

The Impact of Corporate Leverage on Stock Returns

Xiaoyi Yang

*College of Business and Public Management, Wenzhou Kean University, Wenzhou, China
1306003@wku.edu.cn*

Abstract. The amount of debt financing used by the company for operating and investing purposes will have an impact on financing costs and business risk, etc., and may also change investors' expectations and stock market prices. Fifty randomly selected listed companies from the S&P 500 index in 2025 will be used as the research sample in this paper, and descriptive statistics and linear regression methods will be employed to examine the relationship between debt ratio and stock return according to industry characteristics. Based on the above data, it can be seen that the debt ratios and stock returns of these companies vary among different industries. The overall leverage ratios of the technology, finance and energy industries are relatively low, and those of the industrial and public utilities industries are relatively high. At the same time, regression analysis shows that there is a negative correlation between debt ratio and overall stock return, and highly indebted enterprises do not have higher stock returns. Excessive financial leverage may reduce the stock performance of the enterprise. Based on the above results, it can be concluded that the company's debt level and financial risk are relatively low. It can serve as a model for other enterprises to optimize their capital structure, formulate financing plans, and distribute funds to investors.

Keywords: debt ratio, stock return, MM theory

1. Introduction

With the development of the capital market, the relationship between capital structure and stock returns has always been one of the main research topics in corporate finance. The company can obtain funds for investment by means of debt and equity, and at the same time, its level of financial leverage will affect financing costs, operating risk and investor confidence in the company. A certain amount of debt can be used to reduce tax liabilities and thus increase the enterprise's value. At the same time, too much debt will increase financial risks and harm stock prices. Therefore, whether the highly indebted enterprises can obtain higher stock returns is still a problem that needs to be discussed further. Therefore, some randomly selected S&P 500 listed companies will be taken as the objects of study in this paper to examine the effect of corporate leverage on stock returns.

According to the theory of capital structure by Modigliani and Miller, the tax shield effect of debt financing can raise the value of the company. In addition, the trade-off theory suggests that there is an optimal capital structure for a company. That is, when the income from the tax shield and the cost of financial distress are balanced, the value of the company will be maximized. Most earlier studies

have concentrated on the connection between capital structure and corporate value or stock returns, and the horizontal comparison of listed companies in many industries is still relatively scarce. Fifty listed companies from the S&P 500 index in 2025 are chosen as the research sample in this paper, and descriptive statistics and linear regression methods will be used to examine the relationship between debt ratio and stock return. According to the study, the overall debt ratio is negatively correlated with the whole stock return. High-leverage enterprises have lower stock returns. The results have confirmed that a company's debt-to-equity ratio is correlated with its stock price fluctuations.

2. Research design

The study randomly selected 50 representative listed companies in the S&P 500 index as the research sample, covering Technology, Financial, Medical, Consumer Goods, Industrial, Energy, Communication, Materials and Public Utility, a total of nine industries. The research period is 2025, and the data used are from the company's 2025 balance sheet and Yahoo Finance open market. In order to ensure the reliability of the research results, the integrity of the samples is tested first in the process of data collation, and only companies with both financial data and stock market data are retained. In addition, outliers are identified and tested. According to the statistical results, McDonald's and Starbucks have a higher debt ratio, while Newmont's stock yield is significantly higher than that of other companies. However, the above data can be verified from public financial reports, which reflect the real operating characteristics of enterprises. Hence, they are retained to reflect the actual performance of enterprises under different capital structures.

The study uses stock return as the explanatory variable to measure the market performance of enterprise stocks in 2025. Its calculation formula is: $\text{stock return} = (P_1 - P_0 + D) / P_0$, where P_1 represents the closing price of stocks at the end of 2025, P_0 represents the closing price of stocks at the end of 2024, and D represents the cash dividend per share in 2025. The explanatory variable is debt ratio, measured by total debt/total assets. The higher the debt ratio, the higher the level of financial leverage of enterprises. At the same time, the study takes industry as a grouping variable and divides the sample into nine categories: Technology, Financial, Medical, Consumer Goods, Industrial, Energy, Communication, Materials and Public Utilities based on industry classification. This will be used to analyze the differences in capital structure of different industries and their relationship with stock returns. Finally, linear regression is used to analyze the relationship between debt ratio and stock return, and the regression coefficient is used to test the impact of corporate leverage on stock returns.

3. Descriptive statistics

3.1. Descriptive statistics of debt ratio

As shown in Figure 1, the debt ratio of the 50 sample enterprises in the S&P 500 in 2025 is between approximately 0.05 and 0.92, and the average is about 0.307. Most of the enterprises' leverage ratios are in the range of 0.2 to 0.5. Therefore, it can be seen that large listed companies generally use moderate debt financing. However, there are still significant differences among the companies. The capital structure will also be influenced by various factors such as industry characteristics, business models, financing needs, etc. Among them, McDonald's and Starbucks have relatively high leverage ratios at about 0.92 and 0.8, respectively, among consumer goods companies. NVIDIA, BlackRock and Tesla have very low leverage ratios of around 0.1 or lower and are thus in the low-leverage

group. The dispersion of the sample data is generally good, and thus it will be a reliable basis for studying the effect of the leverage ratio on stock returns.

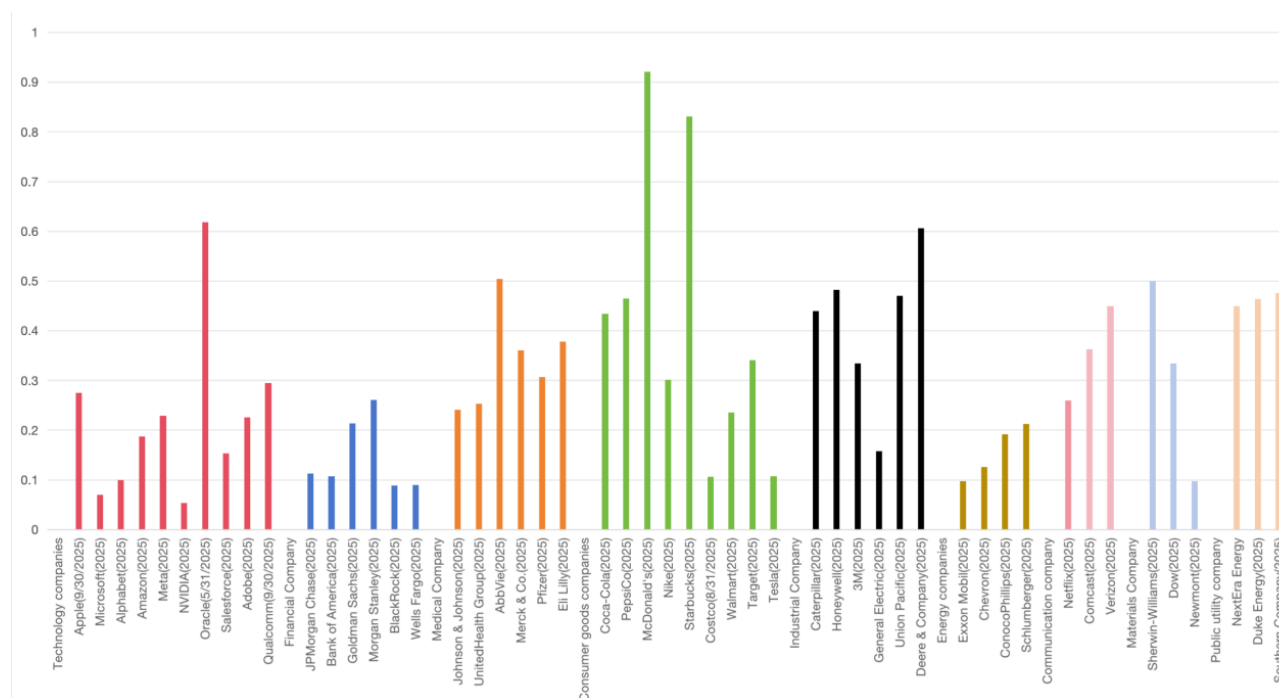


Figure 1. Distribution of debt ratios of sample enterprises (picture credit: original)

From the industry level, the technology industry has a relatively low leverage ratio, and most enterprises are in the range of 0.1-0.3. The leading technology companies Microsoft, NVIDIA and Alphabet have low debt-to-equity ratios. Oracle is relatively high at about 0.61 and is more so than the other companies. The upper and lower bounds of the leverage ratios for the financial industry are 0.08 and 0.26, and operating liabilities such as customer deposits are not included in the total debt. The medical industry has a relatively stable capital structure and is not too diversified. Consumer goods have the lowest leverage. McDonald's and Starbucks are at about 0.92 and 0.83, respectively, and Costco and Tesla are around 0.1. The total debt ratio of the industrial sector is relatively high due to large fixed-asset investment needs. At the same time, the energy industry has a low and stable level of debt with a relatively small amount. The communication industry is relatively close to the sample mean, so the old-line enterprise Verizon has continued to invest in 5G network construction and has a high proportion of assets. At the same time, the asset-light Netflix has maintained a low debt-financing ratio [1]. There are some differences in the materials industry among enterprises, and the public utilities industry has high overall debt with a small gap, supported by stable cash flow.

In short, the leverage ratios of the sample enterprises are clearly different in different industries. The overall leverage ratio of technology, finance and energy companies is low. That of industrial enterprises and public utilities is relatively high. At the same time, among consumer goods, there is a large difference. Therefore, it can be seen that a company's capital structure is affected by all kinds of reasons, including the characteristics of the industry, the stage of development, profitability and financing plan.

3.2. Descriptive statistics of stock returns

As shown in Figure 2, the overall stock returns of the sample enterprises in 2025 are quite different. Most of the enterprises have positive returns, and most of these values are between 0 and 0.4. Only a few firms have achieved a return of more than 0.5, showing that most enterprises have stable but limited investment returns during this period. At the same time, some enterprises, such as Salesforce and Adobe, have shown negative returns. Thus, it can be seen that stock returns are affected by the prosperity of the industry, operating performance, market expectations and other reasons in addition to corporate capital structure [2]. Newmont has achieved a relatively high stock yield of nearly 1.8 in all the samples, and enterprises such as Alphabet and Johnson & Johnson have also shown good returns and attracted the attention of the capital market.

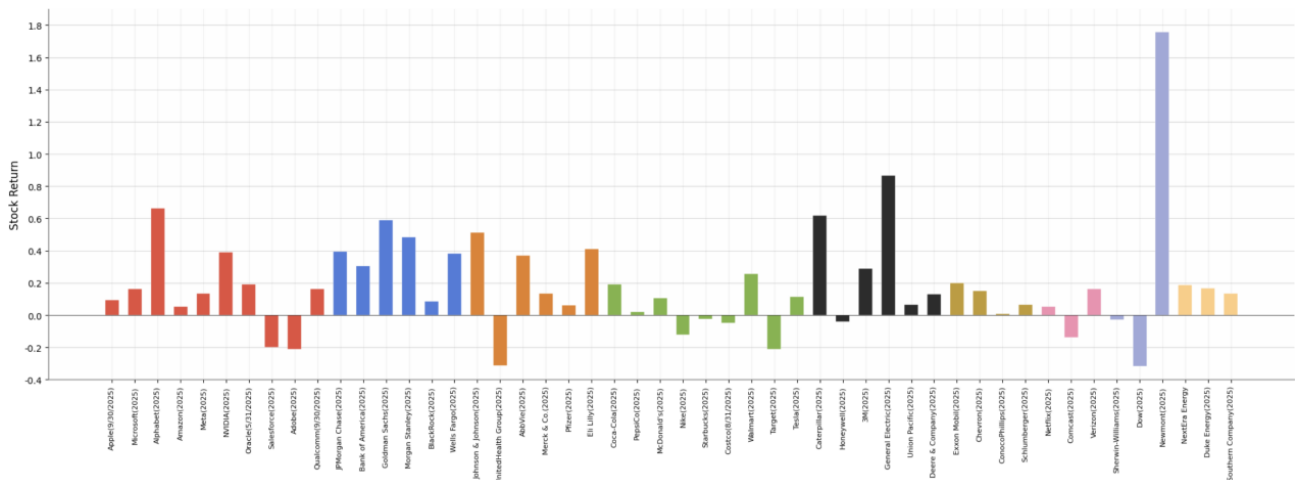


Figure 2. Stock returns of sample enterprises (picture credit: original)

Stock returns in different industries are not the same. The overall fluctuation of the technology industry is large. Alphabet and NVIDIA have performed well, but Salesforce and Adobe have shown negative returns, as the returns of technology enterprises are greatly affected by technological innovation, market competition and investor expectations [3]. There are differences among the medical sector, and although Johnson & Johnson, AbbVie, and Eli Lilly have all achieved about 0.4% returns, UnitedHealth Group has recorded a negative return. The whole of the financial industry has performed well. Most enterprises have achieved positive returns and Goldman Sachs has recorded the highest yield. The consumer goods industry has a relatively low overall stock yield but stable corporate stock performance. Overall, the industrial sector is performing well. Among these, Caterpillar and General Electric have risen more sharply than the average of all industrial enterprises due to the growth of China's economy in recent years [4]. The stock returns of the energy, communication and public utility industries are all less than 0.2. As mature, capital-intensive industries, they have limited market expansion and relatively stable investment income [5]. The return of the materials industry is highly differentiated. Newmont's stock yield has been raised due to an increase in gold prices [6]. Sherwin Williams and Dow are facing negative returns due to the slowdown of the industry [7].

Generally speaking, the stock returns of the industries are relatively different. The high-growth industries of technology, healthcare and industry have all had relatively high fluctuations in total returns, and the performance of the constituent enterprises varies. The overall return of the financial industry is good. The mature industries of consumer goods, energy and communication, public

utilities, etc., have relatively stable returns at a low level. Changes in commodity prices and the health of the industry will affect different enterprises in the material sector to varying extents. Therefore, it can be concluded that corporate industry attributes and the business environment have a significant impact on stock returns, and the market demand, competition structure and macroeconomic expectations in different industries are all different.

4. Regression analysis

Figure 3 is the linear regression results of debt ratio on stock return. The whole of the regression line is falling. It can be inferred that higher corporate debt is related to lower stock prices. The regression coefficient is -0.415. All other factors remain the same, an increase of one unit in the corporate debt-to-asset ratio is associated with a decrease of about 0.415 units in average stock yield. Although the scatter distribution is relatively spread out, and there are many differences among individual enterprises, the general trend that high leverage leads to low stock yields is consistent. According to the Modigliani-Miller theorem, in a corporate income tax system, debt financing can be used to enhance the value of a company through the tax shield effect. Raising the leverage ratio of a small number of times may create shareholder wealth [8]. However, MM Proposition II also suggests that an increase in a company's debt level is associated with an increase in its cost of equity. There is greater financial risk to shareholders and they will need to bear a larger risk premium [9]. In other words, the advantages of debt financing will be gradually cancelled out by the increase in financial risk, and a high-leverage company will not necessarily have a higher stock return.

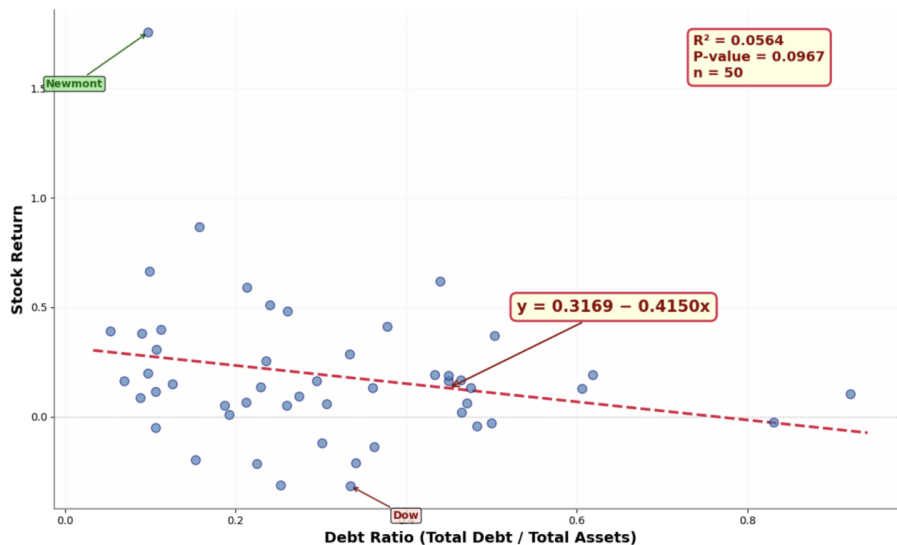


Figure 3. Linear regression results (picture credit: original)

The Regression Results are also consistent with the trade-off theory. When the corporate debt ratio is at a low level, an increase in debt will boost the value of the enterprise. However, if the leverage ratio is too high, further increases in debt will lead to a high risk of bankruptcy. At this time, it is difficult to obtain financing, and there will be higher agency costs and interest expenses. Therefore, the additional cost will exceed that of the tax shield [10]. Prices in the capital market will be affected by the risks mentioned above, thus reducing the valuation and stock return of highly indebted enterprises. Therefore, excessive debt will not continuously increase the value of the enterprise and shareholders' wealth. Rather, it will lower investors' expectations for future profit and solvency. It should be noted that the whole trend does not apply to all enterprises. A small number of

highly indebted companies still have a high rate of return, and some low-debt companies perform poorly. Stock prices are also influenced by a company's profit level, the economic environment of the industry and the overall economy. The trade-off theory is appropriate to explain that, in general, there is a negative correlation between leverage and stock returns.

5. Conclusion

Based on the research, the sample enterprises have different industries and thus different debt ratios. The overall level of technology, finance and energy industries is low, and that of industrial and public utility industries is relatively high. Based on the regression analysis, it was found that a debt-to-asset ratio of 0.415 corresponds to a stock return of -0.415. Thus, an increase in debt is associated with a decrease in stock returns, and highly indebted companies have lower stock returns. This result is consistent with the Modigliani-Miller theory and the trade-off theory. Moderate debt has the advantage of a tax shield, but too much debt will increase financial distress costs. Enterprises should consider the actual conditions and industry characteristics of operation to determine a reasonable capital structure, avoid too high a debt ratio, and thus achieve continuous development of firm value and shareholder wealth.

The first purpose of this study is to compare how much corporate leverage is associated with the rise in stock prices across different industries, and the subjects of this research are the listed companies in the 500 S&P industries. It will provide new empirical data to investigate how alterations in the composition of capital affect the value of listed companies. However, the study has some deficiencies. It only uses single-year data in 2025 and has a small number of samples. In the future, many more years of data will be used, and the scope of the sample will be extended to add more control variables and various regression models to strengthen the reliability and explanatory power of the research results.

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