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Impact of Capital Structure Optimization on Enterprise Value

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Abstract: Capital structure is a crucial part of corporate financial management. This article aims to reveal the potential impact of capital structure optimization on the overall value of enterprises by studying its impact. This article analyzes the impact of asset liability ratio, current liability ratio, and long-term liability ratio on corporate value by selecting financial data from 8 representative listed companies from 2018 to 2022. This article finds that optimizing capital structure has a positive effect on the economic value added of enterprises. Meanwhile, under the influence of controlling for other variables, the size, profitability, and growth of the enterprise have a moderating effect on the optimization effect. This study provides key factors for further understanding the financial decision-making of enterprises.

1. Background Introduction and Related Work

In today's fiercely competitive business environment, capital structure plays a crucial role as a key component of corporate financial management. With the continuous evolution of the market and fluctuations in the global economy, enterprises are forced to re-examine their financial strategies. In this context, the rational allocation of capital structure is directly related to the profitability, stability, and growth potential of enterprises, and the potential effect of capital structure optimization on enterprise value provides effective financial management strategies for enterprises.

Capital structure is one of the core issues in corporate financial management, which has attracted the attention of many scholars and researchers. In the past few years, many classic capital structure theories have been proposed and developed, providing important references for understanding the relationship between capital structure and corporate value. The theory of financial leverage is one of the earliest and most widely accepted theories of capital structure, which was proposed in 1958. Shen Shenghong proposed that financial leverage has a dual effect of income and cost, believing

that the benefits of debt financing stem from the income effect being greater than the cost effect [1]. Without considering tax and market friction, capital structure has no impact on firm value. Wang Jiaxin's research shows that reducing financial leverage can help guide enterprises to expand into the capital market, suppress the phenomenon of "short-term loans and long-term investments", and promote high-quality development of enterprises [2]. Panda A K indicates that there are significant differences in the dynamic response of capital structure when key determinants are impacted. The debt ratio of financially flexible enterprises has a positive response to asset tangibility and scale, while a negative response to growth opportunities, non debt tax protection, and profitability. These findings may help business managers and policymakers measure the limitations of utilizing their debt structure through financial flexibility [3]. Czerwonka L stated in his research that there is a significant correlation between a company's leverage ratio and probability, with high-level fixed assets as collateral leading to an increase in debt to equity ratio. In addition, a high target debt ratio is positively correlated with the industry characteristics in which the enterprise operates. Compared with enterprise size as a reverse indicator of bankruptcy risk, its impact on leverage ratio is not significant [4]. Ugur M uses a multi-level risk model to analyze whether leverage or product market competition would increase or decrease financial distress risk. The results indicate that when the disciplinary effect dominates the agency cost effect, leverage or competition has a risk reducing effect. On the contrary, when the agency cost effect dominates the disciplinary effect, they have a risk increasing effect [5]. Ngoc N M used quantitative methods to analyze the impact of capital structure on corporate profitability, and research has shown that capital structure has a negative impact on profitability represented by corporate indicators [6].

In summary, by conducting in-depth research on the impact of capital structure optimization on corporate value, it can gain a more comprehensive understanding of the key factors in corporate financial decision-making. This article aims to reveal the potential impact of capital structure adjustment on the overall value of enterprises, further expand the existing theoretical framework, and provide scientific financial strategic guidance for business leaders. It would conduct in-depth analysis of the impact mechanism of capital structure and explore its application in practical business, in order to provide strong support for future strategic decision-making of enterprises.

2. Empirical Design of Correlation in Optimizing Capital Structure

The optimization of capital structure refers to the process of maximizing enterprise value by adjusting the ratio of debt to equity. Based on the research of scholars from around the world, it can be found that different capital structures in different industries directly affect the value changes of enterprises. This article adopts a mixed study of quantitative and qualitative methods to comprehensively understand the impact of capital structure optimization on corporate value [7].

2.1 Data Sources and Sample Selection

This article obtains data sources through Wind database, Juchao Information Network, and stock analysis apps such as straight flush. This article selects the financial data of 8 representative listed companies from 2018 to 2022 for correlation analysis.

2.2 Variable Design and Description

Variable definition

The dependent variable: enterprise value refers to the overall value of a company in the market, which can be measured by market value or other financial indicators, reflecting the company's overall operating condition and position in the market [8]. The economic value added of an

enterprise refers to the economic added value created by the enterprise through its production and business activities. It also refers to the net value-added created by enterprises in the production process, indicating the increase of economic activities of enterprises to the overall wealth of society [9].

Economic value added can be calculated by: [Economic value added=operating revenue - variable costs - fixed costs]

Explanatory variable: capital structure refers to the way and proportion in which a company raises capital, including the ratio and structural arrangement of debt capital and ownership capital. This article uses three commonly used indicators to measure capital structure, including asset liability ratio, current liability ratio, and long-term liability ratio [10].

Control variables: In the operation of enterprises, the characteristics of different industries can have an impact on the value of the enterprise. Changes in enterprise size, macroeconomic environment, market demand, policies and regulations can all be considered as control variables. In order to conduct a more accurate analysis in this article, it can use company size, profitability, and growth as control variables to reflect the impact of optimizing the company's capital structure through the factors of these control variables [11]. Table 1 shows the specific variable definitions.

Table 1. Variable Definition Table

Variable Type	Research Object	Variable	Variable Code	Variable Formula
Explained Variable	Enterprise Value	Economic Value Added	EVA	
Explanatory Variable	Capital Structure	Asset Liability Ratio	ALR	Total liabilities/total assets
		Current Liability Ratio	CLR	Current liabilities/total liabilities
		Long Term Debt Ratio	LTDR	Long term liabilities/total assets
Control Variable	Enterprise Size	Natural logarithm of total assets	SIZE	Total assets of ln
	Profitability	Operating Profit Margin	OPM	Operating profit/revenue
	Growth	Asset Growth Rate	GROWTH	(End of period revenue - beginning of period revenue)/beginning of period revenue

2.3 Variable Assumptions

Assumption 1: There is a negative correlation between capital structure and firm value.

Assumption 2: There is a positive correlation between revenue growth rate and enterprise value.

3. Empirical Results of Capital Structure Optimization

3.1 Descriptive Statistical Analysis

By collecting financial data from 8 listed companies between 2018 and 2022, descriptive

statistical results were obtained for EVA, asset liability ratio, current liability ratio, and long-term liability ratio based on changes over time. According to Table 2, the minimum value of the overall debt to asset ratio for different industries is 3.699%, the maximum value is 4.304%, and the average value is 4.001%. The minimum overall current liability ratio is 7.323%, the maximum overall value is 9.365%, and the average overall value is 0.082%. The minimum overall long-term debt ratio is 0.839%, the maximum overall value is 1.957%, and the average overall value is 1.187%. From the data, it can be seen that the capital structure of enterprises in different industries changes with market changes. After optimizing the capital structure of the enterprise, the equity of the capital structure is relatively stable, with almost no significant debt fluctuations, and the long-term debt pressure of the enterprise would also be relatively small. From the EVA data, the maximum value is 43.39 billion yuan and the minimum value is 1.06 billion yuan, indicating that the optimization of corporate capital structure is sustainable for the long-term development of enterprises [12-13].

Table 2. Descriptive Statistical Analysis of Asset Structure

	Time	Maximum Value	Minimum Value	Average Value	Standard Deviation
EVA (unit:Billion)	2018-2022	43.390	1.060	18.676	16.631
ALR (%)	2018-2022	4.304	3.699	4.001	0.234
CLR (%)	2018-2022	9.365	7.323	0.082	0.671
LTDR (%)	2018-2022	1.957	0.839	1.187	0.401

3.2 Correlation Analysis

To identify the linear correlation and correlation direction between variables, Pearson correlation analysis can be applied to asset structure optimization. This article uses Pearson correlation analysis to calculate the correlation coefficients between enterprise value and various variables [14-15], as shown in Table 3.

Table 3. Pearson correlation and significance analysis of capital structure

		EVA(%)				
		2018	2019	2020	2021	2022
EVA (%)	Pearson Correlation	1.000	1.000	1.000	1.000	1.000
	Sig	0	0	0	0.047	0.186
ALR (%)	Pearson Correlation	-0.176	0.180	0.359	-0.025	0.012
	Sig	0.003	0.001	0.001	0.001	0.002
CLR (%)	Pearson Correlation	-0.176	0.558	0.958	0.983	0.982
	Sig	0	0	0.001	0.007	0.013
LTDR (%)	Pearson Correlation	0.618	0.158	0.597	0.585	0.145
	Sig	0	0.001	0.001	0	0.005

According to the data in Table 3, it can be seen that there is a significant correlation between EVA and 1% of corporate capital structure. The Pearson correlation coefficients between EVA and ALR from 2018 to 2022 in the table are -0.176, 0.180, 0.359, -0.025, and 0.012, respectively, with sig (Significance Level) equal to 0.003, 0.001, 0.001, 0.001, and 0.002. The Pearson correlation coefficients between EVA and CLR were -0.176, 0.558, 0.958, 0.983, and 0.982, respectively. The sig values were 0, 0, 0.001, 0.007, and 0.013, indicating a significant negative correlation. The Pearson correlation coefficients between EVA and LTDR are 0.618, 0.158, 0.597, 0.585, and 0.145, respectively, with sig equal to 0, 001, 0.001, 0, and 0.005. According to the above data, when there is a significant negative correlation between the asset liability ratio and current liability ratio of a company, it indicates that an increase in the asset liability ratio and current liability ratio would lead to a corresponding decrease in the company's value. When the long-term debt ratio of a company is significantly positively correlated, it indicates that a decrease in the long-term debt ratio would lead to an increase in the corresponding value of the company.

4. Limitations and Prospects of this Article

Although some meaningful findings have been made in this article, there are also some limitations. This article selects 8 representative listed companies as samples, with a relatively small sample size and only covering specific industries; Secondly, the time span is relatively short, and this study only examined the data from 2018 to 2022. This article only focuses on the relationship between capital structure and enterprise value, without considering other factors that may affect enterprise value such as industry competition and market demand. Future research can consider the influence of more external factors. After conducting this study, the following suggestions are proposed. In future research, the impact mechanism of capital structure on enterprise value can be further verified by in-depth exploration of enterprise data in different industries and market environments, combined with more control variables. Meanwhile, more advanced statistical methods and models can be utilized to improve the accuracy and interpretability of research. In future research, the sample size can be expanded to consider more companies from different industries to increase the universality of the research. The time span can also be extended to gain a more comprehensive understanding of the long-term impact of capital structure on firm value.

5. Conclusions

Through in-depth research on the relationship between economic value added and capital structure of different companies mentioned above, it was found that optimizing capital structure plays a positive role in changes in enterprise value. After analyzing the financial data of 8 representative listed companies from 2018 to 2022, it was found that the increase in asset liability ratio and current liability ratio is significantly negatively correlated with the economic value added of the enterprise, while the decrease in long-term liability ratio is significantly positively correlated with the economic value added. Therefore, selecting appropriate ways to reduce short-term and long-term liabilities can help increase the economic value added of enterprises and create more favorable conditions for their sustainable development. Meanwhile, by introducing control variables such as enterprise size, profitability, and growth, this article finds that these variables have a certain moderating effect on the research results. Companies with larger scale, higher profitability, and stronger growth potential have better performance in terms of the impact of capital structure optimization on economic value added.

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