THE IMPACT OF CAPITAL MARKET MISPRICING ON THE FINANCING CHOICE FOR CORPORATE WITH DIFFERENT FINANCIAL CONSTRAINTS

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ABSTRACT

China's capital market has been non-effective for a long time, and the prices of securities have been subject to frequent abnormal changes. Capital markets is an important financing place for the real economy. The mispricing of the capital market will inevitably have an impact on the listed companies' equity and debt financing. This paper takes China's listed companies as the research object, using the annual financial data of listed companies in China A stock market from 2006 to 2015, using discretionary accrued profits and dividend payout as a measure of market mispricing and corporate financial-constraints respectively to explore the impact of the capital market mispricing on the financing choice for companies with different financial-constraints. The results show that mispricing has a significant positive effect on companies' equity financing and debt financing regardless of financial constraints. Specifically, we find that the positive effect of mispricing on equity financing of high financial-constraints companies is lower than that of low financial-constraints companies. However, for debt financing, the result is opposite.

KEYWORDS

Mispricing, capital market, equity financing, stock market, debt financing.

1. INTRODUCTION

As an emerging capital market, there are many deficiencies in China's capital market. The ineffectiveness of the market and the irrational fluctuations in the prices of securities will not be changed in the long run. The volatility of securities prices will significantly affect the size of the company's capital costs and risks, thus affecting the follow-up refinancing and business operations.

There are two prominent characteristics of the financing of listed companies in China. First, listed companies prefer equity financing. Equity financing accounted for the largest share of total corporate finance. As a result, corporate finance is more susceptible to the mispricing of capital markets. Second, the domestic listed companies generally face severe financial constraints. External financing costs are higher. Therefore, the listed companies always make financing decisions after taking both the favorable timing of financing caused by the mispricing in the capital market and the financial constraints into consideration.

Research showed that the rational corporate manager will utilize the favorable market timing for financing to reduce capital costs and enhance corporate value [1]. Empirical studies confirm that IPO issuance of listed companies is always accompanied by an overestimation of share prices, while stock repurchases often appear with the undervaluation of share prices [2,3]. A group of researchers point out that the major shareholders of an enterprise can utilize information asymmetry, carrying out earnings management to enhance the stock value and reduce the financing cost [4]. Others conduct a questionnaire survey of listed company's CFOs and find that managers would choose the timing of financing according to the market performance of the company's stock [5,6]. Domestic research also points out that there are market timing in the financing decisions of listed companies [7-9]. Further, considering the status of government intervention and policy control in domestic capital markets, Some scholars point out that stock issuance of domestic enterprises not only bases on

their own market-timing behavior but also bases on government regulatory policies, the latter being more significant [10,11].

With the linkage between the stock market and the bond market, fluctuations in stock prices often lead to fluctuations in bond prices, thereby affecting the cost of corporate debt financing. Empirical studies confirm that stock prices have a significantly effect on the equity and debt financing of listed companies point out that the overestimation of the stock price will reduce the debt cost [13-14]. Contradicting the above scholars, other scholar point out that the market timing only exists in the equity financing of listed companies and does not exist in the debt financing of listed companies [15].

Capital structure is the result of corporate financing, also affected by the mispricing of securities. Based on a study, there is a long-term negative relationship between market timing and the firm's capital structure [16]. However, other researchers point that the market timing has a very short impact on the capital structure of listed companies [17-19].

Considering financial-constraints, a group of scholars point out that the overestimation of stock prices has a positive effect on the financing of financial-constraint companies and has no significant effect on non-financial-constraint companies [20]. However, other scholar analyzes the stock repurchase of Canadian companies from 1998 to 2007 and find that equity financing behavior is consistent with the market timing theory only when there is no external financial-constraint [21]. The stock market bubble of the 1990s, pointing out that the mispricing has a positive impact on equity financing of companies with financial constraints, but have no significant effect on their debt financing. However, for non-financial-constraints companies, there is no significant effect on their equity and debt financing. Research shows that overvaluation of shares will promote equity financing of enterprises with different financing constraints. however, market mispricing only significantly affects the debt financing of companies with high financing constraints. The second part is the

theoretical analysis and hypothesis; the third part is the empirical analysis; the fourth part is the conclusion.

2. THEORETICAL ANALYSIS AND HYPOTHESIS

2.1 Capital Market Mispricing and Corporate Equity Financing

Fluctuations in share prices create opportunities for companies to utilize the overvaluation of shares to refinance or the undervaluation of shares to repurchase equity. With the ineffectiveness of China's capital market and the high concentration of equity and equity-financing preference of listed companies, controlling shareholders of listed companies often manipulate managers' decisions to utilize the favorable market timing for equity financing to maximize their own interests.

Hypothesis 3.1: The mispricing of capital markets has a positive effect on corporate equity financing.

2.2 Capital Market Mispricing and Corporate Debt Financing

First, due to the "Herding Effect", the high investment sentiment of the stock market investors will drive the investment in the bond market. Second, investors will update the allocation of their existing assets and increase the investment proportion of bonds or other financial products to avoid the risk of the stock market or carry out arbitrage activities when the volatility of the stock price exceeds the expectation of investors, also called "Spillover Effect". As a result, bond demand increases, and corporate debt financing costs decrease. However, due to the lagging development of China's bond market and deficiencies in the corporate bond market, corporate bond return and security cannot meet the needs of investors. The effect of mispricing on the debt financing of China's listed companies may be weakened.

Hypothesis 3.2: The mispricing of capital markets has a positive effect on corporate debt financing.

2.3 Capital Market Mispricing and Equity Financing of Enterprises with Different Financial-Constraints

Corporate financial-constraints have increased the cost of capital, restricted financing scale and prevented external financing of enterprises. So high financial-constraints enterprises are more inclined to utilize the mispricing to obtain low-cost equity financing. However, considering the restriction of equity financing in China capital market, the equity financing of listed companies with high financial-constraints is difficult to carry out. So, the effect of mispricing on the equity financing of companies with different financial-constraints is unclear.

Hypothesis 3.3a: The mispricing of capital markets has a higher positive effect on equity financing of companies with high financial-constraints than companies with low financing constraints.

Hypothesis 3.3b: The mispricing of capital markets has a higher positive effect on equity financing of companies with low financial-constraints than companies with high financing constraints.

2.4 Capital Market Mispricing and Debt Financing of Enterprises with Different Financial- Constraints

The existence of equity financing restrictions makes it impossible for enterprises to fully utilize market timing. Considering that overestimation of the stock price will reduce of the debt cost, the enterprise with high

financial-constraints will increase its debt financing in order to avoid equity financing restrictions. However, for enterprises with low financial constraints, the debt financing is less affected.

Hypothesis 3.4: The mispricing of capital markets has a higher positive effect on debt financing of firms with high financial-constraints than firms with low financial-constraints.

3. EMPIRICAL RESEARCH

3.1 Sample Composition and Variable Definition

We use the annual data of A-share listed companies from 2006 to 2015, excluding financial and insurance companies. The continuous variable data is winsorized at the level of 1% to avoid the influence of extreme values. All data come from the CSMAR database.

(1) Capital Market Mispricing

We use discretionary accruals (DACCR) as a measure of mispricing. When the enterprise is overvalued, the value of DACCR will be higher; when the enterprise is undervalued, the value of DACCR will be lower. DACCR is calculated as follows:

First, calculate accruals (ACCR): $ACCR = \text{Net profit} - \text{Net cash flow from operating activities of the company}$.

Second, regression of the accrued profits of Company j of the year t is as follows:

$$\frac{ACCR_{j,t}}{A_{j,t-1}} = \beta_0 \frac{1}{A_{j,t-1}} + \beta_1 \frac{\Delta SALES_{j,t}}{A_{j,t-1}} + \beta_2 \frac{PPE_{j,t}}{A_{j,t-1}} + \varepsilon_{j,t} \quad (1)$$

Where, $A_{j,t}$ is the total assets of enterprise j in year t, $\Delta SALES_{j,t}$ is the increase of sales revenue of enterprise j in year t, $PPE_{j,t}$ is the net value of fixed assets of enterprise j at the end of year t.

Third, using regression coefficients β_0 , β_1 , β_2 , calculate NDACCR and DACCR by sector for each year:

$$NDACCR_{i,t} = \beta_0 \wedge \frac{1}{A_{i,t-1}} + \beta_1 \wedge \frac{\Delta SALES_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} + \beta_2 \wedge \frac{PPE_{i,t}}{A_{i,t-1}} \quad (2)$$

$$DACCR_{i,t} = \frac{ACCR_{i,t}}{A_{i,t-1}} - NDACCR_{i,t} \quad (3)$$

(2) Financial-constraints

Early researches use dividend payout as a measure of financial-constraints. High financial-constraints choose to pay a low dividend in order to obtain the maximum amount of low-cost internal funds, while low financial-constraints will pay a high dividend. Many scholars have used the dividend payout scale to measure corporate financial constraints. We use the dividend payout as the proxy index of financial constraints. The enterprises with dividend < 0.05 yuan are classified as high financial-constraints, and the enterprises with dividend ≥ 0.05 yuan are classified as low financial-constraints.

(3) Other Variable Definitions

Table 1: Variable Definitions

Variable symbol (name)	Calculation method
Equity-increase (Equity growth rate)	{(Current total owners' equity - Current surplus reserve - Current undistributed profits) - (Total owners' equity at the previous period - Surplus reserves at the previous period - Undistributed profits at the previous period)} / Total assets at the end of the period; Representing external equity financing
Debt-increase (Total debt growth rate)	[(Current total liabilities - Total liabilities at the previous period) / Total assets at the previous period], representing total debt financing
DACCR (Stock wrong pricing)	Discretionary accruals, see above
Q (Tobin's Q)	(Equity market capitalization - Net debt market capitalization) / Total assets
Lev (Asset-liability ratio)	Total liabilities / Total assets
CF (cash flow)	Net operating cash flow / Total assets at the beginning of the period

Cash (Monetary funds)	The monetary funds held at end of the period / The total assets at beginning of the period
Size (Company Size)	The Natural logarithm of the current total assets (billion)
Industry (Industry dummy variables)	Control the industry effect
Year (Year dummy variable)	Control the year effect

3.2 Model Design

We use panel regression, taking DACCR as explanatory variable, taking Tobin's Q, enterprise cash flow, debt-to-asset ratio, firm size and monetary capital as control variables, to explore the effect of the mispricing on the choice of financing for enterprises with different financial-constraints.

Aiming at the effect of mispricing on corporate equity and debt financing, a linear regression model is established as follows:

$$Equit - increase_{i,t} = \alpha_1 DACCR_{i,t} + \alpha_2 Q_{i,t-1} + \alpha_3 Levi_{i,t-1} + \alpha_4 CFI_{i,t-1} + \alpha_5 Cash_{i,t-1} + \alpha_6 Size_{i,t-1} + \sum_j Industry_j + \sum_i Year_i + \varepsilon_{i,t} \quad (4)$$

$$Debt - increase_{i,t} = \alpha_1 DACCR_{i,t} + \alpha_2 Q_{i,t-1} + \alpha_3 Levi_{i,t-1} + \alpha_4 CFI_{i,t-1} + \alpha_5 Cash_{i,t-1} + \alpha_6 Size_{i,t-1} + \sum_j Industry_j + \sum_i Year_i + \varepsilon_{i,t} \quad (5)$$

Considering different levels of financial-constraints, the research objects are divided into two categories according to the level of dividend payment—high financial-constraints and low financial-constraints. Then regression is carried out using model (4) and (5).

3.3 Regression Results

(1) The Regression of the Equity and Debt Financing on the Mispricing Respectively

Table 2: The Regression Results of the Equity and Debt Financing on the Mispricing Respectively

Variable	1 Equity-incre	2 Equity-incre	3 Equity-incre	4 Debt-incre	5 Debt-incre	6 Debt-incre
DACCR _{i,t}	0.0778*** (4.249)	0.0836*** (4.170)	0.0964*** (5.060)	0.0837*** (4.247)	0.0796*** (4.037)	0.0631*** (6.161)
Q _{i,t-1}		0.0142*** (8.635)	0.0138*** (7.134)		-0.0104*** (-5.496)	0.0044*** (4.193)
Levi _{i,t-1}		0.0282*** (3.449)	0.0194** (2.091)		-0.0228*** (-2.181)	0.0011 (0.180)
CF _{i,t-1}			0.0482** (1.991)			0.0025 (0.166)
Cash _{i,t-1}			-0.0524 *** (-3.442)			-0.0295*** (-3.411)
Size _{i,t-1}			-0.0046** (-2.455)			0.0113*** (9.967)
Constant	0.0633*** (37.064)	0.0267*** (4.820)	0.0464*** (4.774)	0.0998*** (40.308)	0.1327 *** (18.706)	0.0117** (2.101)

Notes. *P<0.10, **P<0.05, ***P<0.01, where P is the marginal probability level; t-statistics in parentheses; t-1 indicates lagging for one year. The below table is same.

From table 2, the first three columns show that the regression coefficient of DACCR is significantly positive, regardless of the control variables. Mispricing has a significant positive impact on the equity financing of

enterprises. The last three columns show that mispricing also has a significantly positive effect on the debt financing of enterprises. Hypothesis 3.1 and Hypothesis 3.2 are established.

(2) The Regression of Equity Financing with Different Financial-constraints Enterprises on Mispricing

Table 3: The Regression Results of Equity Financing with Different Financial-constraints Enterprises on Mispricing

Variable	Financial-constraints Level					
	Low level of financial-constraints (Dividend payout ≥ 0.05)			High level of financial-constraints (Dividend payout < 0.05)		
DACCR _{i,t}	0.0780*** (3.463)	0.0933*** (4.1497)	0.1278 *** (5.347)	0.0610*** (3.140)	0.0727 *** (3.170)	0.0729*** (3.322)
Q _{i,t-1}		-0.0220*** (-6.449)	-0.0146*** (-4.015)		-0.0377*** (-8.815)	-0.0053** (-2.021)
Levi _{i,t-1}		0.0698*** (3.785)	0.0668*** (3.405)		0.0271* (1.734)	0.0184* (1.598)
CF _{i,t-1}			0.0345 (1.034)			0.0696** (1.989)
Cash _{i,t-1}			-0.1290*** (-5.629)			-0.0217 (-0.951)
Size _{i,t-1}			0.0192*** (6.169)			0.0134*** (5.194)
Constant	0.0685*** (6.792)	0.0867*** (8.241)	0.0720*** (5.986)			0.0383*** (2.951)
R-squared	0.1161	0.1257	0.1480	0.1049	0.1331	0.1606

The data in Table III show that the regression coefficients of the mispricing are all significantly positive, further verifying hypothesis 3.1. The positive influence of mispricing on the high financial-constraints enterprises is lower than that of low financial-constraints enterprises. Hypothesis 3.3b

is established.

(3) The Regression of the Debt Financing with Different Financial-constraints Enterprises on mispricing

Table 4: The Regression Results of Debt Financing with Different Financing Constraints Enterprises on the Mispricing

Variable	Financing Constraints Level					
	Low level of financing constraints (Dividend payout ratio $\geq$ 0.05)			High level of financing constraints (Dividend payout ratio $<$ 0.05)		
DACCR _{it}	0.0894*** (2.790)	0.0632*** (3.176)	0.0926*** (4.975)	0.0912*** (5.924)	0.1096*** (3.852)	0.1128*** (3.962)
Q _{it-1}		0.0165*** (5.745)	0.0149*** (4.635)		-0.0290*** (-5.515)	-0.0240*** (-4.3903)
Lev _{it-1}		0.0415** (2.5130)	0.0316* (1.746)		-0.1912*** (-9.877)	-0.1961*** (-10.093)
CF _{it-1}			-0.1212*** (-2.964)			0.0867* (1.828)
Cash _{it-1}			-0.1269*** (-5.092)			-0.0814** (-2.480)
Size _{it-1}			-0.0036 (-1.167)			0.0094*** (2.650)
Constant	0.1100*** (32.522)	0.0366*** (3.144)	0.0856*** (5.105)	0.0886*** (10.374)	0.0508*** (4.366)	0.0436*** (2.774)
R-squared	0.1054	0.1119	0.1259	0.1090	0.1642	0.1665

Table 4 shows that the regression coefficients of the mispricing are all significantly positive, further verifying hypothesis 3.2. The positive effect of mispricing on high financial-constraints enterprises debt financing is stronger than that of low financial-constraints enterprises. Hypothesis 3.4 is established.

4. CONCLUSION

First, the mispricing has a significant positive impact on the equity and debt financing of enterprises. There is a clear market-timing behavior in the financing decision of listed companies. Second, with the introduction of financial constraints, the empirical results show that the positive impact of the mispricing on the equity financing of firms with high financing constraints is lower than that of the firms with low financing constraints. For the debt financing of enterprises, the regression result is just the opposite. In addition, we argue that Chinese listed companies face many financing constraints from external capital markets to internal financial status of enterprises, and the ability of enterprises to use the mispricing for financing is largely constrained. Therefore, enterprises with high financial constraints will choose to engage in debt financing and pass the positive signals of business operation to the market, resulting in that the mispricing has a stronger positive effect on debt financing of enterprises with higher financial-constraints than those with low financial-constraints.

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