

# Privatization Framework and Chinese Infrastructure: Sanya Phoenix Airport Case Study

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**Abstract:** This manuscript delves into the privatization paradigm within Chinese infrastructure, utilizing the Sanya Phoenix Airport as a pivotal case study. It scrutinizes the implications of privatization theory alongside the residual effects of the planned economy on the operational efficacy and challenges of infrastructure projects. Through an incisive literature review and a detailed examination of the airport's evolution under HNA Group's privatized stewardship, this study elucidates the enhancements in operational efficiency juxtaposed with enduring challenges, notably financial duress. The analysis furnishes nuanced insights into the ramifications of privatization for infrastructure development in China, proffering cogent policy and strategic recommendations to foster sustainable advancement.

**Keywords:** Privatization, Infrastructure Development, Chinese Economy, Sanya Phoenix Airport, Property Rights, Market Competition, Regulatory Policies, Planned Economy Legacy, Operational Efficiency, Financial Challenges.

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## 1. Introduction

The development of infrastructure projects in China has long been a focus of attention for academic circle and policy makers. Over the past four decades since the reform and opening up, China's infrastructure development has achieved world-renowned successes. Nonetheless, these achievements have also been accompanied by a series of problems, such as mismanagement and inefficiency of enterprises caused by state-owned capital holding. In order to analyse these problems in depth, this paper selects privatisation theory and the legacy of the planned economy system as the conceptual framework, and uses the development of Sanya Phoenix Airport as a case study for analysis.

The structure of this paper is as follows. The paper first reviews the literature on privatisation theory and the legacy of the planned economy system, and subsequently analyses the development process of Sanya Phoenix Airport and the problems it encounters at different stages. Then, based on secondary data such as news reports, internet reports and government announcements, the paper uses this conceptual framework to illuminate the development of Sanya Phoenix Airport, mainly focusing on the challenges it faced during the takeover, reform and bankruptcy restructuring process of the HNA Group. Finally, the paper summaries the development issues of Sanya Phoenix Airport and makes some recommendations for a more sustainable and robust future development. The aim of this paper is to provide insights and lessons for a more in-depth study of the development issues of infrastructure projects in China through the case study of Sanya Phoenix Airport.

## 2. Literature Review

In this section, this paper reviews and summarises the research of scholars on the theoretical framework of privatisation. The theoretical framework of privatisation concentrates on issues such as property rights, market competition, and regulatory and policy regimes, with the aim to explaining and exploring the issues and challenges of

infrastructure project development.

### Property Rights Theory

Property rights theory (Demsetz, 1974) highlights the impact of property rights arrangements on resource allocation and economic efficiency. In the field of infrastructure, the issue of property rights is a central challenge to the privatisation process. Scholars have focused on the impact of property rights changes on the efficiency, cost and service quality of infrastructure projects, as well as the difficulties and responses to property rights reform (Dong & Putterman, 2002; Li et al., 2012).

### Market Competition And Monopoly

The issue of market competition and monopoly in the privatisation process has pivotal implications for the development of infrastructure projects (Kikeri, 2022; Yang et al., 2008). Efforts has been made to how to balance market competition and monopoly in order to achieve efficiency and equity in infrastructure projects (KWAN, 2020; Ngan, 2010). In addition, some studies have pointed out that there is a trade-off between market competition and government regulation in infrastructure projects (Lam, 2005; Li et al., 2012).

### Regulatory And Policy Regimes

Regulatory and policy regimes play an crucial role in the development of infrastructure projects during the privatisation process (Xu, 2011; Yang et al., 2008). Scholars have explored on the role and role of government in the privatisation process and how to construct an appropriate policy institutional framework to facilitate the sustainable development of infrastructure projects (Lavigne, 1995; Tjia, 2015).

### Empirical Studies of Infrastructure Development in China

Empirical studies on infrastructure development in China have focused on the effects and impacts of privatisation reforms. Kikeri (2022) discover that privatisation has contributed to a certain extent to the efficiency and performance of infrastructure by comparing the differences in productivity, operating costs and service quality between privatisation and state-owned enterprises. Chi-Lok(2009) analyse the theoretical and empirical perspectives on the process and impact of airport privatisation in China.

Meanwhile, Tjia (2015) provides an empirical case study of infrastructure privatisation by examining the process and results of China's railway reform.

#### Application of The Privatization Theoretical Framework in Infrastructure Projects in China

Based on the privatisation theoretical framework, scholars have focused on the impact of property rights changes, market competition and monopoly, and regulatory and policy regimes when studying the development of infrastructure projects in China. For example, Yang(2009) focus on the effects of various factors such as market competition, policy regime and management capacity when studying the effects of privatisation of airports in China. Meanwhile, Tjia (2015) stresses the importance of the policy regime in his study of railway reform in China.

In summary, the theoretical framework of privatisation provides scholars with an effective tool to analyse and discuss the issues and challenges in the development process of infrastructure projects in China. The analysis from the perspective of property rights theory, market competition and monopoly, and regulatory and policy regimes helps to provide an in-depth understanding of the impact of privatisation reforms on infrastructure project development and how to achieve better policy outcomes in practice.

### 3. The Development Problems of Sanya Phoenix Airport and The Theoretical Framework of Privatisation

Build in 1994, Sanya Phoenix International Airport, like most airports in China, was controlled by state capital until 2004. However, due to the weak demand for air travel in Hainan Province at the time and poor corporate management, Sanya Phoenix Airport was in a loss-making position for several years until 2002. In 2000, HNA Group was entrusted by the General Administration of Civil Aviation and Hainan

Province to take a controlling interest in the operation of Haikou Meilan Airport, , and had gradually become the fourth largest aviation group in China. After the successful operation, in 2002, under the commission of the Hainan Provincial Government, HNA Group took over the operation and management of Sanya Phoenix Airport. After the taking-over HNA Group carried out a drastic reform on Sanya Phoenix Airport. After nearly 2 years of restructuring, the restructuring of Sanya Phoenix Airport was completed in 2004. After the restructuring, the HNA Group acquired 67% of the airport's total share capital, making itself the controlling shareholder.

According to the theoretical framework of privatisation, the development of Sanya Phoenix Airport can be analysed from three aspects: change in property rights, market competition and monopoly, and management and policy regime.

During the bankruptcy and restructuring process of Sanya Phoenix Airport, the structure of property rights has altered significantly. The controlling position of the original state-owned enterprises was weakened, and diversified investors and shareholders were introduced. This change align with the property rights theory that privatisation helps to increase the efficiency and productivity of enterprises. During the privatisation reform process, Sanya Phoenix Airport has made great efforts to remove market barriers and introduce more competitors. At the same time, the government reinforce the market regulation to prevent market monopoly. This process reflects the privatisation theoretical framework's views on promoting competition, lowering prices, improving quality and innovation. Furthermore, according to relevant data from 2016, there are 25 listed companies managing 143 airports. China has the largest number of listed airport companies with six, while the UK has the largest number (34) of freehold airports. Absolutely, Chinese airports with private capital investment handle more passenger traffic than those in other countries. This is a testament to the fact that the Hainan government's commissioning of HNA Group to manage Sanya Phoenix Airport in 2002 has indeed contributed to the privatisation of Chinese airports.

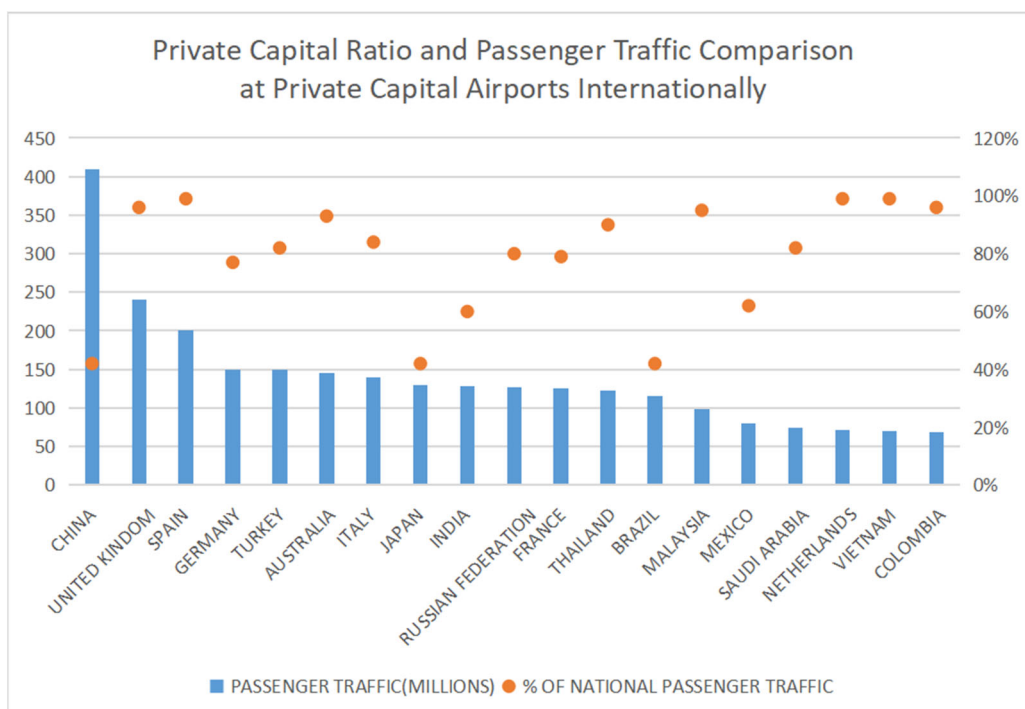
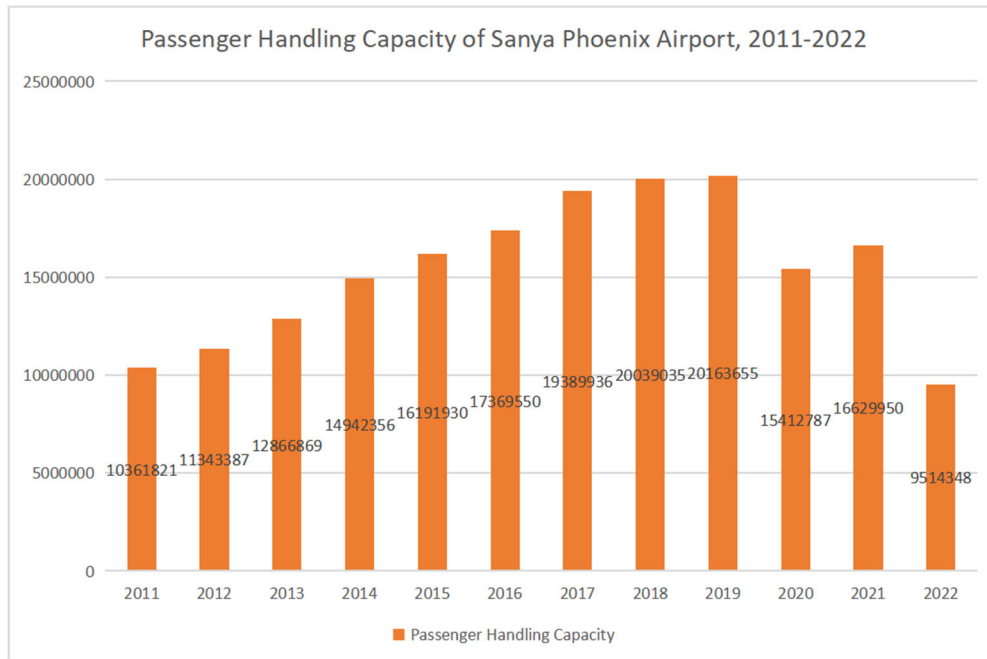


Figure 1. Private Capital ratio and Passenger Traffic Comparison at Private Capital Airports Internationally Source: Airports Council International(2017)

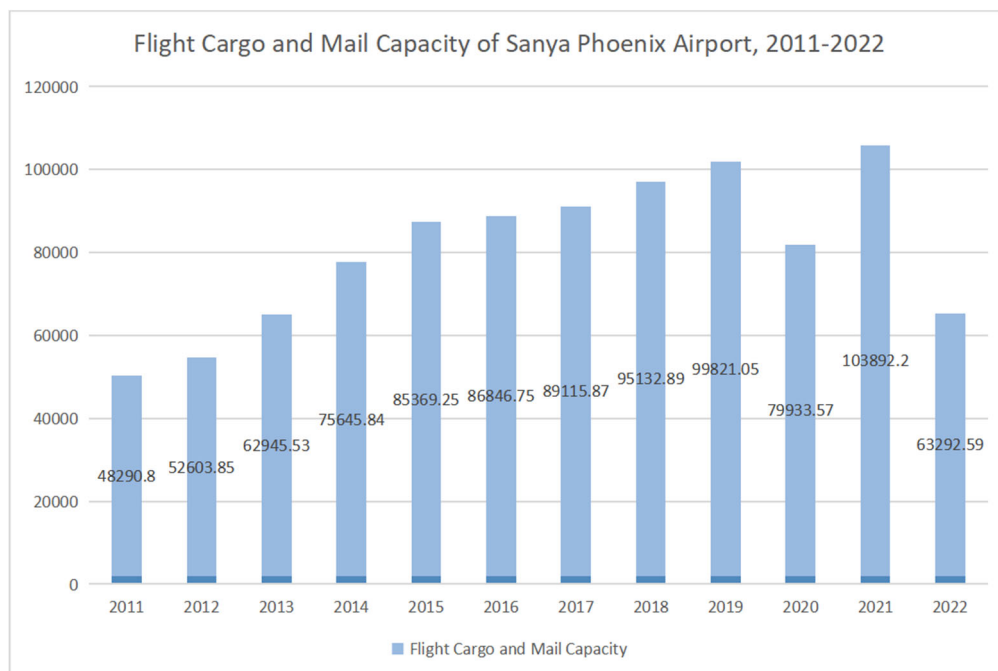
In the privatisation of Sanya Phoenix Airport, the government plays a central role in policy formulation and regulation. The Hainan provincial government has to some extent relieved its intervention in the management of the airport, giving the HNA Group more autonomy and room to make decisions. In addition, the government has also strengthened its regulation of market behaviour to ensure fair competition and consumer interests. This policy adjustment is in line with the theoretical framework of privatisation regarding the changing role of government.

Under the management of HNA Group, the performance of

Sanya Phoenix Airport has improved significantly. In 2002, the airport handled 1.49 million passengers, while in 2019, it handled 20.16 million passengers, 99,800 tonnes of cargo and mail, and 124,800 flights, ranking 23rd, 30th and 28th in China, respectively. In 2020, especially under the impact of the New Crown epidemic, Phoenix Airport's passenger throughput was 15.412 million, with a drop of 23.57% year-on-year, ranking second only to Chongqing Airport among the top 20 airports in terms of decline, and re-entering the top 20 in the country, ranking 18th.



**Figure 2.** Passenger Handling Capacity of Sanya Phoenix Airport, 2011-2022  
Source: CAAC(2012-2023)



**Figure 3.** Flight Cargo and Mail Capacity of Sanya Phoenix Airport, 2011-2022  
Source: CAAC(2012-2023)

However, since 2018, Sanya Phoenix Airport has been negatively impacted by the continuous exposure of HNA

Group's own operational issues. Together with the airport expansion costing a lot of money, Sanya Phoenix Airport's

profit has been declining year after year since 2018 and is already in negative territory by 2019. Another important negative impact is the investment in the construction of the new airport. In 2016, Sanya launched the reclamation project of Sanya Hongtang Bay International Airport (the new Sanya airport). For this purpose, Sanya Phoenix Airport invested in Sanya New Airport Investment and Construction Co. Ltd. In July 2017, the State Oceanic Administration called a halt to the reclamation project on the grounds that the project was using the sea illegally. Although the project was later restarted, the huge investment has imposed tremendous financial pressure on Sanya Phoenix Airport.

In addition, the HNA Group occupies a large amount of funds of Sanya Phoenix Airport due to a tight funding chain, and allowed the latter to guarantee a large amount of debt in association. All these reasons led to Sanya Phoenix Airport being on the verge of bankruptcy. However, as Sanya Phoenix Airport itself is still a high-quality asset, it will remain a civil aviation airport with a promising future after its restructuring and relief of its burden.

Overall, while the privatisation reform of Sanya Phoenix Airport has been effective in improving efficiency competition and management, it also faces challenges such as financial pressures and the construction of a new airport. In its future development, Sanya Phoenix Airport need to continuously adjust its strategies and adapt to market changes in order to cope with these challenges.

Analysis of the development of Sanya Phoenix Airport From the Perspective of the Legacy of The Planned Economy System

The legacy of the planned economy system has had a significant impact on the development issues of Sanya Phoenix Airport. Firstly, prior to 2004, Sanya Phoenix Airport was controlled by state-owned capital, and management's operational decisions were often subject to national plans and policies. Due to the weak demand for air travel in Hainan Province and poor business management, Sanya Phoenix Airport was in a loss-making situation for years until 2002.

Secondly, the restructuring process of state-owned assets under a planned economy is often influenced by government intervention and administrative directives. In the case of Sanya Phoenix Airport, when HNA Group took over the airport in 2002, the Hainan Provincial Government entrusted Hainan Meilan Airport Company Limited, a subsidiary of HNA Group, with the operation and management of Sanya Phoenix Airport. However, in the subsequent reform process, excessive government intervention in the reform of the enterprise resulted in a series of problems, such as inefficiency of the enterprise and poor policy implementation.

Finally, according to Demsetz (1974), the lack of clarity in the distribution of property rights under the planned economy led to inefficiencies in the enterprises. During the privatisation reform of Sanya Phoenix Airport, the unclear distribution of property rights due to the legacy of the planned economy system contributed a slow process of reform. After the taking-over, HNA Group gradually had operational difficulties in the process of reform and expansion, which eventually led to the bankruptcy and restructuring of Sanya Phoenix Airport.

In summary, the legacy of the planned economy system has had a significant impact on the development of Sanya Phoenix Airport. Due to the rigidity of the management model under the planned economy, excessive government intervention and the unclear distribution of property rights,

Sanya Phoenix Airport has encountered considerable difficulties in its operation and management, asset restructuring and privatisation reform.

## 4. Conclusion

This paper has explored the development of Sanya Phoenix Airport based on the theoretical framework of privatisation and the legacy of the planned economic system. The paper reviews the relevant literature on privatisation theory and the legacy of the planned economy system, and further analyses the development process of Sanya Phoenix Airport and the problems it faced at different stages.

Following the takeover and reform of Sanya Phoenix Airport by the HNA Group, the airport's performance has been significantly improved, especially in both passenger throughput and cargo and mail throughput. However, the privatisation and reform of Sanya Phoenix Airport has also confronted with significant challenges due to the impact of the HNA Group's own operational problems, as well as the constraints of airport expansion and investment in a new airport.

From the perspective of the legacy of the planned economic system, the development problems of Sanya Phoenix Airport can be attributed to some extent to its historical background and the influence of state-owned capital holdings. These factors have led to problems such as poor corporate management and inefficiency, making it necessary for the airport to overcome many difficulties in the reform process.

Finally, a comprehensive analysis shows that the development problems of Sanya Phoenix Airport are the result of a combination of reasons. Despite the degree of success achieved during the privatisation reform process, the airport still needs to constantly adjust and optimise its management strategy in the future to cope with the changing market environment and challenges. On this basis, through continuous improvement and innovation, Sanya Phoenix Airport is expected to achieve more sustainable and robust growth in the future.

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