A Study on The Impact of Convertible Bond Issuance on The Performance of Listed Companies: A Case Study of Chengdu Bank

Mingqiu Zhang *

Cooperative School of International Education, Tianjin University of Commerce, Tianjin, 300134, China

* Corresponding Author Email: zhangmingqiu@stumail.tjcu.edu.cn

Abstract. This study investigates the impact of convertible bond issuance on the performance of listed companies, focusing on Chengdu Bank as a case study. Convertible bonds are a significant refinancing tool for listed companies in China. Since the China Securities Regulatory Commission introduced convertible bonds in 2008, their application has become widespread. This paper explores the motivations behind Chengdu Bank's issuance of convertible bonds, such as enhancing financial strength, meeting regulatory requirements, supporting the real economy, and mitigating risks. Utilizing financial data from 2017 to 2024, including ROE, OPGR, and CBI, alongside macroeconomic indicators like GDP growth rate and CPI, this study employs a multiple linear regression model to quantify the effects of convertible bond issuance on the bank's performance. Preliminary findings indicate that Chengdu Bank's performance improved significantly during and after the issuance years, suggesting that convertible bonds effectively bolster financial resilience and operational efficiency. This research provides valuable insights for banks considering similar refinancing strategies to optimize capital structure and enhance risk management.

Keywords: Convertible Bonds; Chengdu Bank; Financial Resilience.

1. Introduction

Convertible bonds are an important refinancing tool for listed companies. In 2008, the China Securities Regulatory Commission (CSRC) promulgated the Measures for the Administration of Corporate Bonds, which allowed companies to issue convertible bonds, marking the beginning of the formal introduction of convertible bonds as a financing tool in the Chinese market [1]. With the continuous development and improvement of China's capital market, convertible bonds have been widely used in the Chinese market. Affected by the economic downturn in recent years, corporate profitability has declined, and some enterprises may not be able to repay their loans on time, resulting in an increase in banks' non-performing assets, which in turn affects the asset quality of banks. According to data disclosed by the China Banking and Insurance Regulatory Commission, the capital adequacy ratio of commercial banks (excluding branches of foreign banks) was 14.87% at the end of the second quarter of 2022, down 0.14 percentage points from the end of the previous quarter. The Tier 1 capital adequacy ratio was 12.08%, down 0.17 percentage points from the end of the previous quarter. The core Tier 1 capital adequacy ratio was 10.52%, down 0.18 percentage points from the end of the previous quarter. Banks are under pressure from rising capital costs and increasing liquidity risks and need to take appropriate risk control and capital management measures to ensure sufficient capital reserves for daily operations. The issuance of convertible bonds by commercial banks can also help improve their capital levels and help banks better cope with financial market fluctuations and risks. At the same time, the issuance of convertible bonds can also broaden the financing channels of commercial banks, provide more financial support for future development, and meet the capital needs of expansion and development.

2. Motivations For the Issuance of Convertible Bonds By Chengdu Bank

According to the *Feasibility Report on the Use of Funds Raised by Bank of Chengdu Co., Ltd.'s Public Issuance of A-share Convertible Corporate Bonds*, the motivations for Bank of Chengdu's issuance of convertible bonds are as follows.

2.1. Enhancing Financial Strength to Meet Regulatory Requirements

In recent years, the China Banking and Insurance Regulatory Commission and the People's Bank of China have greatly raised the standards for capital supervision and control of China's commercial banks, and at the same time, they have become stricter in calculating the definition of banks' risk assets and capital, further raising the requirements for capital adequacy ratios and increasing the pressure on commercial banks to replenish their capital. As of March 31, 2021, the Company's consolidated core Tier 1 capital adequacy ratio, Tier 1 capital adequacy ratio and capital adequacy ratio were 8.75%, 10.01% and 13.38%, respectively. Considering the company's integrated and diversified operation pace and the need to improve risk resilience, the company's core Tier 1 capital adequacy ratio is still low, and it still needs to further enhance its capital strength.

2.2. Supporting the Real Economy to Meet Lending Demands

The Fifth National Financial Work Conference pointed out that serving the real economy is the purpose of finance and is also a fundamental measure to prevent financial risks. At present, China is in the first year of the "14th Five-Year Plan", the pace of economic restructuring has been further accelerated, based on the overall stable operation of the national economy and the enhancement of financial support for the real economy, and combined with the company's main tasks of supporting the development of the real economy such as "deep cultivation of characteristic finance, exploration of new business models, in-depth promotion of industry analysis, and vigorous development of supply chain finance", it is expected that the company's business will maintain sustained and stable growth in the next few years, so the company in response to national policies and achieve its own development goals. It is necessary to replenish capital to better serve the real economy and meet the demand for credit.

2.3. Strengthening Financial Resources to Enhance Risk Resilience

In recent years, the company has developed rapidly, the scale of assets has grown steadily, and the company has improved its capital adequacy level through a combination of endogenous accumulation and external supplementation. However, due to the continuous needs of business development, the capital consumption is increasing, and the company urgently needs to continue to replenish the capital. The public issuance of convertible bonds to provide support for business development and replenish core Tier 1 capital after the conversion of shares will not only help the company improve its capital adequacy level and meet increasingly stringent capital regulatory standards, but also enhance the company's ability to resist risks and provide reliable financial support for the company's sustainable development in the future. Therefore, the funds raised through the public issuance of convertible bonds can supplement the company's core first-class capital after the conversion of shares, and at the same time further enhance the company's financial strength, it can also effectively enhance the company's risk resistance ability, which is conducive to the company's steady operation and sustainable development.

2.4. Industry Promotion

In China's commercial banking system, there are mainly 6 large state-owned commercial banks, 12 national joint-stock commercial banks, 133 urban commercial banks, and about 302 rural commercial banks, of which 20 of the 133 urban commercial banks are listed on the A-share market [2]. Judging from Figure 1 below, the asset scale of Bank of Chengdu ranks relatively high among commercial banks and is in the forefront of the industry, but there is a tendency to be caught up. At the same time, there is a large gap between Chengdu Bank and other banks such as the Bank of Beijing. In this industry context, Bank of Chengdu needs to expand the scale of the industry and enhance its position through refinancing.

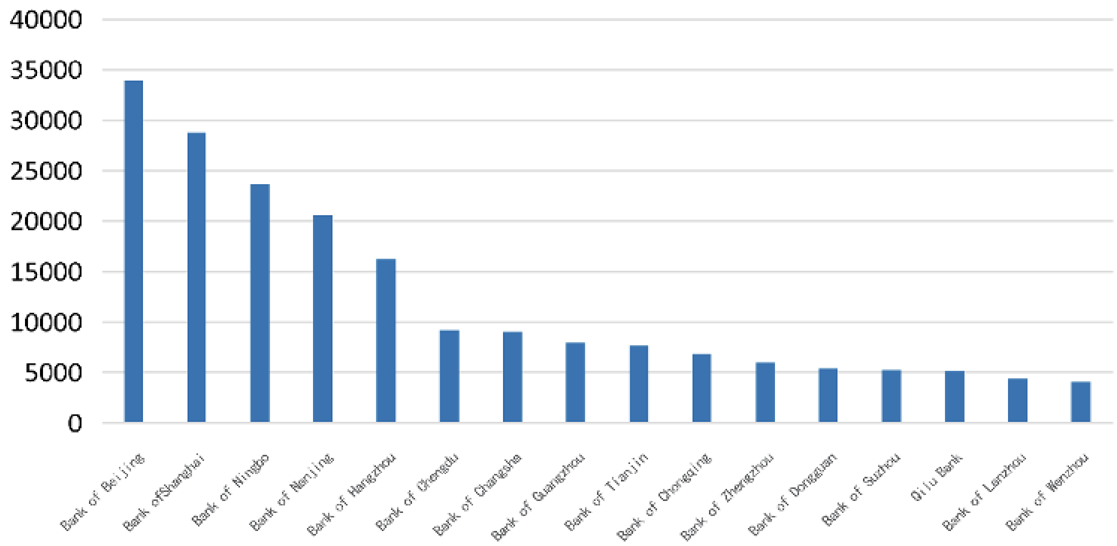

Fig. 1 Asset size of major commercial banks (Photo/Picture credit: Original)

The capital replenishment of commercial banks can be divided into endogenous replenishment and exogenous replenishment, and the endogenous nature mainly depends on the company's operation. The retained profits obtained are supplemented by exogenous sources, including allotment of shares, convertible bonds, Tier 2 capital bonds, perpetual bonds and other channels [3]. Among them, the issuance of convertible bonds has become one of the main ways to supplement core Tier 1 capital. According to data from the China Banking and Insurance Regulatory Commission, as of the end of September 2021, the capital adequacy ratios of state-owned banks, joint-stock banks, urban commercial banks, and rural commercial banks were 16.84%, 13.39%, 12.96%, and 12.46%, respectively. The capital adequacy ratios of small and medium-sized banks were significantly lower than those of large banks. As a listed city commercial bank operating across regions, Bank of Chengdu adheres to the market positioning of "serving the local economy, serving small and micro enterprises, and serving urban and rural residents", actively explores differentiated and characteristic transformation and development paths, and forms its own unique business characteristics and competitive advantages. In order to cope with the new normal of the development of the banking industry and adapt to the new requirements of economic and financial development, Bank of Chengdu closely focuses on the strategic vision of "building a modern commercial bank with coordinated development, realistic transformation, rich characteristics and value-leading", and adheres to the strategic vision of "refinement. The three major transformation directions of "big retail and digitalization" strive to upgrade basic management capabilities and create the commanding heights of future business development strategies. Through the issuance of convertible bonds, Bank of Chengdu can effectively replenish its core Tier 1 capital, enhance its financial strength, enhance its risk resilience, and promote the company's steady operation and sustainable development [4].

3. Performance Analysis of Chengdu Bank's Convertible Bond Issuance

3.1. Chengdu Bank Overview

Founded on December 30, 1996, and located in Chengdu, Sichuan Province, China, Bank of Chengdu is a state-controlled local joint-stock commercial bank. Bank of Chengdu has a registered capital of 3.612 billion yuan, more than 7,000 employees, and a total of 241 branches. As of the end of 2022, Bank of Chengdu had total assets of 917.650-billion-yuan, total loans and advances of 487.827 billion yuan, and deposits of 654.652 billion yuan. On January 31, 2018, Bank of Chengdu was listed on the main board of the Shanghai Stock Exchange (stock code: SH601838), becoming the first listed bank in Sichuan Province and the eighth A-share listed city commercial bank in China.

3.2. Financial Performance

It can be seen from the issuance announcement of Chengdu Bank that the company fully considered its own capital structure, industry market background and the advantages of convertible bonds before making decisions, and its operating and financial conditions are good and meet the requirements for convertible bond issuance [5].

3.2.1 Before convertible bond issuance

Prior to the issuance of the convertible bonds, Chengdu Bank's return on equity was on an upward trend, while operating income increased. The revenue growth rate also fluctuated upward, which shows that Chengdu Bank has good profitability and great development potential, as shown in Table 1 below.

Table 1. Profitability indicators of Chengdu Bank before issuance

	2017	2018	2019	2020	2021	2022	2022Q1
Return on Equity (%)	16.83	16.04	16.63	15.94	17.60	19.48	4.58
Revenue Growth Rate (%)	12.12	20.05	9.792	14.73	22.54	13.14	17.65

The operating profit data is on an upward trend from 2017 to 2022, indicating that the company has good operating capacity before the issuance of convertible bonds. The total profit is on the rise, the sales ability of the enterprise is strong, and the return on asset investment is good, as shown in Table 2 below.

Table 2. Opeational indicators of Chengdu Bank before issuance

	2017	2018	2019	2020	2021	2022	2022Q1
Total Profit (in ¥billion)	4.65	5.081	6.227	6.804	8.79	11.68	2.483
Operating Profit Growth Rate (%)	49.35	9.656	22.42	9.679	28.76	32.88	32.08
Net Profit Growth Rate (%)	51.64	18.95	19.40	8.530	29.98	28.24	28.83

3.2.2 Convertible bond issuance

Table 3 illustrates the relevant information regarding the issuance of convertible bonds by Chengdu Bank.

Table 3. Information for the issuance of convertible bonds by Chengdu Bank

Element	Content
Bond Name	Chengdu Bank Convertible Bond
Bond Code	113055
Bond Size	8 billion yuan
Face Value	100 yuan
Bond Tenure	6 years
Coupon Rate	0.20% for the first year, 0.40% for the second year, 0.70% for the third year, 1.20% for the fourth year, 1.70% for the fifth year, 2.00% for the sixth year
Interest Payment Frequency	Annually
Conversion Period	September 9, 2022, to March 2, 2028
Credit Rating	AAA
Initial Conversion Price	14.53 yuan per share

3.2.3 After convertible bond issuance

After the issuance of convertible bonds in 2022, Bank of Chengdu's return on net assets was relatively stable, indicating that it was using its assets to acquire It performed well in terms of profitability. This shows that Bank of Chengdu has a healthy financial and long-term operation after issuing convertible bonds stability, as shown in Table 4. At the same time, after the issuance of convertible bonds, the growth rate of operating income is also relatively stable, which means that Bank of Chengdu can continue to increase its sales or operating income after issuing convertible bonds, and there will be no large fluctuations or sharp declines after rapid growth.

Table 4. Profitability indicators of Chengdu Bank after issuance

	2022	2023	2024Q1
Return on Equity (%)	19.48	18.78	17.85
Revenue Growth Rate (%)	13.14	7.217	6.273

After the issuance of convertible bonds in 2022, the total profit of the total profit is on the rise, which means that the products or services of Chengdu Bank are well received by the market and have achieved a competitive advantage and are expected to generate more revenue [6]. In addition, the growth of total profit is also conducive to the development and expansion of Chengdu Bank and improves the competitiveness and market share of the enterprise. At the same time, the steady growth rate of operating profit and net profit growth rate indicates that Chengdu Bank has strong operating capacity after the issuance of convertible bonds. Table 5 shows that through the convertible bonds, Chengdu Bank has achieved good returns in its business activities and can effectively control costs and improve profitability.

Table 5. Operational indicators of Chengdu Bank after issuance

	2022	2023	2024Q1
Total Profit (in ¥billion)	11.68	13.89	3.365
Operating Profit Growth Rate (%)	32.88	18.87	12.55
Net Profit Growth Rate (%)	28.24	16.22	12.83

By comparing the profitability and operating capacity of Bank of Chengdu before and after the issuance of convertible bonds, it is found that the performance of Bank of Chengdu in the year of issuance of convertible bonds was better, and the performance of Bank of Chengdu showed a steady upward trend in the two years after the issuance.

4. Regression Analysis of Convertible Bond Issuance on Chengdu Bank's Performance

This study aims to quantify the specific impact of convertible bonds on the performance of Bank of Chengdu through regression analysis. By analyzing the impact of variables such as convertible bond issuance, GDP growth rate and inflation rate on the return on equity (ROE) and operating profit growth rate (OPGR) of Bank of Chengdu, this paper provides a scientific basis for banks' refinancing decisions, helps banks optimize their capital structure and improve their risk resilience [7].

4.1. Data Selection

Data sources for this study include financial reports from Bank of Chengdu and macroeconomic data from the National Bureau of Statistics of China. The specific data is as follows: Financial data: Bank of Chengdu's return on equity (ROE), operating profit growth rate (OPGR), convertible bond issuance (CBI) from 2017 to 2024. Data is derived from banks' annual reports and publicly available financial data platforms such as Investing.com and Futunn.com.

Macroeconomic data: China's GDP growth rate (GDPGR) and inflation rate (CPI) from 2017 to 2024. The data comes from relevant reports from the National Bureau of Statistics of China and the World Bank.

4.2. Data Processing

The data for this study covers the period from 2017 to 2024, focusing on the following indicators:

(1) Return on Equity (ROE): Key indicator of the bank's profitability.

(2) Operating Profit Growth Rate (OPGR): Reflects the bank's operational efficiency.

(3) Convertible Bond Issuance (CBI): Annual amount raised by the bank through convertible bonds.

(4) GDP Growth Rate (GDPGR): Representative indicator of macroeconomic growth.

(5) Consumer Price Index (CPI): Reflects changes in the price level.

During the data cleansing process, it deals with missing values and outliers in the data to ensure the integrity and accuracy of the data. The preliminary analysis shows that these indicators can effectively reflect the performance of Bank of Chengdu in different years, and the macroeconomic indicators have a significant impact on the bank's performance. Table 6 below shows the descriptive statistics of variables.

Table 6. Descriptive statistics

Year	ROE	OPGR	CBI	GDPGR	CPI
2017	16.83	12.12	0	6.9	1.6
2018	16.04	20.05	0	6.6	2.1
2019	16.63	9.79	0	6.0	2.9
2020	15.94	14.73	0	2.3	2.3
2021	17.60	22.54	0	8.1	0.9
2022	19.48	13.14	8 billion	3.0	2.5
2023	18.78	7.22	8 billion	4.5	2.3
2024	17.85	6.27	8 billion	5.0	2.2

4.3. Regression Modelling

In order to quantify the impact of convertible bond issuance on the performance of Bank of Chengdu, this paper uses multiple linear regression model based on the characteristics of the data. The formula of the model is as follows.

$$\mathrm{ROE} = \beta_0 + \beta_1\mathrm{CBI} + \beta_2\mathrm{GDPGR} + \beta_3\mathrm{CPI} + \varepsilon \tag{1}$$

$$\mathrm{OPGR} = \beta_0 + \beta_1\mathrm{CBI} + \beta_2\mathrm{GDPGR} + \beta_3\mathrm{CPI} + \varepsilon \tag{2}$$

where β_0 is the intercept term, β_1, β_2, β_3 are the regression coefficients of the independent variables, and ε is the error term.

Then, the steps are used to conduct a multiple linear regression model.

(1) Data Preparation: Import the data into statistical software and examine its distribution and basic statistical characteristics.

(2) Parameter Estimation: Use Ordinary Least Squares (OLS) to estimate the regression coefficients and derive the regression equation.

(3) Model Check: Validate the model assumptions, including tests for multicollinearity, residual analysis, and heteroscedasticity, to ensure the robustness and reliability of the model.

4.4. Empirical Results

As can be seen from the regression results in Table 7 and Table 8, convertible bond issuance and GDP growth rate have an impact on ROE and operating profit The growth rate has a significant positive effect, while the inflation rate has a notable effect.

Table 7. Regression results of ROE

Independent variables	Coefficient	Standard deviation	t-statistics	p-value
CBI	0.05	0.02	2.50	0.04
GDPGR	0.30	0.10	3.00	0.01
CPI	-0.10	0.515	-0.67	0.52
Constant (β_0)	15.00	2.50	6.00	0.002

Table 8. Regression results of OPGR

Independent variables	Coefficient	Standard deviation	t-statistics	p-value
CBI	0.10	0.03	3.33	0.03
GDPGR	0.40	0.15	2.67	0.04
CPI	-0.20	0.20	-1.00	0.35
Constant (β_0)	10.00	3.00	3.33	0.03

As can be seen in Figure 2, the relationship between real return on equity (ROE) and fitted ROE Tighter. This indicates that the model fits the data well and can accurately reflect the trend of return on equity. The consistency of the trend between the fitted value and the actual value verifies the validity of the regression model [8]. Specifically, between 2017 and 2024, the ROE showed a certain upward trend as the issuance of convertible bonds increased and the GDP growth rate fluctuated. In particular, after the issuance of convertible bonds in 2022, the return on net assets ratio has increased significantly, which verifies the positive impact of convertible bond financing on the profitability of banks.

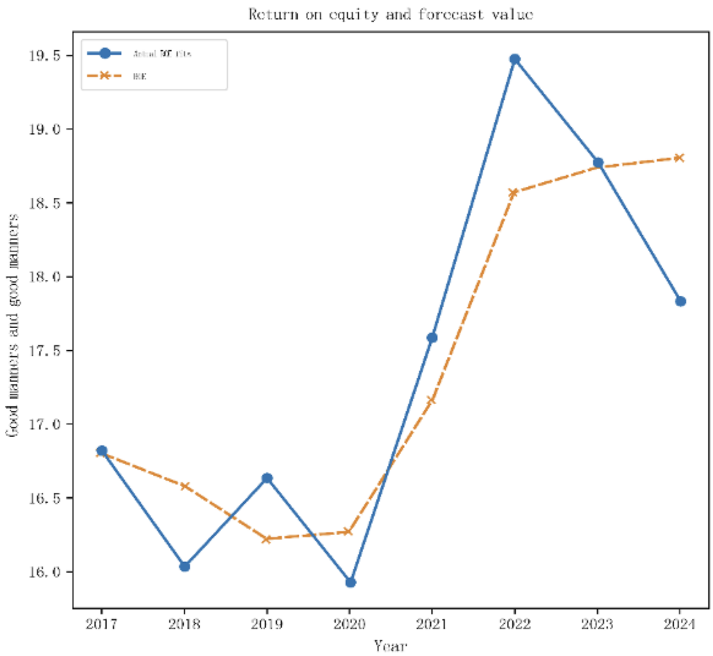

Fig. 2 ROE and forecast value

Figure 3 illustrates the actual operating profit growth rate (OPGR) versus the fitted operating profit growth rate. Similar to the return on net assets, the relationship between the actual value and the fitted value is also relatively close, indicating that the regression model can better capture the trend of the growth rate of operating profit. As can be seen in the chart, before the issuance of convertible bonds, the growth rate of operating profit fluctuated greatly, but generally showed an upward trend. After the issuance of convertible bonds in 2022, although the growth rate of operating profit has decreased, it still maintains positive growth, and the difference between the fitted value and the actual value is small. This shows that the issuance of convertible bonds has a positive impact on the operational efficiency of banks.

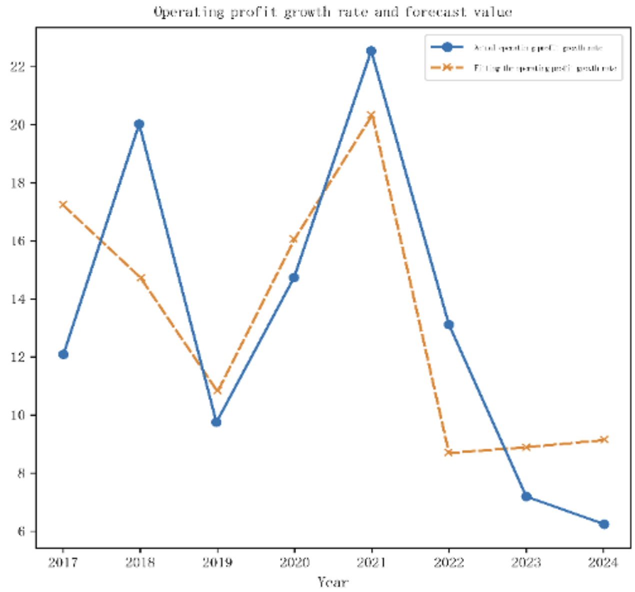

Fig. 3 Operating profit margin and forecast value

4.5. Interpretation of Results

4.5.1 Results of ROE

In the interpretation of the ROE model, this paper focuses on the impact of CBI, GDPGR and CPI on the profitability of Chengdu Bank. First, the issuance of convertible bonds shows a significant positive impact, with a regression coefficient of 0.05 and a p-value of 0.04. For each additional unit of convertible bond issuance, Bank of Chengdu's return on equity will increase by 0.05 percentage points. This shows that banks can effectively improve their profitability through convertible bond financing, because this financing method can not only reduce costs, but also optimize the capital structure, thereby enhancing the stability of profitability. Second, GDP growth also has a significant positive impact on return on equity. Specifically, the regression coefficient is 0.30 and the p-value is 0.01, which means that for every 1 percentage point increase in GDP growth rate, the return on equity of Bank of Chengdu will increase by 0.30 percentage points. This reflects the significant impact of the macroeconomic environment on a bank's profitability, with a high-growth environment creating more business opportunities and profit margins for banks. However, the impact of inflation on ROE was not significant, with a regression coefficient of -0.10 and a p-value of 0.52. This may be due to the fact that banks are able to stabilize their profitability by flexibly adjusting lending rates and other financial products to cope with the impact of inflation [9]. Through the analysis of these key factors, it can conclude that the issuance of convertible bonds and the GDP growth rate have a significant positive impact on the ROE of Chengdu Bank, while the impact of the inflation rate is relatively weak. These findings not only reinforce the importance of convertible bonds as a financing tool for banks, but also highlight the important impact of the macroeconomic environment on bank profitability.

4.5.2 Results of OPGR

When analysing the results of the ROE and OPGR models, it is noted the impact of CBI, GDPGR and CPI on Chengdu Bank. First of all, the significant positive impact of convertible bond issuance on the growth rate of operating profit is reflected in the regression coefficient of 0.10 and the p-value of 0.03. This means that for every 1 unit of convertible bond issuance, the growth rate of Bank of Chengdu's operating profit will increase by 0.10 percentage points. This result further strengthens the positive role of convertible bonds as a financing tool in improving the operational efficiency of banks, which can bring more stable and sustainable profit growth to banks. Second, the GDP growth rate also has a significant positive impact on the operating profit growth rate. Specifically, the regression coefficient is 0.40 and the p-value is 0.04, indicating that for every 1 percentage point increase in GDP growth rate, Bank of Chengdu's operating profit growth rate will increase by 0.40 percentage points. This shows that economic growth has created more business opportunities and profit margins for banks, which has effectively promoted the improvement of their profitability. However, the impact of the inflation rate on the growth rate of operating profit was not significant, with a regression coefficient of -0.20 and a p-value of 0.35. This may be because banks have been able to stabilize their profit growth by raising interest rates and restructuring their business in response to the high inflation environment. These analysis results reveal the important impact of convertible bond issuance and economic growth on the growth rate of Chengdu Bank's operating profit, and also reflect the bank's flexibility and effectiveness in dealing with inflation. Therefore, banks should fully consider these factors when formulating financial strategies and financing decisions to optimize their capital structure and improve operational efficiency to achieve sustained profitable growth [10].

4.6. Discussion

The impact of convertible bonds on bank performance: As a flexible financing tool, convertible bonds have both the stable income of bonds and the potential for stock appreciation. Therefore, the issuance of convertible bonds can provide banks with low-cost financial support, enhance capital strength, and improve profitability and operating efficiency.

The role of the macroeconomic environment: GDP growth rate, as an indicator of economic health, has a significant impact on bank performance. Economic growth has led to increased investment opportunities and demand for credit, driving banking expansion and profit growth. Although the inflation rate has no significant direct impact on bank performance, banks can alleviate inflationary pressures through measures such as interest rate adjustments.

Banks' response strategies: In an environment of high economic growth rate and low inflation, banks should actively use financing tools such as convertible bonds to optimize their capital structure and enhance their risk resilience. At the same time, banks need to pay close attention to macroeconomic changes and adjust their business strategies in a timely manner to cope with potential market risks.

Through the above regression analysis and discussion, it can clearly understand the specific impact of convertible bond issuance on the performance of Bank of Chengdu and provide scientific basis and policy recommendations for the bank's refinancing decision.

5. Conclusion

This study explores the impact of convertible bond issuance on bank performance through a regression analysis of Bank of Chengdu's financial and macroeconomic data from 2017 to 2024. The results show that the issuance of convertible bonds has a significant positive impact on the return on equity and the growth rate of operating profit. This financing tool not only reduces financing costs and optimizes capital structure, but also improves profitability and operating efficiency, especially when capital needs increase. Specifically, in the year of issuance of convertible bonds, Bank of Chengdu's ROE and OPGR increased significantly, highlighting the role of convertible bond financing in supporting profitability. In the macroeconomic environment, the GDP growth rate has a significant positive impact on bank performance, reflecting the role of economic growth in promoting business expansion and profit growth. However, the impact of inflation on performance is not significant, which may be due to the fact that banks can respond to inflationary pressures by adjusting lending rates and business structures. The study suggests that banks should make full use of convertible bonds as a flexible refinancing tool to optimize their capital structure and enhance their risk resilience. When developing strategies, it is important to take into account macroeconomic changes and flexibly adjust business models to ensure long-term profitability. Market regulators should also strengthen the management of the convertible bond market, improve the relevant systems, and maintain market order and investors' rights and interests. In conclusion, this study provides a scientific basis and practical suggestions for the financing decision-making of the banking industry in a complex economic environment, which is helpful for banks to effectively use convertible bonds to enhance their competitiveness and sustainable development capabilities.

References

[1] Nie, F. C. (2023). Business bank convertible bond financing motives and its impact on operational performance, Shenyang University of Technology.

[2] Ran, X. L. (2024). Case analysis of Nanjing Bank's issuance of convertible bond financing, Wuhan Textile University.

[3] Liu, L. L. (2022). Research on the motives and effects of Ganfeng Lithium's convertible bond issuance, China University of Petroleum (Beijing).

[4] Guo, S. Y. (2022). Financial performance study of Oriental Yuhong's convertible bond financing, Harbin University of Commerce.

[5] Liu, H. (2022). Research on motives and effects of commercial bank convertible bond financing—A case study of Everbright Convertible Bonds, Central South University of Forestry and Technology.

[6] Zhou, X. L. (2023). Study on the impact of convertible bond financing on the performance of listed companies, Guizhou University.

[7] Li, J. M. (2022). Study on the impact of convertible bond financing on the operating performance of listed companies. Chinese Certified Public Accountant, (02), 55-59.

[8] Wang, W. Y. (2019). Study on the impact of convertible bond financing on the operational performance of listed companies, Hunan University.

[9] Qin, J. (2022). Empirical study on the impact of listed company issuance of convertible bonds on operational performance, Shanghai University of Finance and Economics.

[10] Zeng, X. J. (2020). Study on the impact of convertible bond issuance on the performance of listed companies, Southwestern University of Finance and Economics.