The role of optimal capital structure in corporate finance strategy of Joint-stock companies

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Abstract: This article investigates the role of optimal capital structure in shaping the corporate finance strategies of joint stock companies. By analyzing various capital structure formula and their practical applications, the study highlights how an appropriate mix of debt and equity financing can enhance firm value and minimize financial risks. Using quantitative data from selected firms, this research demonstrates that a well-defined capital structure is essential for achieving long-term growth and shareholder satisfaction.

Keywords: optimal capital structure, corporate finance, joint stock companies, debt financing, equity financing, financial strategy

Introduction

The capital structure of a company - its mix of debt and equity-is a fundamental aspect of corporate finance that significantly impacts its operational effectiveness and market performance. For joint stock companies, which rely on public investment, achieving an optimal capital structure is crucial for maximizing shareholder value while managing financial risks. This article aims to analyze various concepts surrounding capital structure and their implications for corporate finance strategy.

In Uzbekistan, optimal capital structure plays a crucial role in the corporate finance strategy of joint-stock companies, as it helps balance debt and equity to maximize shareholder value, ensure financial sustainability, and attract investment in a developing market economy. By aligning financial strategies with the unique economic and regulatory conditions of Uzbekistan, companies can mitigate risks, reduce the cost of capital, and drive long-term growth while contributing to the country's economic modernization and stability.

According to the Decree of the President of the Republic of Uzbekistan No. PF-4720 "On measures to implement modern methods of corporate governance in Joint-stock companies" (24.04.2015)[1], following concepts are determined:

[1] National Legislation Database, 09.04.2022, No. 06/22/101/0288) // Decree of the President of the Republic of Uzbekistan No. PF-4720 "On measures to implement modern methods of corporate governance in Joint-stock companies" (24.04.2015).

- deep analysis of international experience and the introduction on this basis of modern methods of corporate management, increasing the efficiency of the use of production, investment, material, technical, financial and labor resources;

- priority creation of joint-stock companies with the participation of foreign capital, the formation of favorable conditions for the widespread attraction of foreign investment into joint-stock companies;

- a radical reorganization of the management structure of joint-stock companies, with a view to eliminating obsolete, outdated divisions and positions, and introducing new ones that correspond to modern international standards and the requirements of a market economy;

- increasing the role of shareholders, including minority shareholders, in the strategic management of a joint-stock company and in ensuring control over the effective activities of management personnel;

- training and professional development of management personnel based on cooperation with leading foreign educational institutions, as well as attracting highly qualified foreign managers to management positions in joint-stock companies.

Literature Review

Around the world, many scientists and scholars conducted researches and investigated a lot of topics related to “The role of optimal capital structure in corporate finance strategy of Joint-stock companies”.

John R. Graham (Duke University) gave some concepts related to “optimal capital structure, corporate planning, corporate investment” in his acticle (“Presidential Address: Corporate Finance and Reality”) [2]. Thomas J. O'Brien (University of Connecticut - Department of Finance) explored the topic of “risk management and the cost of capital” and gave his viewpoints in the his research (“Risk Management and the Cost of Capital for Operating Assets”) [3]. Xin Chang, Kangkang Fu, Yaling Jin and Pei Fun Liem (Nanyang Business School, Nanyang Technological University, Hong Kong Baptist University) investigated “sustainable finance” theory in their doings (“Sustainable Finance: ESG/CSR, Firm Value, and Investment Returns”)[4].

Murray Z. Frank and Vidhan K. Goyal (University of Minnesota and Hong Kong University of Science and Technology) gave their assumptions and emphasized on “empirical corporate capital structure” (“Empirical Corporate Capital Structure”)[5].

[2] John R. Graham. Duke University and NBER. March 2022. Pages 102.
[3] Thomas J. O'Brien. Risk Management and the Cost of Capital for Operating Assets. University of Connecticut - Department of Finance. Journal of Applied Corporate Finance. Last Revised: 11 Apr 2023. Pages 14.
[4] Xin Chang, Kangkang Fu, Yaling Jin and Pei Fun Liem. Sustainable Finance: ESG/CSR, Firm Value, and Investment Returns . Nanyang Business School Research Paper No. 22-17. Asia-Pacific Journal of Financial Studies. 2022. Pages 55.
[5] Murray Z. Frank and Vidhan K. Goyal. Empirical Corporate Capital Structure. HKUST Business School Research Paper No. 2022-091. 21 Feb 2023. 118 pages.

Kajetan Schuler and Dennis Schlegel ("Independent and Reutlingen University") wrote about "artificial intelligence in corporate finance strategy" in their workings ("A Framework for Corporate Artificial Intelligence Strategy")[6]. Daniel Levinthal and Brian Wu (University of Pennsylvania and University of Michigan) gave information about "the role of opportunity cost in corporate strategy" in their article, named "Corporate Strategy: An Opportunity Cost Perspective"[7].

Jordi Canals (University of Navarra) shown "corporate strategy and the role of board of directors" in his article ("Choosing the Firm's Future: The Role of the Board of Directors in Corporate Strategy.")[8]. Furthermore, Joseph Calandro Jr. and Vivek Paharia depicted "corporate strategy" ("The Credit Cycle and Corporate Strategy: Challenges and Solutions")[9]. Daniel Levinthal and Brian Wu (University of Pennsylvania) also enlightened "corporate strategy" and suggested some degree of resource redeployment of capacity-constrained capabilities on their article ("Corporate Strategy: Resource Redeployment and the Pursuit of the New Best Use")[10].

Methodology

While analysing this topic, a lot of methods are used: mathematical modelling, correlation-regression analysis, economic-statistics, grouping and comparing.

Analysis

The optimal capital structure of a firm represents the ideal combination of debt and equity financing that enhances the company's market value while keeping its cost of capital as low as possible. While debt financing is generally more cost-effective due to its tax advantages, excessive reliance on debt heightens financial risk for shareholders and raises their required return on equity. Therefore, firms must determine the balance where the additional benefits of debt match its incremental costs.

There are many methods related to calculating, assessing and determining optimal capital structure of companies. Two of them (debt/equity ratio and weighted cost of capital) are included in this acticle.

A company uses fixed fund sources, debentures, term loans etc. along with equity capital. This is known as financial leverage. The firms generally make use of

[6] Kajetan Schuler and Dennis Schlegel. A Framework for Corporate Artificial Intelligence Strategy. Independent and Reutlingen University. 2022. 14 pages.
[7] Daniel Levinthal and Brian Wu. Corporate Strategy: An Opportunity Cost Perspective. University of Pennsylvania and University of Michigan. Nov 2022. 31 pages.
[8] Jordi Canals. Choosing the Firm's Future: The Role of the Board of Directors in Corporate Strategy. IESE Business School Working Paper No. 1302-E. 21 May 2024. 38 pages.
[9] Joseph Calandro Jr. and Vivek Paharia. The Credit Cycle and Corporate Strategy: Challenges and Solutions. Strategy & Leadership, Vol. 51, No. 3, pp. 31-38, 2023.
[10] Daniel Levinthal and Brian Wu. Corporate Strategy: Resource Redeployment and the Pursuit of the New Best Use. Strategy Science (forthcoming) The Wharton School Research Paper. 39 Pages. Posted: 23 May 2024.

equity to raise debts. The number of debt units a company holds per equity unit is called the company's debt equity ratio. It is calculated by a formula

Debt Equity Ratio = Debt / Equity

Ideally, the small scale industries must have debt equity ratio of 3:1 while medium and large scale industries must have debt equity ratio of 2:1. A ratio of 3:1 indicates that for every 1 equity unit, the company can raise 3 units of debt. Higher the leverage, higher is the company"s commitments in terms of interestsand loan repayments. This in turn affects the returns of the equity shareholders. Some of the other factors that must be considered while deciding the firm's capital structure are the firm's size, its cost of capital, the way the cash flows of the company are projected and other costs incurred[11].

In order to check whether Asmita Rai's hypoteza can be applied in Uzbekistan, it will be good to inspect the correlation between the debt/equity ratio and market value/par value of shares.

Five joint-stock companies from Uzbekistan ("Bekobodsement" AJ, "Bekobodsement" AJ, "O'zbekko'mir" AJ, "Toshneftegazqurilish" AJ, "Yuggazstroy" AJ) are selected and their necessary data is accumulated[12](Table 1).

Table 1.

Information about required indeces of five Uzbek JSCs

№	Name of company	debt	equity	debt to equity ratio	nominal value of shares	market value of shares @ 25.11.2024	market value to nominal value
1	"Bekobodsement" AJ	104 719 152	441 171 091	0,24	100	9699	96,99
2	"Ohangaron don" AJ	344 337 077	62 402 500	5,52	300	5601	18,67
3	"O'zbekko'mir" AJ	1 390 229 521	912 588 621	1,52	1000	7299	7,30
4	"Toshneftegazqurilish" AJ	13 042 886	8 428 119	1,55	900	7000	7,78
5	"Yuggazstroy" AJ	41 030 235	18 188 875	2,26	5000	30240	6,05

It is shown that the calculation of debt/equity ratio is debt divided by equity and that of market value/nominal value of shares ratio is market value of shares divided by nominal value of shares. As regards to correlation between two indeces, after calculation it is[13],

corr	-0,45

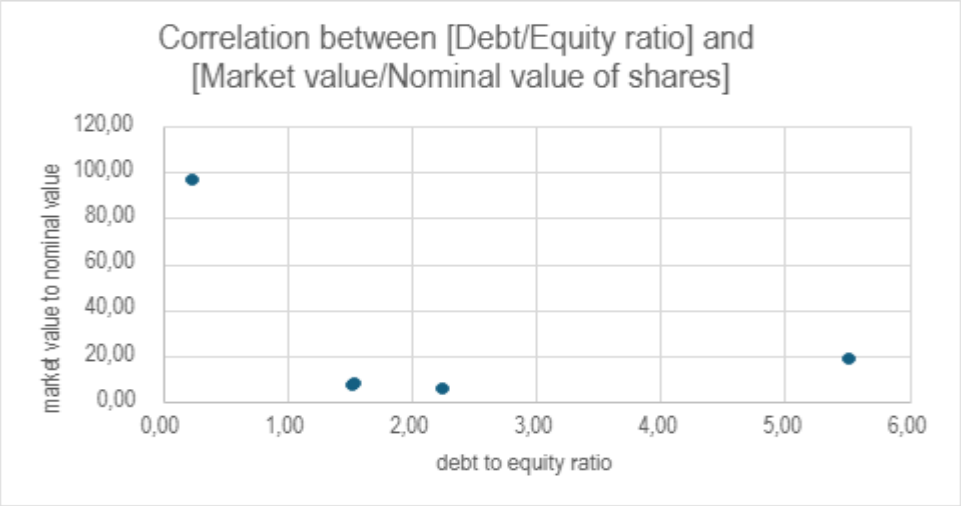
Correlation coefficient with -0.45 tells that there are normal and negative correlation. If debt/equity ratio gets bigger, market value of shares decreases because of the fact that more debt leads investors fear. But, Joint-stock companies with normal debt/equity ratio (2:1 as Asmita Rai said) had shares whose market value is

[11] Asmita Rai. Financial Management. Dr. Babasaheb Ambedkar Open University Ahmedabad. Knowledge Management and Research Organizatio. 2015. p 118.

[12] Data about debt and equity is taken from openinfo.uz and data about nominal and market value of shares is taken uzse.uz.

[13] Calculated with excel sheets.

500% bigger that nominal value. Graphically that corralation is easy to notice (Picture 1).



Picture 1. Correlation between debt/equity ratio and market/nominal value of shares

WACC, in the way that it is normally estimated, tends to be forward-focused. Since it is to be used to assess possible investment projects, WACC needs to be forward-looking, that is, to be the future cost of capital. By combining a market set price for loan stock and equities with estimated future interest and dividend payments we do achieve this. Market prices of securities are based on investors' estimates of future interest and dividend receipts[14]. WACC is calculates as

$$\text{WACC} = \frac{D}{D+E} k_d (1 - T) + \frac{E}{D+E} k_e$$

where,

D-debt

E-equity

k_d-cost of debt

k_e-cost of equity

T-tax

So as to calculate practical WACC of a Joint-stock company, "Gidroproekt" JSC is chosen. All debt (there is only long-term debt) of company is 13 417 232 000 soums and cost of debt is 25%. Moreover, its equity is 12 219 405 soums, cost of equity is 15.3% [15]and tax is 15%, then,

$$\text{WACC} = \frac{13417}{19257123} 25\%(1 - 15\%) + \frac{12219405}{19257123} 15.3\% = 9.72\%$$

A WACC of 9.72% indicates that "Gidroproekt" JSC incurs an average cost of $0.0972 for every $1 it raises. This cost could represent interest paid on debt or the return on capital, such as dividends, expected by private investors.

Conclusion

[14] Eddie McLaney. Business Finance. 8th Edition. Theory and Practice. 2009. p 287.

[15] Data is accumulated from financial statements of JSC // openinfo.uz

The study underscores the critical role of optimal capital structure in the corporate finance strategies of joint-stock companies, particularly in the case of Uzbekistan. By analyzing the balance between debt and equity financing, the research demonstrates that achieving the right mix is essential for minimizing risks, reducing costs, and enhancing shareholder value. Practical methods, including the debt/equity ratio and WACC calculations, highlight the importance of maintaining financial discipline while adapting to the economic and regulatory environment. The findings reveal that a balanced capital structure not only ensures financial sustainability but also supports the strategic goals of long-term growth and competitiveness in a developing market economy. These insights provide a foundation for future corporate governance reforms and investment strategies within joint-stock companies.

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