

Research on the Application of Asset Securitization Financing Model of Civil Airport in China—Taking the construction of Tianjin Binhai International Airport Terminal T3 as an example

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Abstract: As an important part of urban public infrastructure, the civil airport has developed considerably in recent years. However, as the economy slows down and capital enthusiasm drops, the question of whether the airport construction project will be hindered and how to solve it after being hindered is an urgent one. Taking Tianjin Binhai international airport as an example, in order to solve the problem of investment and financing, for the analysis of its status quo, put forward using the asset securitization financing solutions, and analyzes the feasibility of the scheme, and hope to solve a difficult at the same time, investment and financing problems of the civil airport in other similar situations.

1. Introduction

With the continuous improvement of China's economic level in recent years, the number of civil airports in China is growing. As a relatively fast transportation mode in the modern transportation system, air transportation has been widely welcomed. As an essential part of the national comprehensive transportation system, the civil airport has a strong economic and social effect, which is embodied in its economic pulling effect on the radiation area and the clustering effect of capital, talents, and trade. According to Airport Council International's research, each million passenger throughput of an airport can generate an economic benefit of 130 million US dollars and provide 2500 related jobs. Studies by Chinese scholars show that each million passenger throughput of Chinese airports can produce an economic effect of 1.81 billion yuan and provide more than 5,300 related jobs^[1]. Civil airport, as urban public infrastructure, has noticeable positive external effects. The National Development and Reform Commission of China and the Civil Aviation Administration of China jointly issued the "National Civil Transport Airport Layout Plan" to solve the problem of the insufficient total number of airports and unreasonable layout in China^[2].

However, civil airports' construction process requires a large amount of capital investment, making it difficult to achieve profitability in a short period, and the internal financing capacity is seriously insufficient. As of 2017, there were 220 civil airports in China, of which nearly three-quarters were losing money^[3]. However, its external financing methods are relatively simple, and it is challenging to raise nearly 10 billion project funds mainly by relying on traditional civil aviation funds and syndicated loans. A small amount of scattered investment cannot support the airport to complete the reconstruction and expansion task^[4]. Therefore, how to break through the investment and financing dilemma and how to innovate the investment and financing model of China's civil airports is an urgent problem for us to solve.

Asset securitization refers to the process of issuing asset-backed securities based on credit enhancement through structured design based on the future cash flow generated by the underlying assets as repayment support^[5]. As a financial innovation product, asset securitization originated in the United States in the 1970s, but its application started late in China. In 2013, the State Council of China issued the Guiding Opinions on Financial Support for Economic Structural Adjustment and Transformation and Upgrading, which required the gradual promotion of the normal development of

credit asset securitization, marking that the development of asset securitization in China officially entered an accelerated period^[6]. Asset securitization has the advantages of being less affected by the environment, reducing financing cost, optimizing asset structure, and improving profitability^[7]. It can be regarded as an effective solution to China's investment and financing difficulties' private aircraft sites.

The strategy of "One Belt And One Road" and "Beijing-Tianjin-Hebei Integration" introduced by China has brought Tianjin a historic development opportunity. Tianjin Airport has also built T3 Terminal in line with the current situation. Thus taking Tianjin Binhai international airport as an example, in order to solve the financing problem, for the analysis of its status quo, put forward using the asset securitization financing solutions, and analyzes the feasibility of the scheme, and hope to solve a difficult at the same time, investment and financing problems of the civil airport in other similar situations.

2. Problem analysis

2.1 Insufficient internal financing capacity

The airport's operating performance mainly depends on the passenger throughput, cargo throughput, and take-off and landing sorties three aspects to evaluate^[8]. From 2014 to 2018, the average annual growth rate of airport transport sorties was 16.34%, passenger throughput 18.72%, and cargo throughput 4.13%, both of which were much higher than the national average. In 2018, the passenger throughput of Tianjin Binhai International Airport increased by 12.3% year on year, much higher than other similar large airports, and there is still room for an increase in the future, which also proves the objective necessity of the renovation and expansion of Tianjin Airport T3 Terminal.

As we can be seen from Table 1, Tianjin airport from 2015 to 2017, net profit is negative, always from the loss to the loss of 350 million, 2016, 2015 in 480 million to 130 million loss in 2017, despite the loss reduces gradually. The current situation of Tianjin airport earnings, the future for a long time will still be in a state of loss-making, which inevitably leads to Tianjin airport has insufficient funds. The background of the T3 terminal building project funded out of enterprise internal financing ratio may be small, which mostly depends on external finance. It makes it more challenging to raise money. In addition, it can be seen from Table 2 that the average asset-liability ratio of Tianjin Airport from 2015 to 2017 is as high as 65%. According to relevant data, the average level of the airport industry's asset-liability ratio is about 22%, which is much higher than the average level of the industry. Most of the liabilities are from the bank loans during the construction of Terminal T2. To solve the financing difficulties of Terminal T3, the continued borrowing despite the airport's operating strength is bound to harm the sustainable development of Tianjin Airport in the future. Therefore, it can be seen that the capital structure of Tianjin Airport is not reasonable enough.

Table 1: Profit Statement of Tianjin Airport from 2015 to 2017 (Unit: Yuan)

| Project | 2015 | 2016 | 2017 |
|------------------------|----------------------|----------------|----------------|
| Gross operating income | 759889058.41 | 922856664.06 | 1129787962.85 |
| Total operating cost | End at 1310427166.71 | 1352774414.95 | 1337627279.37 |
| Operating profit | - 535454028.49 | - 422897848.94 | - 122647508.95 |
| Net profit | - 487103097.29 | - 351477086.87 | - 135706787.98 |

Source: collated from the audit report of Tianjin Binhai International Airport

Table 2: Balance Sheet of Tianjin Airport from 2015 to 2017 (Unit: Yuan)

| Project | 2015 | 2016 | 2017 |
|-----------------------|---------------|---------------|---------------|
| assets | 7948095553.49 | 8142059319.27 | 7617518946.51 |
| liabilities | 5198087533.06 | 5325140178.06 | 4739127216.40 |
| Asset-liability ratio | 65.40% | 65.40% | 62.21% |

Source: collated from the audit report of Tianjin Binhai International Airport

2.2 Insufficient state subsidies

Tianjin Airport's T3 terminal's construction is mostly financed by state investment, including civil aviation development funds and subsidies from the Tianjin municipal government. The civil aviation development fund's primary source is the airport construction fee charged by the General Administration of Civil Aviation of China. The property of airports' public goods determines that the government becomes the main force of investment in airport construction. However, the civil aviation development fund is subsidized by airports all over the country, and it is increasingly inclined to small and medium-sized remote airports^[9]. The national investment part of the Tianjin Airport T3 Terminal construction project has not been put in place, and it is unknown whether the final cut will continue and whether it can be put in place in time. In addition, the total investment of Tianjin Airport T3 Terminal Construction Project is 21 billion yuan, of which only 12.6 billion yuan will be applied for the Civil Aviation Development Fund of Civil Aviation Administration of China and Tianjin Municipal Government subsidy, and the other 8.4 billion yuan will be settled by Tianjin Airport itself.

In this case, Tianjin airport will face a variety of difficulties. If Tianjin Airport does not have sufficient existing funds, the project schedule may be delayed, resulting in potential cost losses and even the risk of capital chain rupture. For this predicament, Tianjin Airport must make adequate preparations in advance, increase the proportion of self-raised funds, improve financial independence, reduce the dependence on national financial support, enhance the business and weaken its policy. In the long run, this is also conducive to enterprises' attempts and innovations in financing models^[10].

2.3 The cost of a single financing method is high

Tianjin airport, as a state-owned enterprise, its financing mode is relatively conservative. Bank loan has been the first choice of civil airport financing^[11]. However, due to the aggravation of the world trade friction and the influence of the novel coronavirus epidemic, China's economy will face downward pressure for a long time. Banks are more cautious about the research of project financing risks, capital enthusiasm decreases, and credit scale shrinks. However, for such a big project as the reconstruction and expansion of Tianjin Airport, banks are not willing to provide high loans, and even if they do, the interest return will be very high.

It is assumed that the reconstruction projects of Tianjin airport shortfall of 8.4 billion yuan will be filled with bank loans. The interest rate published by the People's Bank of China "five years" medium and long-term loan datum interest rate 4.90%, reimbursement deadline for 20 years (that is, the project operation period), the payment way as the principal and interest waiting for the forehead. The interest payments amounted to more than 3.9 billion yuan a year, and at the beginning of the financial cost is 400 million yuan. As can be seen from the previous Table 1, the financial burden caused by this financing mode is too heavy when the net profit has been losing money for three consecutive years, and the uncertain expected net profit will hardly relieve such enormous pressure of principal and interest service. Based on the airport, bank loans must actively develop diversified financing channels to avoid the "debt servicing - liability" vicious cycle.

3. Suggestions for solution

The airport is a typical industry with high investment and a long payback period. Although the airport's construction cost is very high in the early stage, the airport can achieve stable operating cash inflow in the future, which makes it possible for the airport to complete the asset-backed securities. In July 2015, Haikou Meilan Airport, a subsidiary of HNA, completed China's first airport asset-backed securities product, customizing the asset securitization product based on the operating cash flow generated from the airport's aviation income, using the raised funds for the airport's reconstruction and expansion, and taking the future cash flow of the airport as repayment guarantee^[12]. The asset securitization financing method can realize the expected income of enterprises, improve the efficiency of asset use, and shorten the cycle of capital withdrawal and reduce financing costs. Therefore, this paper suggests that Tianjin Binhai International Airport adopt an asset securitization financing method to solve the financing difficulties.

3.1 There are many securitized assets in airports

Tianjin Binhai International Airport charges can be divided into aviation service charges, non-aviation service charges, and ground service charges. All kinds of airport charge rights are the essential assets of asset securitization, which can better finance funds through asset securitization. The securitization of the collection of acceptable assets can reduce the asset-liability ratio, increase the return on equity, realize the future assets in advance, improve the enterprise's capital liquidity, and achieve its purpose off-balance-sheet financing according to the needs of the airport. Many types of assets can be securitized in airports, as detailed in Table 3, which forms the basis for asset securitization in airport enterprises.

Table 3: Asset classification of securitizing assets in civil airports

| Type | Specific form |
|-----------------------------------|---|
| Air service charges | Starting and landing fee, parking fee, passenger service fee, passenger baggage security fee, etc |
| Charges for non-aviation services | First-class and business class lounge, office rental, check-in counter rental, etc |
| Ground Charges | Stowage communication expense, apron service charge, aircraft service charge, etc |
| Interbusiness accounts receivable | Entrusted loans between enterprises, accounts receivable between enterprises, etc |
| Real estate assets or gains | Commercial real estate, industrial real estate and other real estate fund share, real estate rental income generated, etc |
| Other Underlying Assets | Airline BSP ticket revenue, property management fees, etc |

Source: collated from the Internet-related information

3.2 Airport securitize assets are of relatively high quality

Due to the particular positioning of the airport's public infrastructure, the assets that can be securitized in the airport are of high quality, and the cash flow generated by the assets in the future is stable and can be predicted accurately. The Civil Aviation Administration of China and settlement center's domestic aviation revenue is responsible for the collection and settlement, international aviation revenue by China airlines and settlement center. It is responsible for the collection and settlement with a nature of the government law enforcement unit having two to the power of airlines' credit rating. Second, non-aviation business charge for airport terminal and merchants and the perimeter of the airport aviation enterprise, due to the airport with the area of land ownership, responsible for providing network services and supply of energy, so merchants the possibility of very low on money, overdue payments will be cut off power supply ways to recycle.

With the beneficial right of trust as the essential asset, asset securitization overcomes the difficulty of asset securitization of airline service operating income, expands the business category of asset securitization of sizeable public infrastructure such as airports, thus timely solves part of the fund gap of airport construction and improves the overall asset utilization efficiency of airports. In addition, the airport can securitize a large number of assets and high quality, through the asset securitization financing is an option of airport financing construction.

4. Conclusion

The T3 Terminal construction of Tianjin Binhai International Airport is an important hub for Tianjin's future development and a full display of its external appearance. The use of advanced financing mode and management experience in the construction requirements of the T3 Terminal construction project and the future development of Tianjin enterprises as an example. Because of the above factors combined with the plight, we should be targeted to solve the problem. First of all, we should fully emphasize the vital role of airport expansion in personnel, information exchange, and regional economic development, which altogether emphasizes the necessity of Tianjin's development

and even the "One Belt And One Road" initiative. It strives for more municipal financial subsidies and civil aviation development fund support ^[13]; Secondly, commercial bank loans are taken as an option, but the financing mode is regarded as multiple choice. While solving part of the capital needs through commercial banks, it actively explores foreign financing channels. While reducing financing costs, it absorbs advanced experience to help internationalize the airport management capacity and adapt to the long-term development in the future.

Finally, a long way to go for financing experience of ascension, the project in the process of implementation should be a turning point, which seizes the opportunity to look for more financing channels to choose. Professional enterprise is known to do professional work, which shares the airport construction management ability, financial pressure. The operation periods could improve the airport work's overall efficiency to cultivate an aggressive, innovative financial management team. Diversified and targeted financing mode is the template of Tianjin Airport's future financing mode, and should also become an indispensable financing idea for similar large airports in China in the future domestic and international challenges.

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