The Problems of Capital Structure and Financial Leverage Effect of HHKG

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Abstract. The capital structure is the key point that enterprises need to pay attention to in the process of operation. The capital structure of aviation enterprises is different from that of other industries due to the particularity of the industry. Based on the elaboration of domestic and foreign literature on capital structure, this paper analyzes the shareholders’ information and equity structure of HHKG, and further analyzes the existing problems of the capital structure of HHKG through asset-liability ratio and equity capital ratio. Combining the short-term and long-term liabilities, this paper analyzes the solvency ability of HHKG and the excess financial risks it faces, and puts forward some measures to optimize the capital structure of HHKG and prevent financial analysis.

1 Introduction

Capital operation refers to the process of optimizing allocation and effective use through investment and financing, asset restructuring and property rights transaction, so as to maximize capital appreciation. It is a high-risk and high-return activity that pays attention to the liquidity of capital, the control and use of capital, and tries to avoid operational risks through the combination of capital. Its purpose is to improve the operational efficiency of assets through optimal allocation to ensure continuous capital appreciation.

Kim and Wu (1988) found that inflation has a positive effect on corporate debt. When inflation is high, companies need to issue bonds to fight inflation. When inflation is low, companies need more debt to protect themselves against financial risk \[1\]. Jalilvand and Harris (1984) found that the speed of adjustment was significantly affected by enterprise size, market interest, stock price and other factors in the process of capital structure adjustment \[2\]. Innovation in investment and retained earnings will have an impact on capital structure to varying degrees. Harvey (2004) believed that capital structure affects corporate performance. There is a two-way causal relationship \[3\]. Rocca et al. (2014) believed that studying the relationship between capital structure and diversification can expand our understanding of financing behavior and corporate performance \[4\].

Christopher F. Baum et al. (2017) found that the risk plays an important role in estimating the adjustment of the firm’s capital structure \[5\]. Using eighteen years of panel data, Apalak Khatua (2017) found a general trend towards delegating, reduced access to deficit financing, and higher costs of debt financing for group-affiliated firms \[6\]. Costas Lambrinoudakis et al. (2019) tested one of the main predictions of the financial flexibility paradigm, that expectations about future firm-specific investment shocks affect the firm’s leverage \[7\]. Costas Lambrinoudakis (2016) explored the effect of financial development on corporate capital structure and the tightness of financial constraints that firms face \[8\]. The driving force of convergence is financial development, which positively affects the firms’ leverage ratio. For enterprises with relatively high degree of ownership concentration, the ownership is in the hands of minority shareholders. In order to ensure the stable development of enterprises, shareholders will consider less expensive debt financing. Enterprises with high asset-liability ratio face the problem of poor solvency. Enterprises should give priority to the internal source of funds as the main financing channels \[9\]. Enterprises should pay close attention to the irrationality of the capital structure of listed companies and optimize it \[10\].
2 The Basic Information of Capital Operation in HHKG

The capital operation modes mainly include bank-enterprise cooperation and bond issuance. Listing financing mode. There are four modes: listed financing mode and listed financing mode in Chinese airlines. In recent years, China's aviation industry has realized the expansion of enterprise scale and further improvement of route network through the above capital operation modes. And the capital from the capital market meets the needs of the rapid development of enterprises.

HHKG has been operating safely for 26 consecutive years, with a total of more than 7 million flight hours. Since 1993, HHKG has a young fleet of luxury aircraft mainly composed of Boeing 737, 787 and airbus 330 and 350 series. In 2018, HHKG and its subsidiary operating domestic and international routes more than 2000, among them, the nearly 1800 domestic routes, international routes 244, routes covering Asia, Europe, North America and Oceania, shipping outside the 63 cities. Here's the detail of funding in capital market.

| Table 1. The Main Information of Financing. |
|---------------------------------------------|
| **Financing modes** | **Amount** |
| 1997 | Issuing b shares | $ 31,420,000 |
| 1999 | bonds | $ 350,000,000 |
| 2000 | Bank loans | $ 80,000,000 |
| 2001 | Bank loans | $ 250,000,000 |
| 2005 | Financing lease | Right to Two 737-300qc |
| 2012 | bonds | ¥1,500,000,000 |
| 2015 | bonds | ¥1,600,000,000 |
| 2017 | Bank loans | ¥5,000,000,000 |
| 2018 | Bank loanst | ¥1,400,000,000 |

In addition to issuing stocks, HHKG issued a lot of corporate bonds. The pressure to repay is exacerbated by heavy debt financing. Debt financing will also bring unreasonable capital structure, which will lead to business risks and financial risks.

3 The Problems with the Capital Structure in HHKG

3.1 The Information about Shareholders and the Equity Structure

Grand China airlines ltd. held 4,080,167,580 shares, or 24.28%, as of March 31, 2019. Haikou meilan international airport co., ltd. holds 862,848,902 shares, with a shareholding ratio of 5.13%. These are all tradable a-shares held by state-owned enterprises. Haikou branch of Shanghai pudong development bank co., LTD., hna group co., LTD., Yangtze river leasing co., LTD., and China securities and finance co., ltd. hold 4%, 3.53%, 3.08% and 2.97 respectively.

The equity structure is shown below.

| Table 2. The Equity Structure. |
|-------------------------------|
| **Shares constitute** | **2018.12.31** |
| (ten thousand shares) | | |
| Total equity | 1,680,612 |
| Circulation A shares | 1,643,600 |
| Restricted A shares | 67 |
| Circulation B shares | 36,945 |
3.2 The Analysis of Debt Capital

The overall asset-liability ratio of HHKG showed a downward trend nearly five years. In 2014, it reached 73.99%. Then it was reduced to 54.18% after asset processing in 2016. It is relatively stable in 2017-2019. The following is the basic information of asset-liability ratio nearly five years about four listed companies of the aviation industry.

Table 3. The Basic Information of Asset-Liability Ratio.

| listed companies in the aviation industry | 2014.12.31 | 2015.12.31 | 2016.12.31 | 2017.12.31 | 2018.12.31 | 2019.03.31 |
|------------------------------------------|------------|------------|------------|------------|------------|------------|
| HHKG                                     | 73.992%    | 69.242%    | 54.182%    | 62.524%    | 66.420%    | 65.75%     |
| DFHK                                     | 81.970%    | 80.762%    | 76.151%    | 75.153%    | 74.932%    | 78.745%    |
| NFHK                                     | 76.661%    | 73.384%    | 72.709%    | 71.527%    | 68.303%    | 73.905%    |
| ZGHK                                     | 71.632%    | 68.838%    | 65.879%    | 59.727%    | 58.740%    | 65.438%    |

The following is a descriptive statistical table of the asset-liability ratios of the four listed companies in the aviation industry. The maximum value is 81.970%. This is an excessive asset-liability ratio. The minimum value is 54.182%. This asset-liability ratio is relatively safe. The liability risks of enterprises are under control. From the average and median values, the asset-liability ratio of listed companies in the aviation industry is higher than manufacturing enterprises. It is determined by the characteristics of the aviation industry.

Table 4. The Descriptive Statistical Table of Asset-Liability Ratio.

| listed companies in the aviation industry | minimum   | average   | median    | maximum  |
|------------------------------------------|-----------|-----------|-----------|----------|
| HHKG                                     | 54.182%   | 65.352%   | 66.085%   | 73.992%  |
| DFHK                                     | 74.932%   | 77.952%   | 77.448%   | 81.970%  |
| NFHK                                     | 68.303%   | 72.748%   | 73.047%   | 76.661%  |
| ZGHK                                     | 58.740%   | 65.042%   | 65.659%   | 71.632%  |

3.3 The Analysis of Equity Capital

Equity capital was low in 2014. Over the past three years, equity capital has been around 35%. Here's basic information of the shareholder's equity ratio.

Table 5. The Basic Information of Equity Ratio.

|                      | 2014.12.31 | 2015.12.31 | 2016.12.31 | 2017.12.31 | 2018.12.31 | 2019.03.31 |
|----------------------|------------|------------|------------|------------|------------|------------|
| equity ratio         | 26.01%     | 30.76%     | 45.82%     | 37.48%     | 33.58%     | 34.25%     |

In the past five years, the overall capital structure is changing. From 26.01% of equity capital in 2014 to the present stable state, it indicates that the financing mode of the company is gradually optimized in the development process.
3.4 The Debt Structure Analysis

The HHKG's current liability ratio remains below 45%. It climbed to 55.25 percent in 2017. In the past two years, the company's current liabilities have undergone great changes. Relative to long-term liabilities, it is a hefty 92%. This means that once short-term debt matures, the company faces the financial risk of not being able to repay the debt on time. This is fatal to the development of the company. Here is the comparative result of current liabilities and long-term liabilities.

Table 6. The Comparative Results of Current Liabilities and Long-Term Liabilities.

| Time       | Total liabilities (Ten thousand yuan) | Current liabilities | Long-term liabilities |
|------------|---------------------------------------|---------------------|-----------------------|
|            |                                       | amount              | proportion            | amount              | proportion            |
| HHKG       |                                       |                     |                       |                     |                       |
| 2014.12.31 | 9,025,729.60                          | 3,854,599.90        | 42.71%                | 5,171,129.70        | 57.29%                |
| 2015.12.31 | 8,681,678.50                          | 2,972,781.70        | 34.24%                | 5,708,896.80        | 65.76%                |
| 2016.12.31 | 8,026,786.00                          | 3,287,466.80        | 40.96%                | 4,739,319.20        | 59.04%                |
| 2017.12.31 | 12,339,056.90                         | 6,817,758.70        | 55.25%                | 5,521,298.20        | 44.75%                |
| 2018.12.31 | 13,598,489.50                         | 12,566,343.40       | 92.41%                | 1,032,146.10        | 7.59%                 |
| 2019.03.31 | 13,374,201.90                         | 12,372,800.70       | 92.51%                | 1,001,401.20        | 7.49%                 |

3.5 The Debt Paying Ability Analysis

HHKG's current ratio and quick ratio maintained at 80% from 2014 to 2016, indicating that current assets are not enough to repay short-term liabilities. By the end of 2018, the current ratio and quick ratio had been reduced to 43%, indicating that HHKG's financial situation was further deteriorating, its solvency was weakening. HHKG faces great financial risks.

Table 7. The Basic Information of Current Ratio And Quick Ratio.

|                | 2014.12.31 | 2015.12.31 | 2016.12.31 | 2017.12.31 | 2018.12.31 | 2019.03.31 |
|----------------|------------|------------|------------|------------|------------|------------|
| Current ratio  | 0.747      | 0.792      | 0.898      | 0.632      | 0.439      | 0.451      |
| Quick ratio    | 0.745      | 0.791      | 0.898      | 0.628      | 0.437      | 0.449      |

4 The Analysis of Financial Leverage Effect of Capital Operation in HHKG

The financial leverage coefficient refers to the multiple of the change rate of profit after tax per share of common stock relative to the change rate of profit before interest and tax, also known as the degree
of financial leverage, which is usually used to reflect the size and effect of financial leverage, and to evaluate the size of enterprise financial risk. Here's the calculation result of financial leverage coefficient of HHKG in recent five year.

| Table 8. The Results of Financial Leverage Coefficient. |
|----------------------------------------------------------|
|               | EPS   | EBIT             | DFL   |
| 2014.12.31    | 0.213 | 6 947 777 000    | ———  |
| 2015.12.31    | 0.246 | 7 544 333 000    | 1.70  |
| 2016.12.31    | 0.210 | 7 221 320 000    | 3.83  |
| 2017.12.31    | 0.182 | 9 054 132 000    | 0.76  |
| 2018.12.31    | -0.230| -287 382 000     | ———  |
| 2019.03.31    | 0.068 | 2 176 529 000    | 3.87  |

The greater the financial leverage coefficient, the greater the financial leverage, the greater the financial risk. The smaller the financial leverage coefficient, the smaller the financial leverage, the smaller the financial risk. The financial leverage coefficient is 1.70 in 2015. The financial risks are higher in 2016 than in 2015.

When the financial leverage coefficient is less than 1, it indicates that the enterprise has greater operational risk, and the financial leverage coefficient no longer has practical explanatory power. However, in 2018, the HHKG's earnings per share are negative, and the profit before interest and tax is also negative, indicating that the enterprise is facing great operational risks. At this time, the financial leverage coefficient has no reference value. In the first quarter of 2019, the HHKG made some progress in business development. Earnings per share rose to 4.38 and the profit before interest and tax is positive.

Based on the comparison between the total assets interest rate before tax, the debt interest rate and the return on equity, it can be seen that HHKG has a large operating risk. Here's the result of the total assets interest rate before tax, the debt interest rate and the return on equity.

| Table 9. The Results of Financial Leverage Indicators. |
|-------------------------------------------------------|
| Profit margin on total assets before tax and interest | Bank loan interest rate in the same period |
|                                                      | Short-term loan interest rate: within one year (including one year) | Return on equity |
| 2016.12.31   | 4.69%   | 4.35% | 7.67% |
| 2017.12.31   | 3.82%   | 4.35% | 6.44% |
| 2018.12.31   | 3.53%   | 4.35% | -7.12% |
| 2019.03.31   | 4.45%   | 4.35% | 2.33% |

HHKG's pre-tax profit margin of total assets in 2016 is greater than the debt interest rate, and the financial leverage effect is positive. However, the pre-tax profit margin of total assets in 2017-2018 is smaller than the debt interest rate, which means that the financial leverage effect generated is negative. Enterprises should try to avoid financing through bank loans. According to the statistics on March 31, 2019, the pre-tax profit margin of total assets in the first three months of 2019 has improved, which indicates that the company is in the process of steady development. Although HHKG has controlled the asset-liability ratio in the past three years, the proportion of debt capital should be controlled within a certain range to better prevent the financial analysis faced by enterprises.
5 Summary

In the process of issuing stocks, bonds and bank loans, HHKG has not conducted risk assessment and control. As a result, the company cannot repay the loan in time under the circumstance of operating problems, which leads to the high asset-liability ratio and the lower current ratio and quick ratio than the normal level. Derivative financial risks and operating risks drive down the stock price and bring huge losses to shareholders.

(1) Optimize capital structure by disposing of non-performing assets

HHKG has more non-performing assets. Assets should be disposed if they cannot be used to cope with the risk that short-term debts cannot be repaid, so as to help enterprises tide over difficulties.

(2) Financing through equity financing

Although HHKG's share price is at a low level, the issuance of shares will ease the company's repayment burden in the short term. Due to the poor management of the company, the success of the stock issue will depend on the determination of the company's management to reform the company.

(3) Perform an asset swap or debt restructuring

At this stage, the company asset replacement or debt restructuring will be a better way. It not only helps the company to relieve the pressure of repayment, but also helps to play a synergistic role among stakeholders and promote better cooperation and development among enterprises.

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