The development and application of convertible Bonds -- A case study of Shanghai Pudong Development Bank's Convertible Bonds

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Abstract. In recent years, with the continuous strengthening of refinancing demand, banks have more diversified ways of refinancing, such as perpetual bonds, secondary capital bonds, and convertible bonds. It is found that convertible bonds meet the capital replenishment needs of commercial banks, and the financing cost is compared with that of other financing instruments. The method adopted in this paper is the case analysis, and the "Pudong Development Convertible Bond" publicly issued by Shanghai Pudong Development Bank (SPDB) in 2019 is taken as the case study object. Based on the background that commercial banks are scrambling to issue related schemes of convertible bonds, this paper expounds on the financing effect and significance of the issuance of convertible bonds by SPDB based on the historical process and current situation of convertible bonds and the basic situation and financing process of SPDB. Comprehensive analysis shows that before the issuance of convertible bonds, the asset-liability ratio of SPD Bank is relatively high. After the issuance of convertible bonds, the asset-liability ratio and capital adequacy ratio of banks have been improved, but the return rate and net profit level have been negatively affected. The paper hopes to provide a reference value for issuers such as commercial banks and listed companies as well as regulators of convertible bonds on the improvement of the market system of convertible bonds.

Keywords: Convertible bonds; refinancing; Shanghai Pudong Development Bank.

1. Introduction

Under the current economic environment, China has introduced a lot of laws and regulations related to refinancing, which to a large extent stimulated the output of refinancing tools and programs. Convertible bond financing is a kind of hybrid bond, which includes the attributes of the bond and the derivative characteristics of the stock. Convertible bond (CB), which combines the characteristics of low risk and high return of equity and creditor's rights, has attracted the attention and favor of many Chinese investors since they entered the Chinese market. Convertible bonds have developed rapidly in China in recent years, and the market space has been expanding. According to wind, China's issuance of convertible bonds reached 282.9 billion in 2021, while only 21.3 billion in 2016. The convertible bond market growth is considerable. Up to November 4, 2022, the cumulative issuance scale of the convertible bond market within the year reached 181.105 billion yuan.

At the same time, banks are looking for a variety of refinancing tools to enhance their economic vitality. Convertible bonds, as a refinancing tool, have the characteristics of low financing cost and a relatively simple process, which can reduce some uncertainty and instability for the issuance of banks. Therefore, under the trend of continuous improvement of convertible bonds, commercial banks are more inclined to choose convertible bonds as a refinancing channel to optimize financing structure and obtain a stable long-term capital supply. For banks, issuing convertible bonds and completing equity swaps will replenish their core tier 1 capital. According to the statistics of wind, bank convertible bonds made a great contribution to the scale of national convertible bonds in 2019. 126 convertible bonds were issued in 2019, with a total issuance of 269.5 billion yuan. Among them, the total amount of convertible bonds issued by Ping An Bank, China Citic Bank, Suzhou Bank, and

SPDB reached 136 billion yuan, among which the total amount of convertible bonds issued by SPDB was 50 billion yuan.

China's convertible bond market started late, and the market system is not fully formed. However, nowadays China's capital market is facing good opportunities. Based on the above background, this paper adopts the case analysis method. Firstly, it reviews the relevant literature on the development of China's convertible bond market and the financing effect of convertible bonds and analyzes the financing background of Chinese banks by combining the data of the People's Bank of China, the China Banking and Insurance Regulatory Commission and the China Securities Regulatory Commission. By collecting and sorting out the data published in the annual reports of Shanghai Pudong Development Bank in recent years, based on its financial indicators, the impact on the operating situation is summarized, and the financing effect of SPD Bank's issuance of 50 billion convertible bonds is analyzed. According to the analysis, the issuance of SPD Bank's convertible bonds positively impacts the net capital and asset-liability ratio, and a negative impact on the Retain on Equity. By analyzing the financing effect of Shanghai Pudong Development convertible bonds, this paper provides enlightenment and reference for the subsequent issuance of convertible bonds by analyzing the definition, characteristics, and benefits of convertible bonds, providing suggestions for the development of the convertible bond market in China.

2. Research Framework

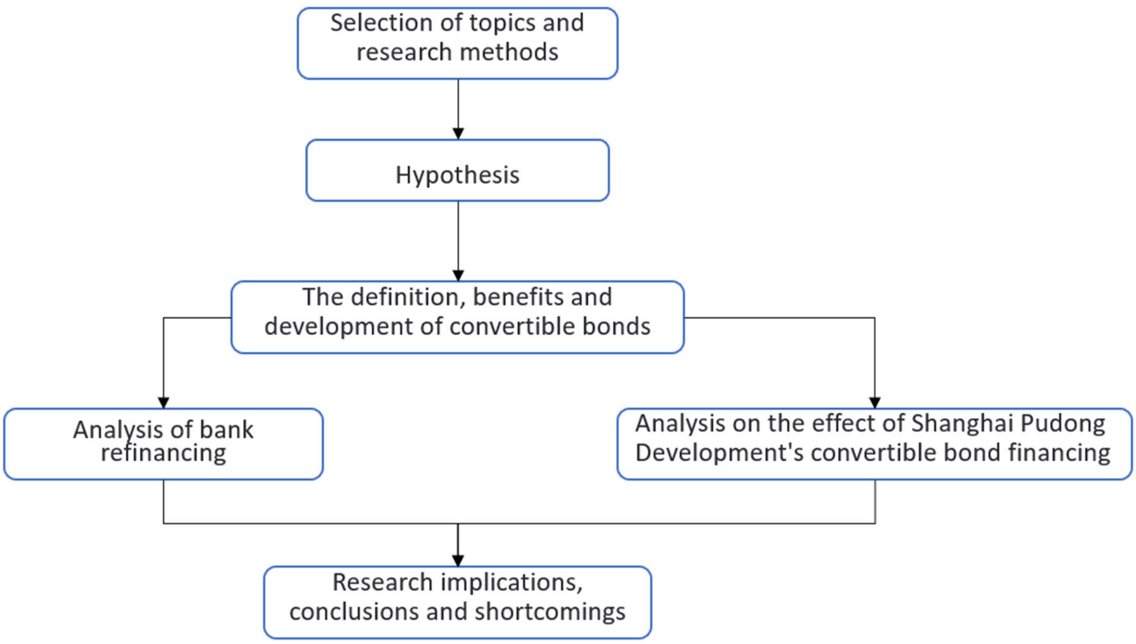

Fig. 1 The basic framework of this paper

3. Issue Motivation

3.1 Backdoor Financing Hypothesis

The information asymmetry motive theory, first proposed by Myers and Majluf in 1984, suggests that there is information asymmetry between external investors and listed companies, making it difficult for investors to distinguish between good and bad companies, and that companies wishing to raise equity financing, such as issuing shares, must do so at a discount. Using this theory as a prototypical assumption and foundation, the duo developed the backdoor financing hypothesis. In the hypothesis, it is very unfair to high-quality companies, so when high-quality companies need external financing, they would rather give up equity financing and prefer debt financing, thus forming a financing sequence of debt first and then equity. However, at the same time, the cost of pure debt financing is high and may pose a financial risk to the company, while the issuance of convertible bonds avoids the need to issue equity securities at a discount, while at the same time avoiding the high debt burden due to its low coupon rate and convertibility, making it the preferred choice of financing for quality companies.

3.2 The Estimation Risk Hypothesis

Brennan and Schwartz consider that as sensitivities do not affect convertible bonds very much, to minimize the cost of assessing risk, convertible bonds make a perfect substitute for bonds. This is particularly the case when the investor has little knowledge of the risk of the business. When investors do not know much about the risk of a business, they demand a higher return when financing bonds and the cost of risk assessment is relatively lower for convertible bonds than for bond financing. Thus, as an objective cost of risk, convertible bonds help companies save some of it. The low-risk sensitivity stems from the dual attributes of convertible bonds. The impact of risk on the certification of the bond component and the equity value of convertible bonds is very different. When the true risk is higher than the predicted risk, the certified value of the equity component also becomes higher, while the value of the bond without stupidity becomes lower. Therefore, the deviations in the bond and equity values of convertible bonds in the risk prognosis will cancel each other out.

4. Convertible Bonds

4.1 Definition and characteristics of convertible bonds

Convertible bonds refer to corporate bonds whose holders have the right to convert them into common shares at an agreed conversion price or conversion ratio within a specific period [1, 2]. Such a kind of bond is better than financial instruments such as stocks or futures relating raising funds and avoiding risks. It is generally considered that a portfolio that does not include convertible bonds is imperfect [3]. On the part of investors, the option of a convertible bond gives them an active position in the trade-off between risk and return. They can either hold on to their bonds for a steady interest yield or convert them into stocks for a higher dividend return. Such investment characteristics create many investment opportunities. For the issuers of convertible bonds, they have the right to redeem in advance, and the financing cost of enterprises has been greatly reduced [4, 5].

4.2 The benefits of issuing convertible bonds

During the 1990s, with the reform of China's economic system and the development of the securities market, a number of unfavorable features emerged, such as a decline in the level of interest rates and an increase in the volatility of fixed income market risk. These factors have led to a disproportionately high level of equity financing for Chinese companies, to the detriment of the integrity and diversity of the capital markets. Because of the flexibility of convertible bonds, some of the problems encountered with other financing methods, such as the positioning of interest rates and prices, and the trouble caused by the cost of financing, have been avoided. Convertible bonds not only meet the needs of China's economic development but also have the effect of regulating the structure of corporate assets. Convertible bonds have the dual characteristics of equity and debt, with the high risk and high return of equity and the stability of bonds. This allows companies to be more selective in their listing financing and more flexible in their investments.

For companies with a low debt ratio, a small proportion of shares outstanding, stable operations, and a certain degree of growth, convertible bond financing can raise more capital at a lower cost than a share issue.

Firstly, convertible bonds are suitable for the need to raise large amounts of capital and dilute existing equity. The conversion price of convertible bonds is higher than the price of the additional shares. Among the equity-financed projects, only the conversion price of convertible bonds is explicitly stated to be higher than the original a-share price. When a company raises funds by placing shares, the price is at 60% of the original price. When additional shares are chosen, the share price is close to the a-share price but still mostly below the original price. Convertible bonds are issued at a premium, and the financing raised by convertible bonds is less dilutive to the shares than if the shares were issued or allotted, so more money can be raised by convertible bonds. Moreover, the interest rates on convertible bonds are generally lower than those required for bank deposits and ordinary corporate bonds, which at the same time reduces the cost of financing.

Secondly, convertible bonds can improve the equity as well as the debt structure of a company. Convertible bonds have the dual characteristics of equity and debt, as they exist as a liability of the company before conversion, but as principal after conversion, which is why they are also a regulator of the equity and debt weightings of the company. If the controlling shareholder's equity is too high, convertible bonds can be issued to raise funds to buy back the equity to increase earnings per share. If a company has too much debt, it can issue convertible bonds to replace its short-term debt and postpone the company's debt servicing period.

4.3 The development of convertible bonds

Since the Erie Railway Company in New York issued the first convertible bond in the world in 1843, this important financing tool has been developed in the world for more than one hundred years [6]. Then convertible bonds have developed rapidly in the international financial market and have become an important part of the international financial assets of many countries. The beginning of China's convertible bonds dates back to the end of the 20th century. In the 1990s, Chinese companies began to explore new financing channels, and it was at this point that companies realized they could use convertible bonds to make financing more affordable.

November 19, 1992, China Baoan Company (formerly known as Shen Baoan) issued the first convertible bond in China on November 19, 1992. But as the issue of Baoan company was in trouble, the company's convertible debt to equity failed. However, the convertible bond is the first financial innovation product of compound right in the Chinese capital market. Such exploration also accumulated valuable experience for further developing the CB market in our country [7]. The emergence of convertible debt fills the blank of our capital market to some extent [8].

5. Bank of China IPO Refinancing

5.1 Background of the Bank of China IPO refinancing

On 24 November 2009, the Shanghai Stock Exchange Index on the Chinese capital market suddenly plunged by 3.43%, the largest drop in three months at the time. The Growth Enterprise Market (GEM), which had only recently opened, was also hit hard, with stocks falling extensively. The reason for this is that Bank of China was planning to refinance about 100 billion yuan. The market was concerned that the bank would face enormous pressure to replenish its capital. This was because Bank of China had the lowest capital adequacy ratio of 11.63% among the listed Chinese state-owned banks at the time.

The first bank-convertible bond in China was issued by China Minsheng Bank in 2003. The issue amount was 4 billion yuan. As Minsheng Bank was not in a position to issue additional shares or place shares at that time, it had to choose convertible bonds. As the second convertible bond issued by China Merchants Bank, it was not ethical either. Subject to the resistance of many fund companies' liquid shareholders at the time, China Merchants Bank had to reduce the financing amount of convertible bonds. Comparatively speaking, it was in 2010 that bank convertible bonds were formally developed in the Chinese capital market. The first convertible bonds were generally issued by Chinese state-owned banks and some commercial banks. And after 2016 many city commercial banks and agricultural commercial banks are also starting to try to raise funds through convertible bonds. Generally speaking, the main issuers of convertible bonds are still listed banks. 2019 saw explosive growth in bank convertible bonds, with a fundraising amount of 136 billion yuan, a significant increase compared to previous days. The core demand of banks issuing convertible bonds is to convert shares. Chinese listed banks choose convertible bonds for refinancing because, on the one hand, convertible bonds give the right to convert or not to convert to investors in the market, who can be isolated from future problematic bank non-performing assets. convertible bonds are the result of a balance between the interests of investors and banks. On the other hand, convertible bonds are relatively easy to issue and have more recognition in the market.

5.2 Sustainable development of the bank

In 2022 the banking sector in China has maintained a continuous and solid development, from table 1 it can be concluded that the banking sectors know how and liability balances as a percentage of the overall financial sector are over 90%.

Table 1. Composition of China's financial asset and liability balances in 2022

Unit： Trillion yuan	Banking	Securities industry	Insurance	Total
Total assets	367.68	13.10	26.64	407.42
Total liabilities	337.3	10.02	23.73	371.04
Ownership interests	30.38	3.05	2.91	36.38

Data Source: People's Bank of China, China Banking and Insurance Regulatory Commission, China Securities Regulatory Commission

In terms of data, in 2022 the market demand for finance will become more urgent as the economy grows, the speed of asset size will increase, and the asset mix will be further optimized. In terms of net profit, 1.1 trillion yuan was recorded in the first half of 2021 while commercial banks accumulated a net profit of 1.2 trillion yuan in the first half of 2022, an increase of 7.1% year-on-year. 2022 saw the impact of the crisis in Ukraine on the global economic recovery, high inflation triggered by surging energy and food prices, and geopolitical conflicts overlaid with the new crown pneumonia epidemic, which have become important factors affecting the economic and financial development of the world today. China's economic development faces significantly more risks and challenges, but the basic direction of long-term economic upturn remains unchanged. Commercial banks still need to refinance to support the continued expansion of their assets and liabilities and to refine their structures to enhance their income generation capabilities.

6. Convertible bonds of SPDB

In October 2019, the A-share market welcomed the largest convertible bond in history at that time -- Shanghai Pudong Development Convertible Bond. SPDB has issued convertible bonds worth up to 50 billion yuan. The following is an analysis of the financing effect of Shanghai Pudong Development convertible Bonds.

6.1 Net capital

Net capital is a regulatory indicator to measure the adequacy of capital and the status of assets, which can be realized to prevent risks. The capital adequacy ratio can be used to measure a bank's performance. (Hassan & Victor, 2021) If a commercial bank has a high capital adequacy ratio, then the bank can withstand the risk of default assets.

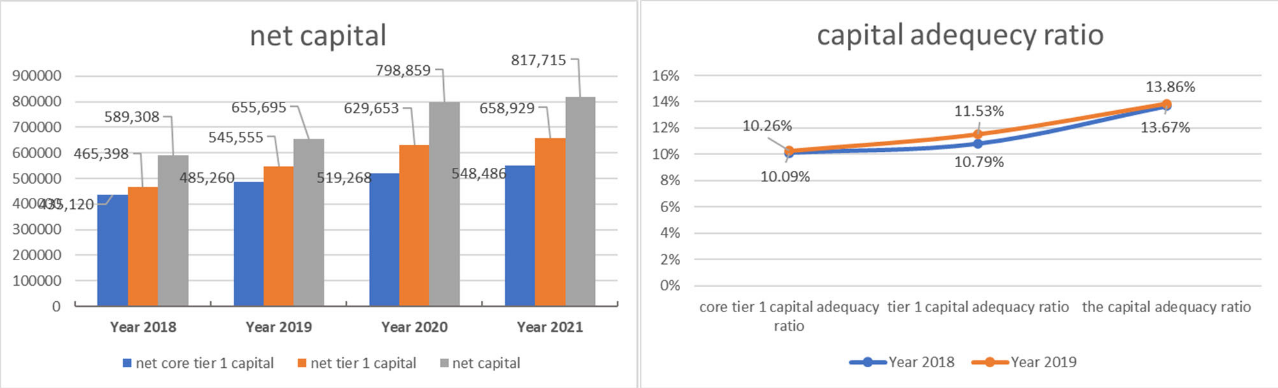

Fig. 2 Net capital and Capital adequacy ratio

Data Source: Shanghai Pudong Development Bank Financial Report

As can be seen from the figure 2, SPD Bank's net capital continued to increase after the issuance of convertible bonds in 2019. On December 31, 2019, SPD Bank's core tier 1 net capital, tier 1 net capital, and net capital annual growth rate were 11.52%, 17.22%, and 11.27% respectively.

The capital adequacy ratio of SPDB in 2019 was higher than that of 2018 and higher than the regulatory level.

6.2 Retain on Equity

ROE is a measure of growth potential and profitability. It helps investors determine whether a company is likely to be profitable in the long run.

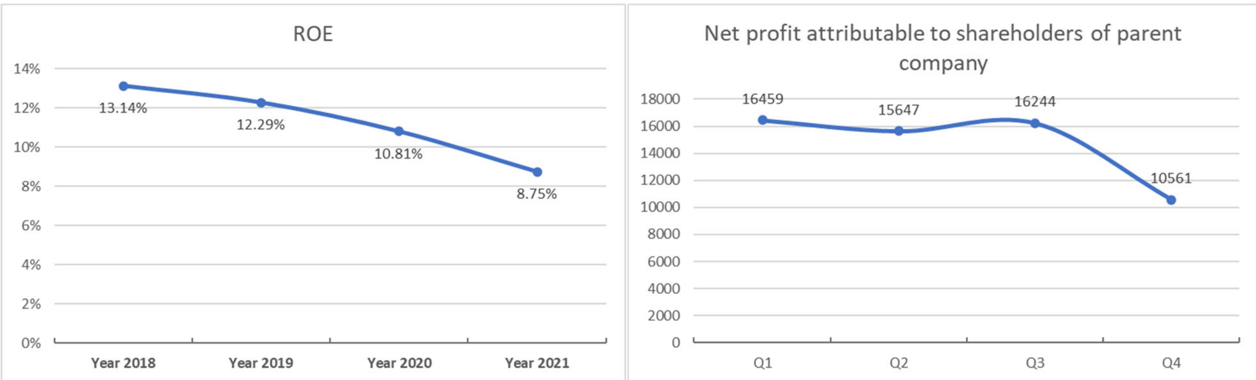

Fig. 3 ROE and Net profit

Data Source: Shanghai Pudong Development Bank Financial Report

As can be seen from the figure 3, the ROE of SPDB has decreased in recent years. By observing the changes in SPD Bank's net profit in the four quarters of 2019, it is not difficult to see that since SPD Bank issued convertible bonds in October 2019, its net profit declined significantly in the fourth quarter.

To sum up, SPDB Bank's convertible bonds hurt its net income level.

6.3 Return on Asset

As another important analysis index of profitability, ROA can be used to measure the asset utilization rate of an enterprise, which is convenient to show the business strategy of a bank.

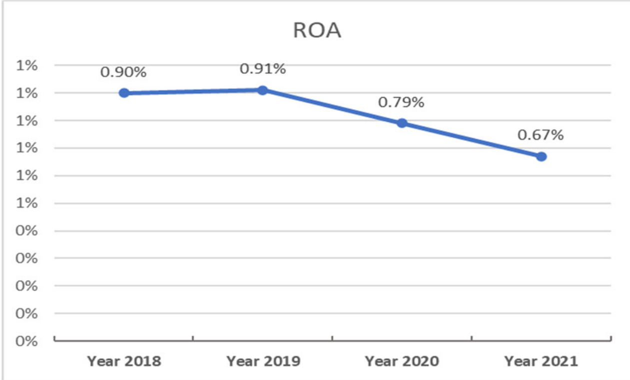

Fig. 4 ROA

Data Source: Shanghai Pudong Development Bank Financial Report

The ROA of SPD Bank increased somewhat in 2019 compared with that of 2018 before the issuance, but the overall ROA level in recent years was lower than the average ROA of commercial banks (See figure 4).

6.4 Asset-liability ratio

The asset-liability ratio is a measure of a company's use of external funds. Through the asset-liability ratio, people can see the level of a bank's liabilities and the degree of risk.

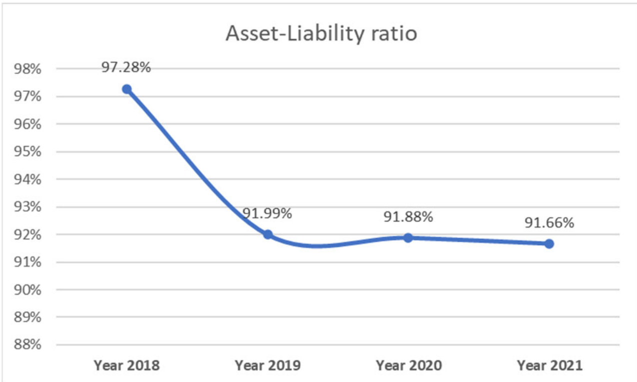

Fig. 5 Asset-liability ratio

Data Source: Shanghai Pudong Development Bank Financial Report

As can be seen from the figure 5, the asset-liability ratio of SPD Bank decreased significantly in 2019 and has remained below 92% in the past three years. Thus, the issuance of convertible bonds by SPDB positively impacts the asset-liability ratio.

Generally, after the issuance of convertible bonds, SPD Bank's operating conditions were improved, but its ROE level declined year by year.

7. Implications and suggestions

7.1 For enterprises

Firstly, they are advised not to blindly rush to issue convertible bonds just as the bonds are efficient and low-cost financing tools. Enterprise managers should have a clear understanding of the overall situation of the enterprise, and choose the appropriate financing method based on the characteristics and operating conditions of the enterprise, even including the situation of the strategic decision-making level of the enterprise. The above indicators can reflect the development potential of an enterprise and its ability to resist risks. The issuance of the convertible bonds is the result of the combined action of its financing demand and investment demand in the market [9]. If the business is good enough to support a sustained rise in the share price, investors may all prefer a debt-for-equity swap. The result is less likely to be overpriced offerings.

Secondly, the issuer of the stock should set reasonable terms of issue and a clear price for the stock transfer. Considering its own financing needs, the issuance scale of convertible bonds, and the coupon rate, the issuer had better find a balance of interests with the investors to ensure the smooth progress of the project. As a financing tool, the convertible bonds should be treated carefully by the issuer to ensure the interests of the issuer and a stable source of funds. Reduce the impact of stock price fluctuations.

Thirdly, after the issuance of convertible bonds, the issuer should always pay attention to the trend of convertible bonds and carry out corresponding management. In this process, the importance of planning and decision-making at the strategic level cannot be ignored [10,11]. Only by sending a positive message to the market can the issuer attract investors and motivate them to choose to swap shares. Changes in bond prices cannot be separated from changes in stock prices, and the positive dynamics of convertible bonds depend on the valuation of stocks.

7.2 For supervisors

It is undoubtedly critical to strengthen the supervision of the convertible bond market, but it can also be advocated to simplify the process to some extent. Taking SPD Bank's issuance of convertible bonds as an example, the steps for commercial banks to issue convertible bonds are very complicated, which need to pass layers of the audit. If the speed and efficiency of the publisher are expected to increase, some of the processes within the process should be simplified.

8. Conclusion

This paper studies the development and application of convertible bonds, taking SPDB issuing convertible bonds as an example. Meanwhile, this paper combs the related literature and hypothesis of convertible bonds. With the combination of the convertible bonds market background and sustainable development of the bank in our country, the paper also elaborates on the development history and advantages of convertible bonds in the role of the financing tool. Finally, based on the financial indicators, this paper analyzes the financing effects of SPDB after its issuance and draws out the strategy for developing the convertible bond market. The emergence of convertible bonds has made great contributions to meeting the needs of economic market development and the financing needs of enterprises and commercial banks. Compared with other refinancing instruments, convertible bonds are more flexible with lower costs when issued, which gives convertible bonds great attraction. The co-existence of equity and debt in convertible bonds not only makes the risk and return relatively balanced but also makes the investment portfolio relatively perfect.

Given the case study method adopted in this paper to analyze the financing effect of SPD Bank's issuance of 50 billion convertible bonds, the results prove that the issuance of convertible bonds has a positive impact on SPDB. Finally, this paper puts forward some suggestions to improve the convertible bond system through issuers and regulators. To sum up, China's convertible bond market started late, and its development is affected by many factors. In this environment, promoting the construction of corporate and bank bond markets is the key to improving the market system of convertible bonds and developing the market of convertible bonds. This paper uses a single case study with limited access to data. Conclusions drawn from the analysis of just one bank may not apply to other listed banks in the market.

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