Analysis on Motivation and Effect of Convertible Bond Financing of Taijing Technology
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Abstract
As the supervision and rules of the convertible bond market continue to be standardized and improved, the financing product of convertible bonds is increasingly favored by enterprises and investors. The frequent occurrence of bond defaults in 2020 has promoted the strengthening of the partial equity type of convertible bonds, and the trend has shown obvious polarization characteristics, with a large structural valuation gap. This article takes Taijing Technology's convertible bond financing decision as the research object. First, from the perspective of convertible bond financing costs and benefits, it explores the funding needs and market selection motives of Taijing Technology's financing, and measures the issuance potential through the cumulative excess return rate. Whether the convertible bonds meet the company's expectations. Then, the comparative method is used to analyze the changes in financial indicators before and after the issuance of convertible bonds, assuming the impact of non-conversion and actual conversion on shareholders' equity. Finally, analyze the above results to get the comprehensive impact of Taijing Convertible Bonds on the company, investigate the problems existing in the development of its convertible bond market, and provide some constructive opinions.

Keywords
Taijing Technology; Convertible Bond; Financing Motivation; Financing Effect.

1. Introduction
Convertible bond financing is one of the important channels for companies to carry out external financing. Scholars at home and abroad hold different views on the research in this field. Regarding the research on financing effects, foreign scholars generally believe that convertible debt financing brings about a decline in operating performance. Lewis (2001) [5], Hansen and Crutchley (1990) [6] and others hold this view. Research by Espen (2000) et al. found that compared with equity financing, the expected return rate and stock price drop response of convertible bond financing was relatively minor [7]. Yoon P. (2020) uses 1421 convertible bonds announced from 2015 to 2019 as a sample. The research result is a significant positive announcement effect, with a cumulative abnormal return rate of 4.66% in 3 days [8]. Hemmingson C. and Ydenius R. (2017) believe that leverage has a positive effect on abnormal returns, while relative issuance scale has a negative effect on abnormal returns [9]. Regarding the research on financing effects, domestic scholars generally believe that long-term convertible bond financing presents a positive wealth effect, making better use of financial leverage to optimize corporate capital structure and equity structure. Li Bingxiang and Li Juan (2013) found through empirical research that listed companies and controlling shareholders use convertible bond financing as a self-interested means to obtain control, and they may not necessarily take advantage of optimizing capital structure and corporate governance [13]. Mu Wen (2019) found that the issuance of convertible bonds brings a short-term negative announcement effect based on the research on the financing effects of Goertek convertible bonds [14]. Hu Minjie et al. (2018) believe that the analysis of traditional financial indicators is
not comprehensive, so when using the event research method to add the influence factor of investor sentiment, they found that the negative announcement effect does not exist, and the conclusion on the announcement effect brought by the issuance of convertible bonds differs from the views of other scholars. Further research is needed [15]. Huang Shujuan (2019) mentioned the risk and avoidance of control competition and the use of convertible bond financing, the holders maliciously manipulate the stock price, and the company’s equity is easily diluted by the convertible bond holders, thus prompting the transfer of company control [16].

2. Taijing Technology Convertible Bond Financing Case Introduction

2.1. Taijing Technology Overview

Hubei Taijing Electronic Technology Co., Ltd. ("Taijing Technology" for short) was established in 2005 with a registered capital of 177.3 million yuan. It is mainly engaged in the design, production, sales of quartz crystal resonators and the research and development and manufacturing of related process equipment. The company’s main business income is income from M series, TF series and S series products, and other business income is mainly from crystal resonator trading and crystal resonator raw material sales. Taijing Technology Co., Ltd. has been committed to coordinating the expansion of downstream applications, focusing on self-service intellectual property research and development, new equipment research and development and process improvement. It has reached good consultation and cooperation with Taiwan’s well-known crystal company Sihua Enterprise, and has developed into a leading domestic crystal resonator enterprises.

2.2. Whole process of convertible bond issuance

On December 15, 2017, the “2017 Hubei Taijing Electronic Technology Co., Ltd. Convertible Corporate Bonds”, referred to as “Taijing Convertible Bonds” (bond code: 113503), was issued on December 15, 2017. Suizhou City Investment Group Co., Ltd. provided guarantee and Suizhou Taihua Electronic Technology Co., Ltd., a subsidiary of Jing Technology, provided counter-guarantee, and Tai Jing convertible bonds were issued smoothly.

2.3. The company's investment projects and fund-raising operations

The construction period of the investment project is 2017. As of the end of 2019, the total investment capital of the project was 197,547,700 yuan, and the cumulative benefit was 19.8282 million yuan, which was 36.12% of the promised total benefit of 54.891 million yuan. The actual benefit was mainly due to the lower than expected market orders. Based on market factors and capacity utilization rate, the capacity has not been fully released, and the economic benefits brought by the investment of fund-raising projects have been slow. The main investment projects are shown in Table 1.

<table>
<thead>
<tr>
<th>Investment project</th>
<th>Capacity utilization</th>
<th>Whether to achieve the expected benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion project of TKD-M series miniature chip high frequency crystal resonator production line (Phase II)</td>
<td>73.13%</td>
<td>No</td>
</tr>
<tr>
<td>Industrialization Project of TKD-M Series Temperature Compensated Mini Chip High Frequency Crystal Resonator</td>
<td>71.13%</td>
<td>No</td>
</tr>
</tbody>
</table>
3. Analysis on Motivation of Convertible Bond Financing of Taijing Technology

3.1. Motivation for funding needs

3.1.1. Financial difficulties faced by enterprises

On the one hand, the country's macroeconomic situation has increased uncertainties, domestically produced alternative electronic components market competition is fierce, and low-price competition in the same industry has led to a continuous decline in the unit price of the quartz crystal component industry and reduced profit margins. On the other hand, in order to cater to market demand and achieve industrial scale effects, the company is mainly faced with the difficulty of large accounts receivable and a high proportion of main operating income. The company publicly issued shares in 2016 to raise funds. Although it eased a certain amount of funding pressure, the fund-raising projects still require a large amount of capital support. In addition, the company's financial costs are greatly affected by foreign currency exchange risks. If the investment project fails to achieve the expected economic benefits, the one-time repayment of the principal and interest of ordinary bonds at maturity will cause the company to fall into more serious financial difficulties.

Table 2. Accounts receivable and main business income

<table>
<thead>
<tr>
<th>Years</th>
<th>Accounts receivable</th>
<th>Main business income</th>
<th>Accounts receivable accounted for main business income ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>12936.23</td>
<td>22614.03</td>
<td>57.20%</td>
</tr>
<tr>
<td>2015</td>
<td>16873.81</td>
<td>29057.64</td>
<td>58.07%</td>
</tr>
<tr>
<td>2016</td>
<td>18304.33</td>
<td>33216.05</td>
<td>55.11%</td>
</tr>
<tr>
<td>January-June 2017</td>
<td>19515.47</td>
<td>17681.22</td>
<td>110.37%</td>
</tr>
</tbody>
</table>

3.1.2. Give full play to the positive effect of financial leverage

It can be seen from Table 3 that the debt protection ratio of the company in the year before the issuance of convertible bonds reached 97.55%, indicating that the company's long-term debt and cash repayment ability is strong, and the company can choose debt financing to increase its leverage to obtain more investment income. After the issuance of Taijing Convertible Bonds in 2017, the company's EBIT margin on total assets was much higher than the debt interest rate, indicating that debt financing leverage can bring positive positive effects. The interest expense paid by the company can be used to offset the pre-tax profit, and the pre-interest and tax profit created by the issuance of convertible bonds will exceed the fixed interest expense payable, bringing more surplus to the company's shareholders.

Table 3. Related financial leverage indicators

<table>
<thead>
<tr>
<th>Years</th>
<th>Earnings before interest and taxes on total assets</th>
<th>Debt interest rate</th>
<th>Debt protection ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>14.17%</td>
<td>1.84%</td>
<td>37.75%</td>
</tr>
<tr>
<td>2016</td>
<td>23.68%</td>
<td>3.97%</td>
<td>97.55%</td>
</tr>
<tr>
<td>2017</td>
<td>30.77%</td>
<td>0.43%</td>
<td>23.61%</td>
</tr>
</tbody>
</table>

3.2. Market timing motivation

3.2.1. Share price operation before issuance

It can be seen from Figure 3 that the company's stock price was clearly at a high valuation in the early stage, and the secondary market was in a downturn. The electronic component industry was in a downturn, resulting in a phased decline in the stock price. The market sent a
signal of undervalued stock prices. According to the analysis of the psychological activities of small investors in the process of converting convertible bonds into shares of the disposal effect, investment in convertible bonds is mainly the company's original shareholders and institutional investors. When the stock price drops, investors expect the stock price to fall due to the psychological state of risk preference. There will be an increase in the future, so it can enhance investors' willingness to hold convertible bonds.

The issue price of Taijing Technology's shares listed on the Shanghai Stock Exchange on September 28, 2016 was 16.14 yuan. Under the threat of a trend that may fall below the issue price, the company's shareholders are more willing to choose Convertible debt financing. In addition, the company has the advantage of independent investment and research, and its downstream product applications are rich in consumer electronics, automobiles, 5G new themes, etc. Driven by favorable policies, the opportunities in the domestic crystal oscillator industry will help promote the rise of stock prices and increase investors' holdings Confidence in company stocks.

![Figure 1. Changes in the stock price trend before the issuance of Taijing Convertible Bonds](image)

### 3.2.2. Finding low-cost and balanced equity financing

From the analysis of the stock price operation during the issuance process, 20 trading days after the company issued the prospectus, the company's stock price plummeted from sideways shocks to determine a lower conversion price, which is conducive to encouraging some investors to realize the conversion, thereby reducing the company's repayment the cost of interest. From the perspective of terms design, when the secondary market stock price continues to be higher than the conversion price, when the market volume is active, there is a large room for arbitrage. The setting of redemption clauses encourages investors who do not want to be redeemed to choose premium conversion. Therefore, redemption the design of the terms actually helps to speed up the conversion. In theory, the later the conversion period, the lower the financing cost of the convertible bonds. Taijing convertible bonds triggered the redemption clause at the beginning of the third year of issuance to choose mandatory redemption, which obviously reduced the financing cost. In addition, the issuer is more willing to redeem the convertible bonds in advance in order to avoid triggering the sale-back clause, prompting to accelerate the realization of the equity conversion of debt-to-equity swaps.

Due to the uncertainty of the project financing effect and the fierce market competition, the company adopts equity financing when expanding its scale. When the project investment effect is not ideal, the burden on the major shareholders is relatively small, while the investor's losses are relatively large. The company's burden is too much for simple bond financing. At this time,
the use of convertible bond financing can achieve results that are satisfactory to both the investor and the company. During the duration of the convertible bond, the conversion price can be negotiated to find a balance of interests.

4. Conclusions and countermeasures

4.1. Analysis conclusion

4.1.1. The timing of the issuance is reasonable, and the short-term negative announcement effect will be produced

The stock price of Taijing Technology Company before the issuance of convertible bonds was low and the company’s debt protection ratio reached 97.55%. At this time, the issuance of convertible bonds sent a signal to the market that the stock price will rise and the company’s long-term debt repayment ability is strong. However, it is known from the expected return rate and excess return rate indicators of the company’s stock price that the issuance of convertible bonds is not as expected, showing a negative shareholder wealth effect in the short term.

4.1.2. Fully improve the efficiency of capital use and optimize the company’s capital structure

After Taijing Technology Company issued convertible bonds, its total asset recovery rate was significantly higher than that of its peers. The use of debt financing has alleviated the problem that internal financing cannot meet the needs of enterprises in the process of completing industrial expansion and construction, indicating that convertible bond financing can promote the improvement of the efficiency of the use of funds. The company’s debt-to-asset ratio was low before the issuance and the company’s debt-to-asset ratio remained below 45% after the issuance of convertible bonds.

4.1.3. It has a buffer effect on equity dilution and obtains more equity income

Taijing Technology has a high degree of equity concentration, so the completion of the conversion of convertible bonds within a diversified time can greatly slow down the dilution of shareholders’ equity by direct equity financing, and protect the rights of original shareholders to the greatest extent. In addition, the economic benefits generated by convertible bond financing can promote the continuous improvement of shareholders’ equity. Under favorable conditions, major shareholders use arbitrage opportunities to continuously reduce their holdings to obtain more benefits.

4.1.4. There are doubts about the redemption motive, which will have a negative impact on the company’s business growth

In the face of arbitrage opportunities, the company's shareholders continue to reduce their shareholdings, and after the change in the trend of the convertible bonds, the company did not make a separate announcement. It did not issue a non-exercise announcement until early March 2020. When the redemption clause is triggered, whether to redeem or disclose information Unclear, so there is a suspicion of catering to market speculation. Considering the large difference in profit growth rate before and after the issuance of convertible bonds and other comprehensive factors, it is reasonable to doubt the market value management motivation of Taijing Technology Company to use convertible bond financing.

Based on the analysis of the three major growth indicators, Taijing Technology Co., Ltd. has great safety risks in its operation and development. From the perspective of long-term business growth of enterprises, compared with peer sales and service businesses, the ability to obtain cash is weak, and the competitiveness of the core products of enterprises is weak, and they are vulnerable to many factors in the international trade environment. At this time, the implementation of mandatory redemption clauses and other unfavorable factors have a greater negative effect on the company’s business growth value.
4.2. Suggestions

4.2.1. Regulations on Regulations of Information Disclosure Clause

It should be more rigorous when formulating contract terms. Taijing Technology first disclosed the announcement of no early redemption and then suddenly announced that it would redeem the convertible bonds early. The arbitrariness of information disclosure made the market's hype up. In response to the loopholes in the rules, on December 31, 2020, the China Securities Regulatory Commission issued the "Administrative Measures for Convertible Corporate Bonds", which stipulates that if the issuer decides not to redeem, the redemption right cannot be exercised again within the prescribed time limit.

In addition, the Shenzhen Stock Exchange has no restrictions on the number of shareholders to reduce their holdings in response to the disclosure obligation of reducing convertible bonds, which makes it easy for market entities to use quantitative advantages to manipulate market prices, and use large transactions to reduce their holdings of convertible bonds to specific related parties, which harms the interests of investors. Therefore, it is recommended to limit the number of convertible bond holders with a high percentage of convertible bonds to reduce the number of convertible bonds held by bidding transactions, and at the same time enhance information disclosure to key personnel to reduce rent-seeking space.

4.2.2. Increasing penalties for administrative violations

When there is room for arbitrage in the convertible bond market, the total shareholding of Taijing Technology’s main controlling shareholders and their concerted actors has changed by 5%, and they have failed to stop the reduction of holdings and fulfill the obligation to disclose the changes in accordance with the regulations. The regulatory bureau will give administrative penalties to the warning letter. In order to better regulate the trading behavior of shareholders of listed companies, penalties must be increased for violations of discipline, and fines must be increased to deal with non-compliance, so as to better protect the interests of investors.

4.2.3. Improve information review and market supervision mechanisms

Supervisors should strictly review the performance reports submitted by listed companies, pay special attention to growth companies that may experience major changes in performance, and set more convertible bond financing thresholds from the perspective of company value growth, and appropriately reduce the issuance of convertible bonds by listed companies Threshold restrictions.

Individual bonds with a stock capital of less than 30 million yuan in the convertible bond market and a relatively short remaining life may be allowed to be delisted. Relevant measures should be taken to deal with abnormal market fluctuation indicators in a timely manner, and a more effective "fuse" mechanism should be set up to curb excessive speculation.

4.2.4. Correct financing motives and strengthen investor education

Convertible bond investment that is separated from value investment is actually a zero-sum game. Fanatic speculators activate market liquidity and increase risks. At the same time, it will bring unpredictable economic consequences. When a listed company chooses convertible bond financing, it should have corporate ethics and risk prevention awareness, and should pay more attention to corporate governance and management, and correct financing motives, which is more conducive to the long-term operation and development of the company.

In the process of long-term investment transactions, it is often that the risks are very well controlled, and investors are at the information disadvantage. They should strengthen their understanding of the relevant rules of convertible bonds and pay more attention to the existence of investment risks. Establish investor capital access thresholds, strictly verify the appropriate qualifications of investors, and better protect the interests of ordinary investors.
References


