

# Research on the Arbitrage Behavior of Exchangeable Bonds: A Case Study of Dongxu Group's Private Placement

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## Abstract

Due to the policy encouragement of private exchangeable bonds and their functions of financing and reduction, exchangeable bonds have been widely used in private placement. With the first introduction of relevant policies and regulations on exchangeable bonds in 2008, the threshold and review process for major shareholders of enterprises to implement private placement of new shares in China have been completely convenient and simplified, and the pull of government policies may trigger the management to blindly and excessively issue exchangeable bonds in the process of private placement, coupled with the fact that information disclosure is usually insufficient, in addition, most listed enterprises in China are one share, which is easy to affect the value judgment of investors and harm the interests of minority shareholders; The issuance of exchangeable bonds in the capital market by major shareholders by using their controlling stake and information advantages will raise questions from investors; At the same time, the combination of private placement of exchangeable bonds will provide certain arbitrage opportunities for major shareholders. This paper analyzes the "private placement + private placement exchangeable bonds" of the company by taking the arbitrage combination adopted by Dongxu Group in 2016 as the research object, and concludes that the company does have arbitrage behavior. Therefore, in view of the arbitrage behavior of Dongxu Group, it found the loopholes in the private placement private placement exchangeable bonds and the imperfections in the information disclosure and management system, and put forward corresponding opinions and suggestions on the problems.

## Keywords

Exchangeable Bonds; Private Placement; Reduction; Arbitrage.

## 1. Case Study of Arbitrage Behavior of Dongxu Group

### 1.1. Introduction of Dongxu Group

Founded in 1997, Dongxu Group is a high-tech enterprise. After 25 years of hard work, Dongxu Group has continuously improved its independent innovation capabilities, seized the commanding heights of the industry, and developed into a comprehensive industrial group covering six core businesses: optoelectronic display materials, high-end equipment manufacturing, semiconductor silicon-carbon materials, new energy power generation and components, new energy vehicles, and high-end medical pharmaceutical glass packaging materials. It has three listed companies: Dongxu Optoelectronics, Dongxu Blue Sky and Jialinjie. Dongxu Group also attaches great importance to the research and development of high and new technologies, and currently has more than 1,000 core patents. Among them, the company's liquid crystal glass substrate and high-end cover glass business in scientific and technological research and development, production capacity ranks in the forefront of the world, and forms a competitive semiconductor optoelectronic display material industry cluster.

## 1.2. Overview of Dongxu Group's Private Placement Exchangeable Bonds

Dongxu Group Co., Ltd., the controlling shareholder of Dongxu Optoelectronics Technology Co., Ltd., issued 16 million exchangeable corporate bonds ("15 Dongji EB") in June 2015, with a term of 2 years, the scale of funds raised was 160,000 yuan, and the latest exchange price was 10.47 yuan per share; In July 2015, it issued 15 million exchangeable corporate bonds ("15 Dongji 01") with a maturity of 2 years, the amount of funds raised was 150,000 yuan, and the latest exchange price was 11.93 yuan per share.

**Table 1.** Basic information table of private placement exchangeable bonds issued for 36 months in 2015

Related Investors	The issue price (RMB/share)	Subscribe for shares (100 million shares)	Subscription percentage (%)	Subscription amount (100 million yuan)
Dongxu Group	6.82	4.40	37.50	30.00
AssetManagement No.2	6.82	0.73	6.20	4.95
Asset.Management.No.3	6.82	0.08	0.70	0.55
Kunshan.Development Zone SDIC Group	6.82	0.44	3.80	3.00
Infinement.Hailin Investment Co., Ltd	6.82	0.29	2.50	2.00

Source: Juchao Information Network

## 1.3. Application and Motivation of Dongxu Group's Private Placement Exchangeable Bonds

1. The specific application of Dongxu Group's private placement exchangeable bonds

As the controlling shareholder of Dongxu Optoelectronics Co., Ltd. (hereinafter referred to as "Dongxu Optoelectronics"), Dongxu Group will issue new shares by Dongxu Optoelectronics Co., Ltd., and Dongxu Group will first buy new shares at a relatively low price, and then reduce its holdings at a higher price through private securities, and then benefit internally. Dongxu Group can use Dongxu Optoelectronics to distribute dividends, and can purchase new shares at a very low price by adjusting the setting of the suspension time and reference date, or disclose operating information during the share exchange period and frequently exchange shares. In the process of operation, Dongxu Group can also further ensure the terms of this private placement exchangeable bond by cleverly setting positive news, and successfully achieve high share exchange and appreciation.

However, capital markets do not fully recognize this arbitrage combination. The private placement of exchangeable bonds, especially the low-priced private placement of Dongxu Group, attracted the attention of some investors, which had a negative impact on the market. In contrast, the reduction and issuance of private exchangeable bonds did not have a significant impact on the market. Therefore, investors' perception of exchangeable bond allocations and private placements is fragmented, and they will not think that these two financial instruments are related to equity cash-out.

2. The motivation of Dongxu Group to issue private exchangeable bonds in a private placement  
The issuance of private exchangeable bonds is less restrictive and can meet the financing needs of listed companies. The issuance of exchangeable bonds does not require a rating and is less restrictive. In 2015, Dongxu Group acquired about 440 million shares of Dongxu Optoelectronics through a low-cost private placement of its subsidiary Dongxu Optoelectronics.

Due to the dual nature of exchangeable bonds, mutual conversion is possible. In contrast to convertible bonds, the issuer of exchangeable bonds uses its current shares in the listed company as collateral, which will not result in a transfer of control of the listed company, but will dilute the shares held by the majority shareholder. Subsequently, in June 2015, Dongxu Group issued a private placement of exchangeable bonds while preparing for the private placement. In order to enable bondholders to successfully transfer their shares on the transfer date 2016 and enable Dongxu Group to reduce its assets and cash outflows, the issuer has identified conditions that trigger the transfer, redemption, maturity and sale of the exchangeable bonds. Issuers and holders of exchangeable bonds must proceed from their own interests, rationally choose exchangeable bonds at the right time, and choose the right time to carry out equity conversion, redemption, sale and holding terms to maximize their own interests.

Less than a month before the last share transfer, in order to increase its shareholding, Dongxu Group successively issued new shares conducive to the development of its subsidiary Dongxu Optoelectronics Company and the stock price rise, making its stock price rise by more than 50%. If bondholders convert shares on the transfer date, they will receive about 20% of the investment income. As of the date of transfer, they will receive approximately 20% of the return on their investment.

**Table 2.** The details of the top ten shareholders of Dongxu Optoelectronics are shown in the table

Name of the institution or fund	Number.of holdings (shares)	Proportion to total share capital
Dongxu Group Co., Ltd	9.15	16.25%
Gem Electronics Group LLC	2.52	4.47%
Shanghai.Huimao.Enterprise Management Co., Ltd	1.65	2.93%
Shenzhen Tai'an Er Information Technology Co., Ltd	6116.57	1.09%
Kunshan Development Zone SDIC Holdings Co., Ltd	4183.83	0.74%
Beijing.Guoxing.Property Management Co., Ltd	1360.01	0.24%
Ho Qiao	1213.26	0.22%
Mianyang Science and Technology City	1138.02	0.20%
Xu Kaidong	1059.35	0.19%
Wang Yong	966.00	0.17%

Source: Juchao Information Network

## 2. Analysis of the Economic Consequences of the Private Placement Arbitrage Behavior of Major Shareholders

### 2.1. Analysis of Control Changes before and after Arbitrage

can be seen from the above table that before the private placement, Dongxu Group directly held 390,093,000 shares of Dongxu Optoelectronics, and its subsidiary Gem Group indirectly held 332,381,000 shares, accounting for 14.65% and 12.49% of the shares, respectively, Dongxu Group held a total of 27.14% of the total share capital of Dongxu Optoelectronics, which is the

largest shareholder of Dongxu Optoelectronics, which can influence the business decisions of Dongxu Optoelectronics and has relative control over it.

**Table 3.** Change of controlling shares before and after arbitrage

		Fixed add-ons	before fixed add-ons	after share exchange
Dongxu Group	Hold.shares	390,093,000		
	Holding.ratio	14.65%		
Gemstone.group	Hold.shares	332,381,000		
	Holding.ratio	12.49%		
Total	Hold.shares	722,474,000	1,162,357,868	883,806,849
	Holding.ratio	27.14%	30.31%	23.05%

**Source: According to the announcement of Dongxu Optoelectronics collated**

After the completion of the exchangeable bond exchange, Dongxu Group successfully converted shares through bondholders, and the number of shares held was not announced. However, Dongxu Group and its consistent actor Gem Group hold a total of 883,806,849 shares of Dongxu Optoelectronics, with a total holding ratio of 23.05%, although the shareholding ratio of Dongxu Optoelectronics has decreased, it is still the largest shareholder of Dongxu Optoelectronics. It follows that the controlling position of the major shareholder in Dongxu Optoelectronics has not been deprived and still has relative control over the listed company.

## 2.2. Research on the Impact of Private Placement on Corporate Financial Performance

### 1.Solvency analysis

**Table 4.** Indicators of solvency

Year index	2020	2019	2018	2017	2016	2015
Current.ratio	1.01	1.34	1.57	2.25	3.80	2.60
Quick ratio	0.62	0.74	0.93	1.42	1.76	3.09
Equity ratio	1.46	1.30	1.18	1.20	1.12	1.08
Asset-liability ratio	58.60%	55.86%	53.49%	53.95%	50.64%	52.73%

It can be seen from the above table that the current ratio of Dongxu Optoelectronics has been in a state of decline from 2015 to 2020. From 2.60 to 1.01, it is generally considered that the current ratio of 2 is more reasonable, and the current ratio soared from 2.60 in 2015 to 3.80 in 2016, which is just related to the private placement exchangeable bonds issued by Dongxu Group that year, and the current ratio of enterprises after the private placement is temporarily higher than the level before the fixed increase, but the consequences will be shown later, until 2020, the current ratio has dropped to about 1.

The quick ratio decreased from 3.09 in 2015 to 0.62 in 2020, it can be seen that the funds raised by the major shareholders through exchangeable bonds have been cashed out, and only the monetary funds of Dongxu Optoelectronics were briefly increased at the beginning, and it is

generally believed that the quick ratio of 1 is more reasonable, which shows that after the private placement, the monetary funds of the enterprise have also been greatly affected.

The equity ratio has been relatively stable, indicating that the shareholders' assets have not changed much, even after the private placement of exchangeable bonds and the reduction of shares by major shareholders.

Generally speaking, the asset-liability ratio can be seen the proportion of assets provided by creditors in the total assets of the enterprise, which to a certain extent indicates that creditors need to bear the risk of providing credit funds to enterprises, and the asset-liability ratio is more reasonable in 40%-60%, as can be seen from the above table, Dongxu Optoelectronics' asset-liability ratio has been between 50% and 60%, indicating that the proportion of enterprises through debt financing is large. In 2016, Dongxu Optoelectronics' asset-liability ratio decreased significantly, which was related to the refinancing behavior of enterprises through private placement exchangeable bonds issued by private placement, which briefly reduced the asset-liability ratio.

2.Profitability analysis

**Table 5.** Profitability indicators

year index	2020	2019	2018	2017	2016	2015
Net.profit.rate on sales	-50.75%	-49.30%	-8.90%	8.04%	11.18%	18.99%
Gross.profit.margin on sales	9.90%	7.73%	15.76%	17.75%	20.80%	30.14%
Return on equity	-10.53%	-11.66%	-4.85%	6.83%	7.09%	7.21%

The net profit margin of sales refers to the ratio of the net profit of the internship to the total sales, how much net profit can be realized per yuan of sales revenue, from the above table, it can be seen that the net profit margin of Dongxu Optoelectronics has been in a state of decline, especially in 2018 began to become negative growth, to 2020 sharply dropped to -50.75%, indicating that in this private placement, failed to implement the growth of the net profit margin of enterprise sales, but played a counterproductive effect.

Sales gross margin is sales revenue minus cost of sales income, Dongxu Group from 2015 began to issue exchangeable bonds after the continuous decline of Dongxu Optoelectronics sales gross margin, from 30% to about 10%, look at the 2016 annual report can be seen that the company is carrying out a diversified expansion strategy, affecting the overall profitability of the enterprise.

Return on net assets is to evaluate the profitability level of listed companies, the higher the value, the better, indicating that the proportion of net profit in net assets, Dongxu Optoelectronics was in a stable situation from 2015 to 2017, but it was not stable in the later stage, and the return on net assets became negative growth from 2018.

3.Operational capability analysis

The higher the turnover rate of accounts receivable, the stronger the liquidity of corporate accounts, less bad debt losses, fast asset flow, strong solvency, the above table can know that Dongxu Optoelectronics from 2016 to 2020 accounts receivable turnover ratio is lower than 1, mainly because in 2015 began to implement diversified expansion, resulting in a shortage of funds, and increased shareholders to issue exchangeable bonds.

Theoretically, the inventory turnover rate is 3, but the faster the inventory turnover, the better the inventory liquidity, the stronger the inventory liquidity, it can be seen that the inventory turnover rate and the inventory realization of the enterprise is directly proportional, Dongxu

Optoelectronics' inventory turnover rate in these five years is about 3 to 5, indicating that the inventory realization or the ability is still normal, indicating that the diversified expansion has not affected the normal operation of its main business. However, its fixed asset turnover rate and total asset turnover rate are low, indicating that Dongxu Optoelectronics has too low efficiency in the use of fixed assets from 2015 to 2020, overcapacity, and does not effectively play the efficiency of fixed assets, which may also be caused by the reduction of its main business.

**Table 6. Operating capacity indicators**

year index	2020	2019	2018	2017	2016
Account turnover rate	0.55	0.32	0.16	0.66	0.48
Inventory turnover rate	2.46	2.16	4.07	5.52	3.62
Turnover rate of fixed assets	0.57	0.34	0.18	0.67	0.46
Turnover of total assets	0.07	0.04	0.02	0.09	0.06

4. Growth ability analysis

**Table 7. Indicators of growth ability**

year index	2020	2019	2018	2017	2016	2015
Net profit	-34.03	-15.23	21.64	17.30	13.04	13.26
Net.profit.growth.rate	17.71%	-123.37%	-170.41%	25.05%	32.71%	-1.70%
Gross operating income	70.49	175.29	282.12	172.77	76.32	46.50
Revenue growth rate	-20.10%	-59.79%	-37.87%	63.29%	127.15%	48.41%

It can be seen from the above table that Dongxu Optoelectronics' net profit and total operating income increased significantly for two or three years when the major shareholder Dongxu Group issued exchangeable bonds, but by 2019, both began to grow negatively, the net profit growth rate dropped from 25.05% in 2017 to -170.41% in 2018, and the growth rate of total operating income also dropped from 63.29% in 2017 to -37.87% in 2018, indicating that Dongxu Optoelectronics' net profit growth and total operating income are not stable. There are cyclical characteristics of the industry.

It can be concluded from the above that, through a comprehensive research and analysis on the financial performance of Dongxu Optoelectric in four aspects of financial analysis indicators of solvency, profitability, operating capacity and growth capacity, a conclusion can be drawn: First of all, the financial performance of the enterprise has been significantly improved in the two years after the private placement. The trend of various financial analysis indicators is good, and the business situation is favorable, which indicates that the decision of Dongxu Group, the major shareholder of Dongxu Optoelectric, to issue private placement exchangeable bonds has reached a positive feedback of interest synergy. Secondly, the excellent business performance of Dongxu Optopower has only been maintained for about two years, that is, one or two years after its controlling shareholder Dongxu Group issued private placement exchangeable bonds, which is enough to show that Dongxu Group seized this opportunity and chose to issue exchangeable bonds in 2015, and entered the stock exchange period in 2016, because of the frequent positive external news. The rise of the stock price can just make the stock price smoothly reach the exchange level, so as to smoothly carry out the exchange and reduce the

holdings, and complete the arbitrage operation process. Research conclusions and recommendations

### 3. Conclusion

1. There are drawbacks in China's exchangeable bond information disclosure and related management systems

Juchao Information Network has only 2 documents released by Dongxu Optoelectronics when issuing and reducing its holdings of private exchangeable bonds, one is an indicative document about the controlling shareholder's exchangeable bonds entering the exchange period, and the other is the announcement that the controlling shareholder intends to issue exchangeable private placement bonds, until the complete completion of its share exchange, there is still no other relevant document information, and Dongxu Optoelectronics has not made any other explanation announcement on its related arbitrage behavior, which is enough to show the existence of this problem.

2. The arbitrage portfolio of private exchangeable bonds may cause losses to the interests of minority shareholders.

First of all, the private placement expands the share capital of the holding listed company, deceives investors and evades government supervision, because the approval process of private placement exchangeable bonds is simple and less binding, which can help major shareholders reduce their holdings in a short period of time has achieved the purpose of arbitrage. This practice has also caused a dilution effect on the shareholding ratio of minority shareholders, and the legitimate rights and interests of minority shareholders have been damaged, but the majority shareholders implement low subscription of private placement shares through poor information to offset the dilution effect, but small and medium-sized shareholders cannot subscribe with the majority shareholders due to information asymmetry or insufficient funds. Secondly, after the private placement of exchangeable bonds, the financial performance only breaks through in the short term or does not change too significantly, and the situation begins to rebound within 3 years, so in the long run, the operating performance cannot continue to grow, indicating that the market value of the enterprise has not been substantially improved. Finally, the exchange of exchangeable bonds issued by major shareholders for shares also sends a signal to the market that major shareholders reduce their holdings, and large fluctuations in stock prices will have a negative impact on the company's stock price in the bond trading market, and will also erode the interests of minority shareholders themselves.

3. Lack of regulation of dividend distribution

Through the Juchao Information Network, it was concluded that Dongxu Optoelectronics distributed cash dividends around 2015, just before and after the private placement of exchangeable bonds by its major shareholders, which is enough to help it lower the reserve price before the private placement, and at the same time, with the rising shareholding ratio of Dongxu Group in Dongxu Optoelectronics, it further expands the income obtained by its controlling shareholders using the arbitrage combination, and also enables the controlling shareholders to obtain more cash dividends than before.

### 4. Suggestion

1. Strengthen the information disclosure system for exchangeable bonds

As mentioned above, when Dongxu Optoelectronics issued exchangeable bonds by its controlling shareholders, the company's announcement did not have clear indicative documents, and there were only two indicative announcements, which are sufficient to show

that there is indeed insufficient supervision in China on the directional issuance of exchangeable bonds. Therefore, first of all, listed companies are required to disclose the information of private placement, and ensure that the information obtained by major shareholders and secondary market investors is symmetrical in terms of pricing price and method, participation objects, and fundraising purposes. Second, ensure the validity of listed company information so that minority shareholders can react quickly to the decisions of listed companies. Finally, in order to improve the fairness of the information disclosure of private exchangeable bonds of listed companies, minority shareholders can only make wise investment choices if they have complete information on private exchangeable bonds. For example, requiring major shareholders to disclose the source of private placement funds, as well as the use of funds after the private placement of allotted shares pledged, and the use of funds, may reduce the occurrence of arbitrage by controlling shareholders.

For exchangeable bonds, the issuer shall first make complete and timely disclosure of the purpose, use and use of the financing when issuing exchangeable bonds, and explain the reason and necessity of issuing bonds. Secondly, the issuer must provide at the time of issuance the number and proportion of shares traded during the trading period. Only when investors of exchangeable bonds and investors of listed companies' stocks fully understand the relevant information, the impact of exchangeable bonds on the whole bond market can be assessed by combining the relevant information disclosed by the issuing body with the policy information, so as to decide whether to buy exchangeable bonds. Thus, it can restrain the arbitrage behavior of major shareholders through the private placement of exchangeable bonds.

## 2. Improve the corporate governance structure and enhance the investment literacy of minority shareholders

First of all, optimizing the shareholding structure is conducive to improving the governance structure of listed companies. In companies listed on the stock exchange, the issue of proxy between major shareholders and minority shareholders has always existed, and the phenomenon of large shareholders using their controlling stake to influence the company's decision-making to defeat minority shareholders has occurred from time to time. Therefore, it is particularly important to appropriately reduce the control of major shareholders and introduce professional strategic investors, which can not only curb the motivation of major shareholders themselves, but also encourage and control the professional business decisions of listed companies. Secondly, due to weak investment literacy, small and medium-sized investors generally have poor ability to identify and judge capital market information. They rely too much on the experience of others and blindly listen to market rumors. For example, when a listed company announces a targeted increase in M&A assets, they blindly take the news as positive, and when a major shareholder announces a reduction in its holdings, they also see the news as negative. For small and medium-sized investors, it is especially important to improve the clarity of the inherent risk level and strengthen professional knowledge, in this field, in order to improve, for companies listed on the stock exchange, before the investment is realized, conduct rational and effective evaluation and research on the relevant companies, so as to improve their own knowledge literacy to deal with infringement of their own interests.

## 3. Exercise appropriate control over the profit distribution of listed companies

China's regulatory authorities should improve their keen awareness, identify and warn against certain specific profit distribution behaviors, and can use this to issue relevant legal documents to give certain restrictions, such as those shares obtained in the private placement but still in the restricted period cannot get the same distribution rights as ordinary shares when the company executes dividend issuance, and must obtain the same distribution right after the end of the restricted sale period. However, this may cause dissatisfaction among investors who subscribe for shares, so after the end of the restricted period for the private placement of subscribed shares, and the profit target stipulated by the listed company is achieved, then the



company can tend to formulate a profit distribution policy to make up for the shareholders who have been underdistributed dividends due to the private placement, and at the same time can also encourage the private placement subscription other than the controlling shareholders to more actively supervise the company's operation.

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