A Study on Social Responsibility Financing Decisions Based on Market Timing

Maohua Li[1,2], Ping Zhong[1,2], Jiannan Zhang[1]

[1]Institute for Corporate Social Responsibility, Xi'an Siyuan University, Xi'an 710038, China

[2]School of Business, Xi'an Siyuan University, Xi'an 710038, China

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Abstract: The traditional financing theory assumes that the market is perfect, and the rational people try pursuing the maximal profit. But in fact, people will be influenced by all kinds of irrational factors. Therefore, this paper, from the perspective of the management irrationality, tries to find how a company makes a social responsibility financing decision, and how it uses market timing. This paper draws the following conclusions: 1. market timing exists in social responsibility financing. If the stock value is underestimated, the company will generally choose social responsibility financing, and if the stock value is overvalued, the company will choose other financing channels. If the market interest rate is relatively higher, the company will generally don't select social responsibility financing. If the market interest rate is relatively lower, social responsibility financing will be chosen by a company frequently. 2. The manager, with more concern to risk aversion, will not select social responsibility financing.

1. Introduction

In recent years, with the development of social responsibility financing, market financing tools related are also more and more. In particular, there are more and more social responsibility financing, but there is a severe imbalance between the enterprises. For the adjustment of China's overall market financing structure, one way is to reduce the financial risk of social responsibility financing [1]. Many scholars focus on the relationship between social responsibility financing decision-making and corporate performance, which is also the impact of social responsibility financing on corporate risk management [2]. So, this paper, based on the perspective of market opportunity, is to study corporate social responsibility financing decision-making. And this paper wants to examine how the enterprise makes the correct social responsibility financing decisions based on the market opportunity [3].

Traditional corporate finance theory is based on the perfect market assumption that the human is perfectly rational and is pursuing profit maximization [4]. However, in real life, people have been subjected to a lot of emotional factors. Finally, they can only make a limited rational decision, so when we are thinking about the problem, we should take these psychological factors into account before we can find a genuinely reasonable decision plan [5].

Modern behavioral finance theory believes that many factors affect corporate financing structure, and the market opportunity is one of the significant factors. Enterprises in the equity financing will use the market opportunity naturally. But how will the enterprise use the market opportunity to carry on social responsibility financing? At present, there are few scholars to study, but from the current research, we can see that the enterprise in social responsibility financing can use the market opportunity. And there will be an excellent market opportunity to issue bonds and reduce the cost of capital this paper will make a difference in this regard [6]. The traditional market timing theory is based on the assumption of complete ration, while this paper is mainly from the emotional factor of enterprise management [7]. The goal is that when the enterprise is making social responsibility financing decisions on how to catch the market opportunity and to use the market opportunity. In that case, we can not only solve the problem of Chinese enterprises in social responsibility financing but also help Chinese enterprises to choose a more effective financing way [8].

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2. Research Design

After the extensive literature review and reading, we combine the relevant research results of our predecessors and then construct the research model and then use the relevant data of the Chinese listing Corporation [9].

2.1 Sample Selection

To guarantee the reliability of the research results, this paper selects almost all of the listed companies in Shenzhen and Shanghai stock exchanges from 2007-2014 as the object of our study. The annual financial report that presents a company's financial position is the first-hand data for the research of the company. Because the related data from the SHIBOR is released from 2007 so we choose the company starting from 2007. To guarantee the correctness and fairness of the results [10], we want companies excluding the ST Company and the company with financial products as well as the company that the disclosure of the financial report is not very complete.

The primary data of the listing corporation is from the Shanghai Stock Exchange (www.sse.com.cn) and the Shenzhen Stock Exchange (www.szse.cn). In this paper, we use the numerical value of the financial data from December 31st. To guarantee the reliability of the results of the study, we use 530 listing Corporations as the research sample. In the process of data processing, we use the Eviews6.0, which is the most sophisticated data processing software.

2.2 Hypotheses

Just like the equity financing, the social responsibility financing of enterprise also considers the possibility of market timing. Based on this, our paper first proposes the assumption that there should be a choice of market timing when the enterprise is in social responsibility financing [11]. Early in 2010, Yupei Rao, in his book 'behavioral finance,' talks about the existence of market timing when the enterprise is social responsibility financing, and he believes that enterprises can choose a more appropriate market opportunity for the issuance of bonds which can reduce the cost of funding. If the market interest rate is higher, the business operators will tend to use equity financing to reduce the cost of capital. If the market interest rate is low, the enterprise will use social responsibility financing to adjust the cost of capital. In particular large companies will be more cautious in the use of market opportunities. They tend to choose a time they select financing.

In this paper, we first assume that various market emotional factors will interfere with the behavior of enterprise managers' financing decision-making [12]. Li Hongmei also refers to the influence of the psychological factors in her related articles, and she made a detailed analysis of the corporate social responsibility financing and financing structure based on these emotional factors. Therefore, the first hypothesis is based on the psychological elements of corporate management. This paper believes that the emotional aspects of the corporate managers will affect their corporate social responsibility financing decision-making, and this effect is mainly achieved through the market opportunity in the financing of enterprises. From the current behavioral finance theory, we can see that there are a lot of emotional factors in the capital market, and this paper selects one of the most sensitive factors that are the risk aversion of the manager. Based on these this paper makes second hypotheses that the higher the risk aversion of the enterprise managers the smaller the use of the market opportunity of enterprise social responsibility financing.;In The behavioral finance theory, the risk aversion of enterprise managers in the social responsibility financing decision-making is variable [13]. When the company has a higher profit, the risk aversion of the enterprise managers will be increased; on the contrary, when the enterprise has a loss, the risk aversion of the enterprise managers will be reduced [14].

Above all, this paper draws the following two primary research hypotheses:

H0: Market opportunity exists in social responsibility financing.

H1: The higher the risk aversion of managers, the lower the probability and accuracy of the market timing.

2.3 Regression Model and Definition of the Variables

2.3.1 Regression Model and Definition of the Variables of Hypotheses 0

According to the traditional theory of market timing, a series of emotional factors exist in the capital market, and managers will decide according to the psychological factors which have effects on the stock pricing [15]. They will repurchase shares of their own company in the market if the stock price is underestimated. Based on this, combined with the previous research results, this paper establishes the multiple regression equation:

$$D / A = \alpha + \alpha_1 (M / B)_{efwa} + \alpha_2 (M / B) + \alpha_3 (PPE / A) + \alpha_4 (EBIT / A) + a_5 \log S + u \quad (1)$$

In this paper, we first develop a multiple regression equation (see the above formula) and then optimize the multiple regression model. An important indicator that can reflect the market timing is the market value - per value. The purpose of this paper is to study the problem of the market opportunity of corporate social responsibility financing. In fact, for enterprise social responsibility financing, the market opportunity is the final social responsibility financing point that the company can capture the market, and the enterprise can optimize the cost and capital structure. Of course, for corporate social responsibility financing, the market interest rate is an important issue that cannot be ignored. When corporate managers believe that market interest rates are falling, they will choose to use social responsibility financing, which can optimize the cost of capital and capital structure of the enterprise. This paper plus interest rate based on the traditional study. SHIBOR (Shanghai Interbank Offered Rate). Besides, we have used a series of capital structure decision variables such as non-debt tax avoidance (NTDS) total debt ratio (TD) market total debt ratio (MTD) cash flow (CF) current debt ratio (SD) and current liabilities rate (market value) (MSD).

2.3.2 Regression Model and Definition of the Variable of Hypotheses 1

In the face of the risk, a more conventional way of business managers is to avoid danger. Managers will use a planned behavior to reduce the risk or reduce the probability of occurrence of the chance to protect the enterprise from the risk. Risk aversion is not to altogether dispense with the risk, and the real intention of the risk aversion is to reduce the adverse consequences of the risk to the enterprise. There are mainly two ways: A. to take positive feed-forward control to reduce the occurrence probability of risk; B. to make a series of in-process and after forwarding command to minimize the adverse consequences of risk. In terms of social responsibility financing, we can fully understand risk aversion like this: when enterprise managers think the company's profitability is relatively high they often have the relatively high-risk aversion; on the contrary if enterprise managers believe that enterprises are lack of insufficient profitability and they will gamble so they will have relatively low-risk aversion. This has been confirmed in the traditional behavioral finance.20101: However, we use the risk measurement method, which is put forward by Li Hongmei in the relevant research in 2010. Based on model 1, we study the second models:

$$DE = \alpha + \alpha_1 (M / B) + \alpha_2 R_m + \alpha_3 TD + \alpha_4 CF + a_5 SD + \alpha_6 NTDS + \alpha_7 (PPE / A) + \alpha_8 (EBIT / A) + \alpha_9 \log S + \alpha_{10} RAI + u \quad (2)$$

In this paper, DE is chosen as the explanatory variable because DE expresses the ratio of owner's equity and corporate debt. This ratio represents the size of a corporate financing approach if the proportion is relatively large; the enterprise is mainly through social responsibility financing. In contrast, if the rate is low, the company mostly through equity financing. It also expresses the size of the financial risk that a business enterprise faces. If the ratio is relatively large, it shows that the enterprise is faced with a relatively large financial risk, and if the rate is low, the financial risk is relatively small.

3. Empirical Analyses

To verify and analyze the two models in front, we use the Eviews7.0 to make the Multi-factor line regression method to analyze the data collected. To explore the relationship between multiple variables, a technique called multiple regression analysis, which is also called the regression

analysis method, is a method for the study of numerous variables. According to the different classification basis, it can be divided into many specific ways, generally according to the relationship between the independent variable and the dependent variable.

To carry out multiple regression analysis, we first collected the data into the Excel table and then imported the data into E-views from the Excel form data. Finally, the E-views multiple regression analysis is used to analyze the two models. To do the regression analyses, first of all, the paper does a White test to determine whether heteroscedasticity exists between two models. Specific results are shown in the table below.

Table 1 The Result of White Test in Model 1

White test of model 1			
F	2.847463	probability	0.000
NR2 of white 147.8856	probability	0.000	
Scaled explained SS	834811.7	probability	0.001

Table 2 The Result of White Test in Model 2

White test of model 2			
F	2.841277	probability	0.000
NR2 of white	179.4221	probability	0.000
Scaled explained SS	976435.5	probability	0.000

From the above Table 1 and Table, two can be learned that the F test statistic of the overall significance of the two-hypothesis model is 2.847463 and 2.841277. The white test statistic NR2 is 147.8856 and 179.4221. They all have a significant level of 0.000.

They are 0.000 of the probability is 0.05, which means that the original hypothesis and the model equation have heteroscedasticity.

Therefore, this paper is to optimize the original model 1 and model 2 and selects the weighted least squares optimization. After the use of the least-squares method to optimize the unique model, this paper does multiple regression analysis.

3.1 The Result of Descriptive Statistical Analysis

From table 3, we can see the results of descriptive statistics. It is easy to show that we choose 540 listed companies from Shanghai and Shenzhen Stock Market. The mean of their equity ratio is 1.795327, and the way of their market value to book value ratio is 0.559937. The mean rate of their return on total assets is 1.712735, and the direction of their asset-liability ratio is 0.392537.

Table 3 Descriptive Statistics

	DE	CF	EBIT/A	E	M/B
mean	1.795327	0.035125	1.712735	9.211321	0.559937
maximum	1897.125	97.52355	1711.375	12.37255	295.1298
median	0.937755	0.008777	0.071222	9.315521	0.222875
minimum	3.111237	-32.1235	-5.32155	5.257875	0.007875
standard deviation	18.12551	1.200155	23.57231	0.712377	5.795512
deviation	98.35257	25.25751	55.77133	-0.07587	33.91237
peak value	11321.23	5531.355	3381.155	5.502135	1379.255
	DA	PPE/A	SD	MI	TD
mean	0.071322	0.313215	0.392115	2.732578	0.392537
maximum	57.09321	1.153721	0.883325	7.593721	0.888375
median	0.008955	0.152237	0.377325	2.528712	0.398887
minimum	1.385521	0.000001	3.212121	0.897557	3.252527
standard deviation	0.952255	0.207551	0.215572	1.532157	0.201572
deviation	58.37551	1.215537	0.237557	1.235598	-0.21357
peak value	2632.242	3.654714	2.612538	3.553645	2.501235

3.2 The Analysis Result of Weighted Least Square Method

To carry out, mathematical optimization scholars have produced the least-squares method. By

minimizing the sum of squared errors, the equation is found to reach a maximum of a given set of data. This method can be used to obtain the model with the most convenient way from the numerical simulation, and it can be used to guarantee the fitting degree of the data. The least-square method is often used in mathematical curve fitting with differential, and many practical problems can be solved by using the least square method. From the most straightforward linear equation, the orbit of the planet can be explained by the least square method. Einstein first invented the least-squares way which is used to solve the problem of the planet's orbit, so the least square method is called the least square principle regression line method, etc. Weighted least square method is to weight the original model, which makes it become a new model and then uses the ordinary least square method to estimate its parameters.

A weighted least-squares regression analysis analyzes the modified model 1, and the results are shown in Table 4.

As can be seen the market value ratio (M/B) market interest rate (SHIBOR) non debt tax avoidance (NTDS) asset profitability index cash flow (CF) and the ratio of debt to equity ratio of the company is negatively related to current liabilities ratio (SD) the total negative debt ratio (TD) and the ratio of debt to equity ratio is positive correlation. The higher the value of the T value is, the more significant the result is. The results show that in addition to no debt tax avoidance is not substantial the other variables (especially the M/B and two variables) are significant at the 1% level can be adjusted after the R-value is very satisfactory the accuracy of the model is proved to be true assuming 1 is established bond financing is indeed a market opportunity and the market value and market value ratio and negative correlation.

Table 4 the Result of Least Square Method

Explained Variable: DE			
Explaining Variable	Estimated Value of Defining variable	Standard Deviation of Setting variable	T
C	9.125677	0.012357	711.0632***
CF	-0.020312	0.002103	-7.936777***
EBIT/A	-0.004123	0.000314	-15.35145***
LGS	-1.402571	0.002929	-1231.741***
M/B	-0.003524	0.005454	-9.126477***
NTDS	-0.007564	0.096771	-0.902102
PPE/A	0.901254	0.002041	501.2365***
SD	2.301452	0.002934	740.6565***
RM	-0.023679	0.000301	-105.3541***
TD	9.014523	0.004001	2412.333***
R2	0.777123		
F	1721367	D-W	2.113254

PS: ***, **, *: 1%, 5%, 10%

When the price to book value ratio is greater, the value of the stock is overvalued, and thus enterprise will not choose the social responsibility financing. And when the price to book value ratio is lower, convert bonds will become very attractive to managers. When the market interest rate is low, companies tend to choose social responsibility financing to reduce financing costs.

4. Conclusion

With the improvement of China's capital market, corporate social responsibility financing in our country also appears to flourish. Still, compared with the market boom, the relevant theoretical research is very inadequate. With the diversification of corporate social responsibility financing and social responsibility financing instruments, the scale of corporate debt has been greatly expanded. However, because of the lag of relevant theoretical research, there is still a big gap in this field. In recent years China's enterprises are more willing and more flexible and easier to use social responsibility financing in the enterprise capital structure of the status is also growing the dominant trend. However, because China's social responsibility financing is not perfect, there are still many problems to be solved. At this time if the excessive emphasis on the size of social responsibility

financing may lead to the imbalance of corporate capital structure. The main conclusions of this paper are as follows:

(1) On the existence of market timing. Our research suggests that market timing exists when Chinese companies carry out social responsibility financing. When corporate managers believe their company's share price is overvalued, companies tend to equity financing in contrast, and corporate managers will be more inclined to carry out social responsibility financing. When business managers feel that the market interest rate is relatively low, they will tend to use the way of social responsibility financing in contrast; corporate managers will tend to equity financing.

(2) Some financial indicators and corporate financing ability have a very high correlation. Some of these financial indicators and corporate social responsibility financing capacity have a lot of negative correlation, such as NTDS. While others and corporate social responsibility financing capacity has a great positive correlation such as SD.

(3) The impact of emotional factors on the market. The traditional corporate financing theory thinks that the management of the enterprise is full of rational. Still, when the manager carries out financing, a series of emotional factors in the market will have a lot of interference on the financing behavior of the manager. Of course, because space is limited, we only pick out a perceptual factor-market timing hypothesis. The manager is rational, but in the actual process of corporate financing, decision-making management will be subject to a variety of non-rational factors (such as overconfidence risk aversion herds mentality, etc. so that the company's social responsibility financing decisions will be impacted. This paper only selects one kind of non-rational factor, which is the risk aversion. When business managers are with a relatively high-risk aversion state, they will tend to equity financing, and they will not take the initiative to use the market timing.

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