratio and the average interest on the loan. To achieve a positive effect from the financial impact on the company, it is necessary that the value of this indicator is as high as possible. This indicator is notable

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for its dynamism, so it is necessary to constantly monitor this indicator in order not to miss the moment of declining return on assets.

3. Finally, the leverage ratio (D / E), it reflects the ratio of the amount of capital raised, per unit of equity capital. It is believed that it is the value of this ratio that causes the effect of financial leverage. A positive or negative increase in this coefficient causes an increase in the effect.

Considering in the interconnection of all the above components of the effect of financial leverage, it is possible to determine the border of attracting borrowed funds that will be safe for the company in achieving the desired increase in profit.

6. Findings

To apply in practice, you need to answer the questions:

- Which indicators from the financial statements are most often applied when calculating to leverage ratio?
- What does the percentage of borrowed funds show in relation to the company's own funds?

Net borrowings are bank loans and overdrafts less cash and other liquid resources.

Equity is represented by the balance sheet value of the owners' funds invested in the company. This is the issued and paid up authorized capital plus accumulated reserves. Reserves can be retained earnings of the company from the date of incorporation, as well as any results of property revaluation and additional capital.

In conditions when there is a decrease in the main indicators characterizing the company's activities, it may be necessary to even sell some areas of business in order to timely reduce the leverage to an acceptable level.

The consequence of high leverage is the heavy burden of interest on borrowings and overdrafts on the P&L account. In the face of a deteriorating economic environment, profits may well find themselves under a double burden. There may be not only a decrease in trading revenue, but also an increase in interest rates. One way to determine the effect of leverage on profit is to calculate the interest coverage ratio, which is a rule of thumb that the interest coverage ratio should be at least 4.0, preferably 5.0 or more. This rule should not be neglected, because the loss of financial well-being can become a payback.

For clarity, let's calculate the financial leverage indicator based on practical data for the company "XXX" for 2019 and 2020. (See in Table 1).

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Table 1. Economic indicators for taxes, bank% rates (Uzbekistan) and practical data for "XXX" and for 2019 and 2020

No.	Indicators	2019 year	2020 year
1.	t - sales tax	four%	four%
2.	Profit for "XXX"	173553 thousand soums	-23289 thousand soums
3.	Average annual value of assets according to "XXX"	116772	120755.5
4.	ROA (2/3)	0.148	-0.193
5.	r - average interest rate on loans in the Republic of Uzbekistan	24.3%	24%
6.	D - borrowed capital (line 770 of the balance sheet liabilities)	28804 thousand soums	46639 thousand soums
7.	E - equity (line 480 of the balance sheet liabilities)	181,154 thousand soums	7500 thousand soums
8.	D / E Leverage Ratio (6/7)	0.16	6.21

DFL2019 = (1- 0.04) x (0.148-0.243) x (0.16) = - 0.0145

DFL2020 = (1- 0.04) x (-0.193-0.24) x (6.21) = - 2.5813

This indicator for the company "XXX" shows that the coverage ratio is much lower, therefore, in 2020, there was a deterioration in financial well-being. In 2020, it is clearly seen how the impact of the decline in return on assets had a negative impact on the financial stability of the company. And if this company took out a loan to increase working capital, it would be under a double burden.

If you look at the practice and methodology for calculating this indicator, in accordance with the regulatory and legal framework applied in Uzbekistan, it can be conditionally divided into two types:

Method I: when the source of information for the assessment is the balance sheet (value area 0 <k <1, when evaluated by external users, the recommended value, in accordance with the standards, is notless than 0.7).

k = BK / EC,

where: k - financial leverage ratio;

BK - borrowed capital (long-term and short-term);

EC - equity capital.

Method II: when the source of information for the assessment is the statement “On financial results (or, in accordance with IFRS, the statement “On profit and loss”)”. The so-called "classic model", that is, in the presence of historical data (Van Horn, 2003):

$$DFL_1 = \frac{\Delta T_{чп}}{\Delta T_{EBIT}}$$

where: ΔTEBIT is the growth rate of operating profit,

ΔTчп is the growth rate of net profit.

This indicator is used as a coefficient of elasticity, which makes it possible to estimate by what percentage the net profit of an enterprise will change when operating profit changes, for example, by 1%.

In the absence of historical data (Van Horn, 2003):

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$$DFL_2 = \frac{EBIT}{EBIT - In},$$

where: EBIT - Operating profit;

In - interest on loans and borrowings

Characterizes the relationship between operating and taxable income.

A similar grouping of methods for determining financial leverage is presented by foreign scientists-economists. Generally, it is divided into three groups (Table 2):

Table 2. Methods for determining financial leverage

No.	Method group	Author	Formula
I	Traditional approach in methods (or ratio of liabilities to equity)	Breen and Lerner, Melicher (Booth, Aivazian, Demirguc-Kunt & Maksimovic, 2001)	LTD / E = Long-term liabilities / Equity (book value);
		Bildersee (Fama & French, 2002)	MD / MA = Long-term liabilities / Equity (market value);
		Breen and Lerner, Lev and Kunitzky, Melicher and Rush, Pettit and Westerfield	TD / E = Total debt / Equity
II	Debt to assets ratio (share of debt in total funding sources)	Beaver, Kettler, and Scholes; Logue and Merville; Rosenberg and McKibben (Harris & Raviv, 1990)	LTD / TA = Long-term liabilities / Total sources *
		Thompson	TD / TA = Total Debt / Total Sources
		Thompson	STD / TA = Systematic Cumulative Debt / Total Sources
		Thompson (Singhania & Seth, 2010)	VTD / TA = Total Debt Variance / Total Sources
III	The ratio of long-term liabilities to the amount owed plus market capitalization	Doukas and Pantzalis (Doukas & Pantzalis, 2003); Mittoo and Zhang Lee and Kwok; Burgman (Burgman, 1996); Chen et al; Chkir and Cosset (Chkir & Cosset, 2001); Shumiakhtar	LTD / TD + MV = Long-term liabilities / Total debt + Market capitalization
			LTD / LTD + MV = Long-term liabilities / Long-term liabilities + Market capitalization

Note: * From the standpoint of assessing the financial condition, this ratio characterizes financial stability and is referred to as the concentration ratio of borrowed capital.

Financial leverage has a direct relationship with financial risk and an inverse relationship with financial stability. Among the coefficients of financial stability there are indicators that reflect the coverage of fixed financial costs.

The table shows that this indicator describes the structure of the company's capital and characterizes its dependence on external sources of financing. Liabilities are considered both long-term and short-term. If we take both components from the company's balance sheet, when switching to IFRS, it is recommended to make calculations based on the market valuation of assets, and not on the accounting data. Since a

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successfully operating enterprise has a market value of equity capital may exceed the book value, which means a lower value of the indicator and a lower level of financial risk. As a result, the normal value of the coefficient should be 0.5-0.7. (See in Table 3).

Table 3. Financial leverage ratio (Ivashkovskaya, 2009)

No.	Recommended rate ratio	Coefficient indicator characteristic
1.	0.5	the coefficient for this indication is optimal (equal ratio of equity and debt capital)
2.	0.6 - 0.7	is considered a normal financial dependence ratio
3.	below 0.5	this ratio speaks of the organization's too cautious approach to attracting debt capital and missed opportunities to increase the return on equity through the use of the effect of financial leverage.
4.		If the level of this indicator exceeds the recommended number, it means that the company has a high dependence on creditors, which indicates a deterioration in the stability of its financial position. The higher the ratio, the more risks the company faces with respect to the potential for bankruptcy or a shortage of cash.

If we move from theoretical material to the use of leverage in the business of ordinary companies, the profit will depend on the performance indicators of both production and monetary nature. The degree of influence of each cost item on the bottom line of the company as a whole reflects a certain leverage indicator.

Companies, as a rule, have 3 types of leverage: financial, operational and production and financial.

Financial leverage must be calculated before obtaining a loan, the company's management assesses the effect of leverage, that is, determines the amount of additional profit from the use of borrowed money.

The financial leverage ratio is an indicator that reflects the ratio of debt to equity. It is determined by the formula:

$$k = BK / EC,$$

where: BK - borrowed capital (liabilities);

EC - equity capital.

We take the values for the formula from the balance sheet. In this case, the aggregate of long-term and short-term liabilities is taken as the borrowed capital.

Let's calculate the leverage ratio on the example of a real company "XXX", using its reporting.

EC for the reporting period – 7.500 thousand soums (line 480 of the balance sheet liability)

BK for the reporting period - 46 639 thousand soums (line 770 of the balance sheet liability)

$$k = 46\ 639/7\ 500 = 6.21$$

The rate of this indicator depends on the industry sector, the size of the company and the characteristics of the production process. In foreign literature, for countries with developed economies, a value of about 1.5 is considered optimal. This means that the company is 60% financed by loans, and 40% by its own money. In Uzbekistan, indicator 1 is considered optimal or acceptable, that is, attracted finances are equal to own funds.

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"XXX" has a coefficient of 6.21 (according to data for 2020). This means that the attracted funds are more than 6 times higher than their own capital, which indicates a high degree of dependence on creditors. This indicator in 2019 was 28804/181154 = 0.16. In comparison, you can see how the conditions of the COVID-19 pandemic have dramatically affected the financial strength of a company that operates in the furniture manufacturing industry in the small business sector. It can be seen from the data that if at the end of 2019 the company was an attractive client for banks to attract loans, then at the end of 2020, it loses its given attractiveness.

Now let us consider the operational (production) leverage ratio for complexity. Operating leverage is of interest to more internal users. Internal users use the production leverage indicator to plan profit growth depending on the volume of goods output and calculate the break-even point.

Production leverage is an economic indicator that reflects the effect of the ratio of fixed and variable costs on profit before tax. Formula for calculation:

$$PL = (R - VC) / P,$$

where: PL - production leverage;

R - revenue;

VC - variable costs;

P - profit before tax.

All expenses are divided into 2 groups: variable and fixed. Variable costs (costs of raw materials, energy, transport, etc.) directly depend on the amount of goods produced. The amount of fixed costs (rent and utility payments, property and land taxes, depreciation deductions, etc.) is not affected by the amount of products produced. The less fixed costs in the total cost, the higher the increase in profit relative to the rate of revenue.

$$PL2019 = (299144-90340) / 185519 = 1.13$$

$$PL2020 = (81603-79978) / - 19773 = -0.08$$

The first indicator indicates that if in 2019 it was possible to increase the volume of revenue, for example, by 10%, then operating profit would increase by 11.3%:

$$10\% \text{ x}1.13 = 11.3\%;$$

in 2020: 10% x (-0.08) = -0.8% - profit will decrease by 0.8% with an increase in revenue by 10%.

And the last indicator is financial and industrial leverage. This indicator determines the degree of influence of all factors, both production and monetary, on the financial result of the company. It connects three indicators into one - revenue, total expenses and net profit.

Production and financial leverage is determined by the formula:

$$PFL = k \times PL$$

The obtained result shows the influence of sales volume on the profit of the enterprise. It is believed that the two above indicators should have an inverse relationship. That is, with a high level of financial leverage, production leverage should be low, and vice versa.

The identification of a high level of financial and production leverage at the enterprise simultaneously increases the risks of the business, because unfavorable factors multiply. In production, this

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is the risk of rising costs, and in financial, an increase in borrowed funds. This can be detrimental to the company.

The former can be reduced, for example, by renting a cheaper office or workshop, the latter by a lower level of leverage.

On the example of our company, the following picture was observed:

PFL2019 = 0.16 x 1.13 = 0.18;

PFL2020 = 6.21x (-0.08) = - 0.49.

What do these figures say, if in 2019 the XXX company had the opportunity to increase its revenue by 10%:

10% x0.18 = 1.8%, then this would lead to an increase in profit by 1.8%.

And in 2020: 10% x (-0.49) = - 4.9% will reduce the loss by 4.9%.

To reduce the overall risk, the company's management needs to choose one of the strategies:

- high leverage with a low level of production leverage;
- low leverage with high production leverage;
- moderate levels of both indicators - this option is optimal, but it is the most difficult to achieve.

7. Conclusion

Leverage is important to the enterprise. By influencing operational and financial components, the company can achieve high profit margins, while controlling the level of risk. Considering the dynamics of leverage indicators, it is possible to predict the further development of production, to determine the threshold of profitability and the break-even point of the business.

As for the financial leverage ratio, it is more expedient to use it for:

Comparisons with the industry average and with other firms. So, how the value of the financial leverage ratio is influenced by the industry, the scale of the enterprise, as well as the method of organizing production (capital-intensive or labor-intensive production). Therefore, the final results should be evaluated in dynamics and compared with the indicator of similar enterprises.

Analysis of the possibility of using additional borrowed sources of financing, the efficiency of production and marketing activities, the optimal decisions of financial managers in the selection of objects and sources of investment.

Analysis of the structure of debt, namely: the share of short-term debts in it, as well as arrears in the payment of taxes, wages, and various deductions.

Determination by lenders of financial independence, stability of the financial position of an organization that plans to attract additional loans.

The effect of financial leverage shows the effectiveness of the use of borrowed capital by an enterprise to increase its efficiency and profitability. Increasing profitability allows you to reinvest funds in the development of production, technology, human resources and innovation potential. All this helps to

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increase the competitiveness of the enterprise. Illiterate management of borrowed capital can lead to a rapid increase in insolvency and the emergence of the risk of bankruptcy.

In conclusion, it should be noted that when determining the optimal value of the interest coverage ratio, it is necessary not only to take into account their industry specifics, features of economic development in a given country, but also to analyze the dynamics of the coefficient, comparing it with past and expected values for similar companies. Such an analysis will reveal trends of improvement or deterioration in debt coverage over time.

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