

Effects of Convertible Bond Financing -- Enterprise Value Analysis Based on EVA

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ABSTRACT

In recent years, as convertible bonds have become the mainstream refinancing method for Chinese companies, the financing effect of convertible bonds is being paid more and more attention by corporate managers and investors. Among them, the impact of convertible bond financing on corporate value is the focus of research. This article uses the EVA index system to study the impact of East Money's issuance of convertible bond financing on corporate value. Economic Value Added (EVA) is a new performance indicator and value analysis tool. The study found that East Money's corporate value declined in the year when the convertible bonds were issued, and that the corporate value rose from the second year and achieved a substantial leap from negative to positive, indicating that the development of convertible bond financing in the short term will reduce the value of the enterprise, and in the long run, the issue of convertible bond financing will enable the enterprise value to achieve leapfrog development.

Keywords: *Convertible bonds, EVA, corporation value*

1. INTRODUCTION

A series of new rules issued by China Securities Regulatory Commission (CSRC) in 2017 imposed quite strict constraints on private placement in terms of its pricing, lockup period, and shares reduction after bans are lifted, limiting the development of the private placement market. Financing through issuing convertible bonds has thus become an important tool for more and more listed companies to obtain a stable source of funds. Convertible bond investors exercise the right of conversion when the investment option is valuable, so that the funds will remain in the enterprise and reduce the debt ratio, which will help the enterprise reduce the cost of financing for subsequent valuable investment projects, which was pioneered respectively by Mayers [1] and by Stein [2] in the early 1992's. If the proposed financing company sets reasonable terms for the issuance of convertible bonds, the issuance of convertible bonds is conducive to improving company performance. In contrast, Lee [3] analyzed 986 listed companies that issued convertible bonds in the United States and found that after the issuance of convertible bonds, companies generally experienced a decline in performance. East Money publicly issued the "Dongcai Zhuanzhai", a six-year convertible bond of RMB 4,650 million, on December 20, 2017 on the Shenzhen Stock Exchange. However, the bond price triggered conditional redemption soon after issuance. Therefore, on May 21, 2019, the bond was delisted and the remaining tranches that hadn't been converted into shares were redeemed. The conversion rate was as high as 99.34%. This paper features a discussion about the effects of

financing through convertible bonds on enterprise value, based on the calculation of EVA indicators before and after East Money issuing the convertible bond.

2. EVA CALCULATION

EVA represents the results of deducting all input capital costs, including those of equity and debts, from after-tax net operating profits. As a financial indicator embodying the maximization of shareholders' wealth, EVA can accurately reflect the value created by a company for its shareholders, and has an advantage that traditional indicators lack. Calculation is made on a yearly basis with the data from 2016 to 2019, aiming to compare the changes in the weighted average capital before and after issuing the convertible bond.

$EVA = \text{net operating profits after tax} - \text{total capital} \times \text{weighted average capital cost}$.

2.1. Weighted Average Cost of Capital

2.1.1. Cost of equity capital

The capital asset pricing model is adopted in this paper. The capital asset pricing model is a common method for estimating the cost of common stock. According to the model, the cost of common stock is equal to the risk-free return rate plus risk premium. Formula:

$$K_e = R_f + \beta \times (R_m - R_f) \quad (1)$$

Table 1 2016-2019 Cost of equity capital

Indicators	2016	2017	2018	2019
Risk-free return rate	2.89%	3.62%	3.62%	3.20%
Market risk factor	1.587991	2.043835	1.569966	1.873011
Market return rate	9.19%	12.04%	8.49%	5.37%
Market risk premium	6.30%	8.42%	4.87%	2.17%
Cost of equity capital	12.89%	20.83%	11.27%	7.26%

Table 2 Calculating Cost of debt capital (Unit: 10,000 RMB)

Year	2016	2017	2018	2019
Short-term borrowings	7,357.63	29,798.55	21,305.71	40,251.70
Notes payable	0	0	0	0
Non-current liabilities due within one year	0	0	60,639.96	20,465.86
Total short-term interest-bearing debts	7357.63	29798.55	81945.67	60,717.56
Interest rate of short-term loans	4.35%	4.35%	4.35%	4.35%
Long term borrowings	0	0	0	0
Bonds payable	30,000.00	540,760.57	481,488.41	122,323.21
Total long-term interest-bearing debts	30,000.00	540,760.57	481,488.41	122,323.21
Interest rate of long-term loans	4.75%	4.75%	4.75%	4.75%
Pre-tax cost of debts	4.67%	4.73%	4.69%	4.62%
1 - Income tax rate	85%	85%	85%	85%
After-tax cost of debts	4.00%	4.02%	4.00%	3.92%

In Table 1, the risk-free return rate is the average yield rate of domestic 10-year national bonds in the year; the market return rate is the 5-year average yield rate of the Shanghai and Shenzhen 300 Index. In 2017, year of the issuance, the cost of equity capital peaked in the four years. However, the next year witnessed a sharp decline, which causes East Money's cost of equity capital in 2019, the year when the financing was finished, to fall to 7.26%, a result of the decreasing market return rate.

2.1.2. Cost of debt capital

The short-term interest rate is the benchmark interest rate of loans within one year (including one year) set by the People's Bank of China, and the long-term interest rate is the benchmark interest rate of loans within 1 to 5 years (including 5 years).

In Table 2, East Money's after-tax cost of debts remained roughly at 4% or higher, but a drop occurred in 2019. It was, as the table shows, due to the decrease in bonds payable, which resulted mainly from that East Money had completed its convertible bond financing.

2.1.3. Calculating weighted average capital cost(WACC)

The weighted average cost of capital divides the company's capital into two categories—equity capital and debt capital. These two correspond to the cost of equity capital and the cost of debt capital, respectively, and they are weighted average according to the proportion weight of the total capital, and the weighted average capital cost rate of the company is obtained. Formula:

$$WACC = K_e \times \frac{E}{E+D} + K_d \times \frac{D}{E+D} \quad (2)$$

In Table 3, the weighted average cost of capital of East Money decreased by 6.26 percentage points from 12.64% in the year before issuing the convertible bond to 6.38% in the year of completing the financing. This sharp decline means less than half the cost for the same amount of development capital, a result of lower cost of debt capital and equity capital.

2.2. Calculating EVA.

In Table 4, except in 2019, East Money's EVA in the other three years are all negative. Negative EVA are generally caused by too few net operating profits after tax or too much input capital. The above table tells that East Money's net operating profits after tax remained at about RMB 1 billion, which means the company was making profits. However, its EVA appeared as negative, which was mainly resulted from its large capital input to facilitate fast growth of the company and which because of the deferred benefits of such large input will be revealed later. In 2019, three years after the issuance, its capital input produced great benefits, changing its EVA of the year to positive. East Money's EVA stood at the bottom in 2017, year of the issuance, and gradually climbed up in the following two years. It meant that its enterprise value was reduced by the issuance, but as the capital input began to yield benefits, it began to grow stably in the second year and became positive in 2019. Therefore, the issuance can improve its enterprise value.

Table 3 Calculating weighted average capital cost (Unit: 10,000 RMB)

Year	2016	2017	2018	2019
Short-term interest-bearing debts	7,357.63	229,798.55	81,945.67	60,717.56
Long-term interest-bearing debts	30,000.00	540,760.57	481,488.41	122,323.21
Total debt capital	37,357.63	570,559.12	563,434.08	183,040.77
Total equity capital	1,283,118.02	1,468,044.66	1,569,523.95	2,121,248.93
After-tax cost of debt capital	4.00%	4.02%	4.00%	3.92%
Cost of equity capital	12.89%	20.83%	11.27%	7.26%
Weighted average capital cost	12.64%	16.13%	9.35%	6.38%

Table 4 Calculating EVA (Unit: 10,000 RMB)

Year	2016	2017	2018	2019
Net operating profits after tax	79,498.66	63,461.9	115,653.25	222,484.65
Total capital	1,315,296.78	2,031,860.27	2,127,229.41	2,298,765.06
Weighted average capital cost	12.64%	16.13%	9.35%	6.38%
EVA	-86,754.85	-264,277.16	-83,242.70	75,823.44

3. CONCLUSION

The calculation and analysis of EVA indicators suggested that convertible bonds affect a company's enterprise value by affecting its debt level. Enterprise value would decline in the year of issuance, then gradually rise as the funds

raised from issuing convertible bonds are put into use and produce benefits, and then become positive in the year when the financing is finished. Following this pattern, a company may realize a leap-forward development. Such achievement relies not only on the special nature of the convertible bond itself, but also on the timing of issuance, a key factor to realize a leap in enterprise value. In 2017,

the third year of acquiring East Money Securities, East Money had basically finished its integration. In the same year, the security industry also ushered in a new round of development opportunities, which were taken a good use by East Money through issuing the convertible bond. And the financing funds are used for the operation of East Money Securities Company, so that East Money Securities Company has obtained the funds needed for development in a timely manner, seized the opportunity of development and realized the leap-forward development.

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