Analysis of Four Capital Structure Theories and Financing Choice of Chinese-Listed Companies

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Abstract: Controlling the capital structure is crucial to the financial management of the business. Maximizing the company's worth requires finding the appropriate capital structure. In this study, the relationship between corporate capital structure and corporate value is further investigated using the weighted average cost of capital (WACC) and capital asset pricing model (CAPM) analyses of four capital structure theories, including M&M's First and Second Theories, the Trade-off Theory and the Pecking Order Theory, which examine the reasons why listed businesses' financing sequence conflicts with western thinking and point out its uniqueness and policy recommendations based on the current situation of China's stock market.

Keywords: capital structure, M&M theory, WACC, company value

1. Introduction

Financing behavior is necessary for companies in the expansion stage. In order to find the best capital structure, reduce costs and improve efficiency, so as to increase the company's value, the company needs to understand the composition and role of equity financing and debt financing in the capital structure and considered the practical adaptability of the theory. The theory of capital structure has formed a relatively complete theoretical system in the development of more than 50 years, but both the old and new theories of capital structure have many defects in the interpretation of the real world [1].

A company needs to calculate a reasonable cost of capital to estimate its value. Generally, the average capital expense in weighted terms is used to calculate the cost of capital, also known as WACC.

$$\text{WACC} = \frac{K_e * E + K_d * D}{E + D} \tag{1}$$

Where, D is debt, E is equity, K_e is the loss of equity, and K_d is risk of debt.

According to the WACC calculation formula, a company's capital structure, risk of debt, and shareholders' equity all affect the amount of the WACC. Consequently, a crucial factor in determining the company's future market value is its fair debt and equity ratio.

The following variables can further explain why the cost of borrowing will often be cheaper cost compared to the price of equity funding.

First, from the position of creditors, the risks faced by loans to the company are smaller than those faced by shareholders, because the company has to pay the principal and interest when its debts are due, and the interest is generally fixed. However, the entity is not demanded to pay back the shareholders for the cost of shareholders' investment in the company, and the decision to issue a dividend is made in accordance with the company's annual operating results. The company has a good operating situation and may have more dividend opportunities. Once the firm starts to lose money. Investors can incur the risk of missing put on dividend payments; Another aspect is that, in the event of a disaster reorganization, the enterprise will place the repayment of creditors' interest and principal payments ahead of shareholders. Because shareholder's risks are greater than creditor liabilities, shareholder return requirements will also be bigger than creditor return requirements.

Second, whereas rewards do not have any impact from the standpoint of the company, interest payments may be utilized to offset taxes and ease the firm's tax burden.

Using debt financing instead of equity financing can lower WACC and boost the company's future value because bonds are less expensive than equity. Yet, issues will also arise from unchecked debt growth.

The organization's current risk will rise as a result of attempts to boost bond financing. The b coefficient of the firm can rise as a result of the specialising payback requirements of loan financing (the b coefficient is based on the company's overall market risk).

According to the CAPM framework:

$$K_e = R_f + (R_m - R_f) * b \qquad (2)$$

K_e represents a charge for equity, R_f represents the market-wide interest rate for safety, R_m stands for the typical market return, and coefficient b represents the company's risk in light of the market.

The return needed by shareholders will rise as the company's b variable rises along with its overall risk. In light of this, we can determine via interpretation that rising bond financing during such a company's financing process can lessen Earnings per share to a specific extent. However, as financial risk rates, stockholders' expectations for return will also soar. Basic conceptual thinking contains the company's ideal capital structure.

2. M&M's First and Second Theories

The founders of M&M's capital structure theory are Modigliani and Miller, and M&M is also their acronym. Since M&M theory came out, basically all the theoretical research on capital structure is around this. Based on the premise of a perfect capital market, M&M theory proves that under ideal conditions, the value of enterprises has nothing to do with the capital structure they adopt [1].

The research of M&M's First Hypothesis is built on the premise of an effective compensation market:

The company operates in a tax-free environment; Investors have symmetrical information in market investment, that is, they have all information about the market; Investors are rational investors; The investor has no transaction cost in the market transaction with the company; Neglect the bankruptcy risk of the company and assume that the company will continue to operate; Bonds having no risk interest can be issued by both households and corporations; Investors have the same expectations on the potential business gains plus hazards.

Under the premise of being established, M&M First Theory proposes that the capital structure of a corporation has no bearing on its value. No matter how the company's financing method changes, WACC is known to maintain a steady size, and the company's value won't alter [2].

In accordance with the theory, since the firm is assumed to be a perpetual going concern, with no risk interest rate, and the cost of debt financing remains unchanged when the company continuously increases the leverage level, that is, increases debt financing, the return K_d required by creditors remains unchanged. However, due to the increase in leverage, the financial risk rises, because the investors are assumed to be rational equity investors, and the cost of equity will also increase linearly. This is the firm's value which is determined by its cash flow, independent of how it issues securities [3].

$$WACC = \frac{K_e * E + K_d * D}{E + D} \tag{3}$$

With the continuous rise of K_e and D, the former will increase WACC, while the latter will reduce the size of WACC. Modigliani and Miller have calculated that the increased cost of equity is equal to the increased effect of bond financing. Therefore, the WACC value is kept at a fixed level. Because the WACC of the company remains unchanged, the value of the company will also remain unchanged [3].

The M&M second theory modifies the condition of no tax in the first theory and cancels the assumption that the company has no income tax. Therefore, tax is included in the example, and the model is modified in order to establish a more accurate connection between capital layout and company worth. [3].

In the first theory, raising K_e has the same impact as raising debt in order to lower WACC. As per the second idea, because $K_{dat} < K_d$, then the effect of decreasing WACC of debt will be substantially bigger than that of boosting K_e due to the debt ratio. Although while K_{dat} is unchanged from K_d in the previous scenario, as debt continues to climb, rational investors' demand for equity will increase linearly. WACC will therefore decline as debt levels rise.

$$K_{dat} = K_d * (1 - income\ tax\ rate\%) \tag{4}$$

After the tax is considered in the calculation model, the WACC prediction and algorithm have been somewhat modified:

$$WACC = \frac{K_e * E + K_{dat} * D}{E + D} \tag{5}$$

Where, K_{dat} represents the cost of debt after tax.

The future value of the business will also increase due to the continuous decrease of WACC. When the debt ratio of the company reaches 99.99%, the corporation will be at its most valuable. M&M has many practical constraints:

From the perspective of investors and the logic of the market, MM theory believes that investors are factual, so the dividend policy of the corporation is unrelated to its market value. The theory also makes the perfect capital market assumption, and the price and personal investment rate of securities are not subject to manipulation by either the client or the contractor, or the manager can force the repurchase price to increase, and the parties to the transaction have similar goals and conduct [4].

Modern behavioural finance theory believes that not everyone has the ability to totally comprehend and handle all income incentives. A set of logically coherent actions created by various variables is what is referred to as rationality. Attitudes vary from person to person whose information is even identical, which may cause them to react in different ways. None of them should be considered irrational. Inconsistent understanding and judgment will lead to investors' behavior deviating from the MM theory's presumptions. In this case, the capital market is not perfect and efficient [4].

Secondly, the M&M theory believes that the profitability of the firm increases with the level of corporate debt. Enterprise value is at its highest when the organization's debt level is 100%. The cost of firm failure is not taken into account in this estimate, though. And when the company's debt ratio climbs, the company's financial leverage increases and the company's financial risk will also increase. When the company cannot repay its debt, it will go bankrupt [5].

MM theorem holds that there is no optimal capital structure. However, the current mainstream view holds that enterprises not only have the optimal capital structure, but also the speed of adjustment from actual leverage to target leverage is related to the adjustment cost determined by the financial system, internal cash flow and other factors. From static trade-off theory, pecking order theory and timing theory to dynamic balance theory, the latest international research also includes "peer effect", "business cycle" and other influencing factors into the research scope [6].

3.   The Trade-off Theory

Admittedly, the early trade-off theory is completely based on the mutual balance between the pure tax benefits and bankruptcy costs, but the later trade-off theory further expands the cost of liabilities from bankruptcy costs to agency costs, financial distress costs and non-liability tax benefits losses. At the same time, it also extends the tax cover income from the debt tax cover to the non-debt tax cover income, which expands the content of cost and income, and regards the optimal capital structure of enterprises as the balance between the tax cover income and all kinds of costs related to liabilities. Relatively speaking, the trade-off theory seems to have stronger explanatory power in the real world than the MM theory.

The trade-off theory focuses on the effect of debt, which explains why some enterprises give up making full use of the tax credit effect of debt financing. But in reality, there are still many enterprises with low debt levels, whose credibility is good, and they can fully bear higher financial distress costs, but give up using leverage. On this point, the explanatory power of the trade-off theory is still limited [7].

4.   The Pecking Order Theory

The Pecking order theory believes that corporate financing should be carried out in a certain order.

Myers' pecking order theory believes that there is information asymmetry between external investors and internal managers, which affects the valuation of securities by both sides. In order to avoid the decision-making costs (including time costs and issuance costs) caused by external financing friction, managers may prefer internal financing. In external financing, debt is easier to be valued than equity. Compared with companies that issue equity financing, the public has fewer doubts about debt financing companies, so the issuance cost is lower than equity financing [5]. If only financing from within the company can no longer meet the needs of the enterprise, and the enterprise must focus on the external capital market, debt financing, which has the function of signalling and has a positive impact on the stock price of the enterprise, is often the first choice, and it can bring more benefits to the enterprise than equity financing [7]. This forms a financing sequence of internal financing (mainly obtained by retaining free cash flow) - debt financing - equity financing, which can minimize WACC [5].

5.   Financing Choice of Chinese Listed Companies

The above capital structure theories basically believe that capital structure is a dynamic adjustment process, but the basis for adjustment is different. The current situation of China's capital structure is that the proportion of equity financing far exceeds that of debt financing [8]. The phenomenon of preferential financing in China is mainly due to the lag in the reform of the investment and financing

system and the property rights system, the unbalanced development of the capital market, and the phenomenon of "financial lameness"[9]. At the same time, the cost of equity financing in China's capital market is lower than the cost of debt financing, the split share structure of listed companies, the dominance of state-owned shares, and the serious phenomenon of insider control [10]. This is different from other developed countries, which leads to the reverse of the domestic financing order and pecking order theory, so the pecking order theory is not applicable in China [8].

Based on the current situation of China's stock market, the following policy recommendations are put forward. The government should reduce the investment of individual investors in the stock market, increase the proportion of institutional investors, and make more financing funds flow to efficient listed companies [8]. The government should also advocate internal financing, improve the requirements of external financing, and establish a tax and financial system conducive to the internal accumulation of enterprises. The national regulatory authorities can provide technical support and business consulting assistance for listed companies. Financial institutions need to update their traditional business methods, innovate financing products and expand the financing market [11].

6   Conclusion

To sum up, this paper discusses the fundamentals of the first and second theories of MM from the WACC and CAPM models, examines the constraints on their development, and then analyses the trade-off theory and pecking order theory before highlighting the distinctiveness and offering policy recommendations for the financing order of listed companies in China. This study has to incorporate additional empirical research and detailed case studies of listed firms in China. It also needs to do more research on foreign equity financing systems and a multi-level capital market structure. Future research will examine the multi-level financing requirements of businesses and the investment requirements of investors with various risk preferences in conjunction with the realities of the Chinese market.

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