

**EMPIRICAL STUDY ON CORPORATE GOVERNANCE MODES OF TIANJIN STATE-
OWNED ENTERPRISES SUBJECT TO THE MIXED-OWNERSHIP REFORM
- COMPARISON WITH SINGAPORE TEMASEK MODE**

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ABSTRACT

Introducing private capital and employing mixed-ownership structure are effective means and inevitable choices to enhance the vitality, control and influence of state-owned economy. An effective corporate governance structure that matches the mixed-ownership reform of state-owned enterprises is the key to the success of the reform. This study suggests that the mixed-ownership reform and corporate governance practices under the Singapore Temasek mode provide China with important experience in separating government functions from enterprise management, the system of board of directors, highly independent market-oriented operation, open and diversified international employment and value-based motivation and assessment. The empirical study shows that a company's shareholding ratio of the top five shareholders, total compensation of board members, total compensation of senior officers, shareholding ratio of the board of directors, shareholding ratio of senior officers are positively related to corporate performance, while the degree of check-and-balance ownership structure, the separation of rights of chairman and general manager, and the proportion of independent directors are negatively related to corporate performance. In addition, there is a big difference in the relationship between corporate governance and corporate performance under different types of controllers.

The mixed-ownership reform practice of Northern International Trust Co., Ltd. in Tianjin was analyzed as a case study. This paper presents reform suggestions on such aspects as improving the relationship between the Tianjin Municipal Government and the state-owned capital investment platform by the mixed-ownership reform, the design of the corporate governance mechanism of the state-owned capital investment platform, and the design of corporate governance of participating and holding enterprises of state-owned capital investment platform based on the case study and the experience and theoretical results of the Singapore Temasek mode.

Key words: State-owned enterprises; Mixed-ownership reform; Corporate governance; Temasek; Tianjin

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DEDICATION

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PART 1 CORPORATE GOVERNANCE AND OPERATING PERFORMANCE OF STATE-OWNED ENTERPRISES IN CHINA

CHAPTER 1 BACKGROUND OF MIXED-OWNERSHIP REFORM OF STATE-OWNED ENTERPRISES

1.1 Role of state-owned enterprises in the Chinese economy

State-owned enterprises are an important force for advancing national modernization and safeguarding common interests of the people, and an important material basis and political foundation for the development of the Party and the state. For a long time, having dominated important industries and fields, state-owned enterprises assume important economic, political and social responsibilities.

1.2 Historical review of the reforms of state-owned enterprises

China's state-owned enterprises have seen the following reforms since 1978:

Stage 1: Preliminary exploration stage of the reform of state-owned enterprises (1978-1992, the stage of decentralization of power and transfer of profits)

Before 1978, under the highly centralized planned economy, state-owned enterprises (then often referred to as "government operated businesses") were producers that execute the government's plans, tasks and instructions, as affiliates of government authorities. They had no autonomy in management, and the labor, properties, materials, production, supply and marketing are completely subject to the government's plans and instructions and administrative allocation, which divorces the production and social demand, discourages the enthusiasm and restricts the development of social productive forces. From the Third Plenary Session of the Eleventh Central Committee of the Communist Party of China in 1978, state-owned enterprises began the reform of "decentralization of power and transfer of profits". This reform started from the time when the reform and opening-up policy was initially implemented to the time of the Third Plenary Session of the 14th CPC Central Committee, throughout the 1980s and early 1990s and lasting for about 15 years. It aimed to establish

a modern enterprise system. During this period, the main tasks of this reform were to decentralize powers and transfer profits to enterprises, explore the separation of the ownership and management rights of enterprise, and try to guide state-owned enterprises to be released from the old ideas and behaviors under the planned economic system, so that they can gradually adapt to the commercialized business environment and complete their own transformation. As a result, this reform solved the problem of state-owned enterprises' access to the market.

Stage 2: System innovation in the reform of state-owned enterprises (1993-2003)

In the early 1990s, the relationship between the plan and the market under the socialist system put the reform into a stalemate in development. At the same time, the disintegration of the Soviet Union, the largest socialist country, had a huge impact on the socialist system. It is imperative to reform the planning system, so the reform of state-owned enterprises entered the second stage.

October 1992 witnessed the 14th CPC National Congress, which formally determined that the reform of the economic system aimed to establish a socialist market economy system. In 1993, the Third Plenary Session of the 14th CPC Central Committee passed the Decision on Several Issues on Building the Socialist Market Economy System, which clarified that building a modern enterprise system featuring clear definition of property rights, well defined power and responsibility, separation of government functions from enterprise management and scientific management is the direction of China's reform of state-owned enterprises. During this period, the main tasks of this reform were to guide state-owned enterprises to establish the concept of capital and property rights that are compatible with the requirements of the market economy, establish a modern enterprise system, and initially solve the problem of how the entire state-owned economic sector adapts to market competition through the strategic adjustment to the state-owned economy layout and structure. As a result, this reform changed the situation in which the state-owned economy had a large scale, the operating quality was uneven, and the state's financial burden was too heavy.

Stage 3: Period of development of "state-owned assets supervision" (2004-2012)

This period refers to the ten years from the establishment of the State-owned Assets Supervision and Administration Commission (the "SASAC") in 2003 after the 16th CPC National Congress to the convening of the 18th CPC National Congress. During this period, the state-owned assets supervision and administration system made a huge breakthrough. The reform of state-owned enterprises entered the development period when it was driven by the reform of the state-owned assets supervision and administration system. The main tasks of this reform were that the SASAC was responsible for supervising and administrating state-owned enterprises to maintain and increase the value of state-owned assets. As a result, this reform solved the problems of redundancy in state-owned economic management departments, overstaffing in organizations and low efficiency of supervision and administration. In October 2002, the 16th CPC National Congress proposed unwaveringly consolidating and developing public ownership economy, unwaveringly supporting and guiding nonpublic ownership economy, and especially emphasized continuing to adjust the state-owned economy layout and reforming the state-owned economic management system. Positive progress has been made in the two aspects throughout this period.

Stage 4: Period of classified reform of state-owned enterprises (2013-today)

Since the convening of the 18th CPC National Congress, the reform of state-owned enterprises entered a new era of "classified reform". According to the spirit of the Third Plenary Session of the 18th CPC Central Committee, the CPC Central Committee and the State Council issued on September 13, 2015 the Guiding Opinions on Deepening the Reform of State-Owned Enterprises, which divided state-owned enterprises into the public welfare state-owned enterprises, the commercial state-owned enterprises with their main business in fully competitive industries and fields, and the commercial state-owned enterprises with their main business in important industries and key areas. Different types of state-owned enterprises will be subject to different state-owned assets supervision and administration mechanisms, mixed-ownership reform programs, corporate governance mechanisms

and strategic adjustments to the directions of state-owned economy. The reform of state-owned enterprises in this period should be made on the fundamental premise of classified reforms.

1.3 Problems faced by state-owned enterprises

Despite having experienced 30 years of reforms, state-owned enterprises still face a series of problems. Xiao Yaqing, the director of the SASAC of the State Council, said on June 30, 2016 in a report to the 21st meeting of the 12th NPC Standing Committee on the state-owned assets management and system reform that the current reform and development of state-owned enterprises faces four major problems:

First, state-owned assets lack centralized and unified supervision. There are overlapping management and unclear duties; the state-owned assets supervision and administration agencies at all levels fail to delegate powers to the lower levels, have incorrect positioning in the supervision of investors and face too many matters for examination and approval.

Second, the enterprise management lacks appropriate governance from the board. The powers of the board of directors have not yet been fully implemented; the relationship between the state-owned assets supervision and administration agencies, the board of directors and the management needs to be rationalized; the reform of the three internal systems is still not in place; and there are still the problems: the management may be promoted but will not be demoted; the employees may enter an enterprise but cannot leave; and the income may increase but will not decrease.

Third, state-owned enterprises are burdened with a large number of social organizations. At present, there are still a large number of social organizations run by state-owned enterprises throughout the country. The historical issues such as the social management on retirees and the collectively-owned factories reform are prominent. The heavy burden of personnel management and operating expenses seriously restricts the reform and development of state-owned enterprises.

Ample prior research has demonstrated prominent problems faced by China's state-owned enterprises, and proposed that mixed-ownership reform is a mechanism to resolve or mitigate these problems. Below I discuss the problems in detail.

1. State-owned enterprises are relatively inefficient

It was found from the research of Unirule Institute of Economics (2012) that, from 2001 to 2009, the average return on equity of state-owned and state holding industrial enterprises was only 8.16%, and that of non-state-owned industrial enterprises was 12.9%. The performance of state-owned and state holding enterprises was significantly lower than that of non-state-owned enterprises. Liu Ruiming and Shi Lei (2010) hold that state-owned enterprises suffer not only from efficiency losses but also soft budget constraints as they rely on government subsidies to make up for the losses and restrict market entry to obtain monopoly profits; as a result, private enterprises development is hindered, posing a “growth drag” on the entire economy. Domestic and foreign researches indicate that, compared with the high efficiency of private enterprises, the important reason for the inefficiency of state-owned enterprises lies in the difference in the two types of enterprises' institutional framework represented by corporate governance. Sun Xiaohua and Li Mingshan (2016) argue that the stronger the local government's intervention motivation, the more prominent state-owned enterprises' overinvestment problem becomes. State-owned enterprises' overinvestment results in production efficiency losses, though it positively impacts regional economic growth significantly. According to Zhang Tianhua and Zhang Shaohua (2016), state-owned enterprise's capital and labor over-allocation due to biased policies can affect resource allocation efficiency. Moreover, the resolution of property rights issues will alleviate state-owned enterprises' efficiency losses (Zhang Tianhua and Zhang Shaohua, 2016).

The absence of owners of state-owned capital in state-owned enterprises makes the senior officers of state-owned enterprise under de facto "insider control". In addition, the biased protection of government policies makes it difficult for state-owned enterprises to withdraw from the

competitive market, thus making it difficult for senior officers of state-owned enterprises to form a market-competition-oriented management mechanism. Therefore, by introducing private capital, state-owned enterprises strengthen the supervision and monitoring of the senior officers by private investors after the mixed-ownership reform, which is conducive to ensuring that the senior officers would maximize economic benefits, and, through establishing an efficient management system, improve operation efficiency to enhance the competitiveness of enterprises in their own markets.

2. Leadership corruption is prevalent in state-owned. The reform of state-owned enterprises that began in the 1980s shows a certain feature of "semi-marketization" (Lu Zhengfei et al., 2012). The feature of "semi-marketization" is mainly reflected in two aspects: First, the market-oriented reform represents the general trend and the government gradually realizes that the market shall play a decisive role in resource allocation; second, in the process of market-oriented reform, government authorities seem to always intervene" so that the integration of government functions and enterprise management is still the ordinary state of most state-owned enterprises. In this context, the power allocation structure of senior officers of the state-owned enterprises represents a feature of "semi-marketization". For example, the problem of "insider control" derived from institutional transformation and weakened governance enables senior officers of the state-owned enterprises override the corporate governance mechanism and usually have excessive control over the enterprises, while excessive control means the power of senior officers within the enterprises is not or rarely restricted, which can easily lead to common corruption in senior officers of state-owned enterprises.

According to the inspection tours made by the Central Inspection Team on central enterprises and the leaders thereof, since the 18th CPC National Congress, the website of the Central Commission for Discipline Inspection and the Ministry of Supervision has released that more than a dozen heads of central enterprises have been inspected or punished. The central government's corrupt officials that have been caught include Song Lin, Sun Zhaoxue, Wang Shuaiting, Xu Jianyi, Liao Yongyuan, Wang Tianpu, Deng Qilin, Zhu Fushou, Si Xianmin and Chang Xiaobing. According to the relevant

information disclosed by the Central Inspection Team, some state-owned enterprises have not only direct and traditional corruption such as accepting bribes, embezzlement and misappropriation, but also concealed and complex forms including related Party transactions, interest transfer, internal and external collusion to obtain state-owned assets and acquisition of shares by capital operation. Relatives of some state-owned enterprise leaders start a business in violation of the regulations; high proportion of third-party business leads to the transfer of interests; specific interested parties take advantage of the leadership to earn profits; and "parasitic" and "family" communities of shared interests appear. Some state-owned enterprises employ persons in violation of regulations, give out post on grounds of personal favor and form cliques for private gain, leading to frequent "chain corruption". In addition, the problems of company-paid consumption including playing golf, enjoying banquets, going for a travel by using public funds and using government vehicles for private purposes are also very serious.

Therefore, the mixed-ownership reform of state-owned enterprises is not to simply introduce private capital to promote the diversity of equities, more importantly to build a corporate governance operating mechanism combining check-and-balance mechanism with incentive mechanism by constructing scientific corporate governance structure and designing mechanisms for the governance of shareholders, the board of directors, the board of supervisors and the incentive of the management, thus minimizing the "insider control" caused by the absence of shareholders and the imperfect incentive mechanism as well as curbing excessive perks for senior officers and corruption, and improving the sustainable development capacity of state-owned enterprises after the mixed-ownership reform.

3. Distorted investment policies due to political incentive

Since the 18th CPC National Congress, the Chinese government has made more efforts to fight against corruption, the working style of the Party and the government having been greatly improved. Anti-corruption has had a substantial impact on the political environment faced by officials. The 13th

Five-Year Plan further proposes further promoting the construction of the Party conduct and of an honest and clean government and the fight against corruption, and consolidating the achievements of the fight against corruption. One of the important contents is to focus on solving such problems as leaders' nonfeasance and malfeasance. The 2016 Report on the Work of the Government once again emphasized the problem of "nonfeasance and malfeasance of some leaders".

Compared with the agency acts of senior officers of non-state-owned enterprises purely driven by economic motives, those of senior officers of state-owned enterprises may be also caused by political motives. On the one hand, the negative fluctuations in performance will hinder the political promotion of the senior officers of state-owned enterprises and induce the risk aversion of enterprises, leading to underinvestment. On the one hand, the positive fluctuations in performance will raise the possibility of political promotion and expedite the risk preference of enterprises, leading to overinvestment. As found by the research of Jin Yuchao, Jin Qinglu and Xuan Yang (2016) in the process of anti-corruption, the inaction of senior officers of state-owned enterprises to avoid political risks leads to more underinvestment, and their "over-action" for pursuing political promotion leads to overinvestment, which will weaken the ability of enterprises to seize investment opportunities.

1.4 Purpose of mixed-ownership reform

Mixed ownership provides appropriate diversification and decentralization of equities and the voting arrangements in the general meeting, board of directors monitoring, hence counterbalancing different shareholders, preventing minority shareholders or senior officers from seeking personal gains, and finally forming an effective corporate governance mechanism, prompting owners and management to work together for maximizing enterprise value and returns on state-owned capital. The enterprises experiencing the mixed-ownership reform shall replace the "old three committees" of the state-owned enterprises with the general meeting, the board of directors and the board of supervisors, achieve the separation of decision-making, execution and supervision but the coordination with and mutual supervision over each other, make the board of directors play a major

role in the management on senior officers and strategic management and supersede the mechanism of direct intervention of government departments in state-owned enterprises in the past.¹Improving the corporate governance design of the state-owned enterprises after the mixed-ownership reform and establishing a corporate governance structure that meets the market competition orientation and requirements contribute to weakening the political and profit-seeking motives of the senior officers driven by administrative governance design of state-owned enterprises, and turning to the investment philosophy by the standard of sustainable development of enterprises and value-oriented investment decisions to avoid overinvestment or underinvestment.

The report of the 19th NPC National Congress points out that it is necessary to deepen the reform of state-owned enterprises, develop mixed-ownership economy and cultivate world-class enterprises with global competitiveness. This year's Report on the Work of the Government once again makes further arrangements for the reform of state-owned enterprises: continuing to promote the optimization and restructuring of state-owned enterprises and the joint-stock system reform of central enterprises, accelerating the formation of a corporate governance structure with effective checks and balances and flexible and efficient market-oriented operating mechanism, continuing to downsize enterprises and improve quality, improve the core competitiveness of primary business and promote state-owned capital to become stronger, better, and bigger.

The reason why the reform of state-owned enterprises in the past did not fully solve the inefficiency problem is because it pays too much attention to the practicality of the reform and fails to deal with the root cause of inefficiency, namely, the unreasonable corporate governance structure of state-owned enterprises. The mixed ownership of state-owned enterprises by introducing private capital is not only a mixture of forms, but also to give full play to the role of mixed ownership in improving governance structure, namely not just to reduce the shareholding ratio of state-owned

¹"Old three committees" refers to the party committee, congress of workers and staff and labor union of state-owned and collectively-owned enterprises ¹

shareholders, but to improve the corporate governance structure and improve the efficiency of the enterprises.

Therefore, studying the corporate governance of state-owned enterprises under the mixed reform, innovating the ownership structure and governance mechanism and correctly dealing with the relationship between public ownership and nonpublic ownership are of great importance to further deepening the reform of state-owned enterprises in China, resolving social conflicts and promoting coordinated economic and social development.

1.5 Research motives of the thesis

Based on the aforesaid analysis of research background, the main research motives of this thesis are as follows:

1. Summarize scientifically the characteristics of Temasek mode and the differences of corporate governance between China and foreign countries. In order to effectively guide Tianjin's state-owned enterprises in their efficient mixed reform through Singapore Temasek mode, this research thesis first elaborates on Singapore Temasek mode and then explains the significance of Temasek mode in guiding the mixed-ownership reform of Tianjin's state-owned enterprises. At the same time, this thesis makes a comparative analysis on the corporate governance modes of China and Singapore, so as to provide basis for applying Temasek mode according to the specific conditions of China.

2. Construct research framework of corporate governance and performance, and use relevant empirical data for empirical analysis. In order to scientifically guide the state-owned enterprises in Tianjin for their mixed-ownership reform, this research uses the theories on corporate governance, mixed-ownership reform and so on to construct theoretical framework concerning the relationship between equity structure governance, board governance, managerial incentives and corporate

performance, puts forward relevant research hypotheses, and finally makes an empirical analysis on the hypotheses and discusses the research results by using empirical data of listed companies in China.

3. Systematically introduce the reference value of Singapore Temasek mode in mixed-ownership reform and the conditions for its application. This research thesis will briefly introduce the basic situation of Singapore Temasek mode and the affiliates of Temasek. On this basis, it will elaborate on its corporate governance practices in the aspects of shareholder governance mechanism, board governance mechanism and incentive mechanism. And it will summarize the experiences in management system, board system, market operation, international employment, incentives and assessment. Finally, the environment and conditions for application of Singapore Temasek mode are expounded.

4. Draw on the experience of mixed-ownership reform at Singapore's Temasek to guide the mixed-ownership reform of Tianjin Northern Trust. Taking Tianjin Northern Trust as the case, this research thesis will expound the background and forms of the mixed-ownership reform of the company. Meanwhile, it will, by using the experience of Singapore Temasek mode and empirical results obtained in this research, put forward corporate governance design suggestions on promoting mixed-ownership reform of Northern Trust and other state-owned enterprises in Tianjin, in the aspects of shareholder governance, board governance, incentives and so on.

CHAPTER 2 RESEARCH STATUS AT HOME AND ABROAD

2.1 Concept of corporate governance

Corporate governance concept was formally proposed in the 1990s. According to the Cadbury Report, *Financial Aspects of Corporate Governance* (1992), corporate governance systematically guides and controls companies. With sound corporate governance system, board of directors can readily advance their companies within the framework of effective responsibilities.

Qian Yingyi (1995) regards corporate governance as an institutional arrangement that can be used to coordinate the interested stakeholders in an enterprise, including investors, debt-holders, and management; Qian deems that the corporate governance structure shall include: distribution of ownership and control power, and the establishment of constraint and incentive mechanisms.

Fei Fangyu (1996) regards corporate governance as a relationship contract, which constructs the relationship structure of business stakeholders; he believes that, to meet the interests of investors, it is necessary to clearly define the goals, principles of corporation operation and the scope of residual control powers and residual claims.

Wu Jinglian (1994) defines corporate governance with corporate governance structure. He believes that corporate governance structure is an organizational structure and is a balance between shareholders, the board of directors and senior managers. Among them, the shareholders entrust the board of directors to manage their assets; the board of directors shall be responsible to the shareholders and shall control the company through the hiring, dismissal and incentives of senior managers; and the senior managers are employed by the board of directors to manage the company.

Zhang Weiyong (1996) believes that corporate governance is an institutional arrangement, "In the narrow sense, corporate governance refers to the institutional arrangements concerning the functions and structure of the company's board of directors and the powers of shareholders; broadly speaking, corporate governance refers to a set of legal, cultural, and institutional arrangements for the

distribution of the company's control powers and residual claims, which will determine the company's goals, who controls in what state, how to control, and how risks and benefits are distributed among different corporate members."

According to Fei Fangyu, corporate governance is a contractual relationship aimed at solving the problem of property right separation by allocating rights, responsibility and interests. From the perspective of corporate governance issues, Wu Jiong (2007) points out that "corporate governance is the governance of the corporate system and is an evolving self-protection mechanism of the corporate system." That is to say, the institutional reason for the emergence of corporate governance is the agency problems and the deprived governance problems caused by the incompleteness of the contract, and corporate governance is the protection mechanism for solving the problems of its own system.

From the perspective of governance tasks, Zheng Zhigang (2007) puts forward that corporate governance may be divided into governance structure and governance mechanism. The governance structure encourages investor investment through reasonable property rights arrangement, and the governance mechanism is the manager incentive mechanism to solve the information asymmetry between shareholders and management.

2.2 Research status of mixed ownership

2.2.1 Domestic research

The term "mixed ownership" was initially put forward by Mr. Xue Muqiao in the 1980s. In 1987, in an article "Summarizing Experience and Firmly Advancing Economic System Reform", he proposed that the form of ownership of China's economic system reform is increasingly complicated, if the joint venture investors belong to different forms of ownership, it may be deemed that a mixed ownership system has been formed. Subsequently, the Third Plenary Session of the 14th CPC Central Committee put forward for the first time the term "mixed ownership", and the relevant literature in

academic circles increased rapidly. In 1997, Wu Jinglian proposed to treat all types of ownership economy equally and to realize the diversification of state-owned equity in his article "Adjust the Ownership Structure and Develop Market Economy", which became an important turning point in this research field, and the academic literature began to explore the practical problems of developing mixed ownership. He Lisheng and Guan Renqin (1999) discussed how the government should promote mixed-ownership enterprises in "Mixed Ownership – A Form of Ownership That Is Most Compatible with Market Economy". Relevant empirical research has begun to emerge in the 21st century, but most of them are limited to the analysis of the number and market position of mixed-ownership enterprises. In the few years before 2013, the reform of state-owned enterprises fell into silence, and the relevant literature was greatly reduced. However, after the mixed-ownership reform was put forward again on the Third Plenary Session of the 18th CPC Central Committee, the research literature was once again active. In his paper entitled "China's Roads and Mixed-ownership Economy" published in 2014, Li Yining points out that mixed ownership is conducive to the complementary advantages of state-owned enterprises and private enterprises, and it is an effective corporate governance structure and is conducive to the "Going-out" Strategy of China. In *Actively Promote the Mixed-ownership Reform of State-owned Enterprises*, Zhang Zhuoyuan (2015) points out that the state-owned enterprises should develop mixed ownership to optimize corporate governance structure to avoid the loss of state-owned assets or the monopoly of state-owned shares. In general, scholars are more rational about mixed ownership in their recent research.

1. Discussion on the importance of corporate governance of mixed-ownership enterprises

In terms of the nature of corporate governance of mixed-ownership enterprises, Xie Jun and Huang Sujian (2012) point out that corporate governance of mixed-ownership enterprises is unique in five aspects: first, the uniqueness of the role of government in governance; second, the uniqueness of the control of mixed-ownership enterprises; third, the uniqueness in the realization of the interests of shareholders in mixed-ownership enterprises; fourth, the uniqueness of the relationship between

the insiders of mixed ownership enterprises; fifth, the uniqueness of the coexistence of new and old governance structures in a certain period of time.

Regarding the problems in the corporate governance of mixed-ownership enterprises, Huang Sujian (2014) points out that the establishment of standardized and transparent corporate governance is an issue that must be considered in the corporate governance of mixed-ownership enterprises and, when solving problems, we should establish the goal to ensure that non-state-owned capital investors have the right to speak in mixed-ownership enterprises, that is, how to make non-state-owned capital willing to come when the enterprise is “profitable”. Bai Yike (2014) believes that at the level of corporate governance, the problems and challenges faced by the mixed-ownership reform mainly include how to prevent the loss of state-owned assets, the specific implementation plan of employee stock ownership, the difference between private capital and state-owned capital in management and how the capital market supports the development of mixed ownership. Yang Hongying and Tong Lu (2015) believe that although the corporate governance structure of mixed-ownership enterprises has been established, new problems such as the composition of the board of directors under the mixed-ownership system, the role of the board of supervisors, the incentives and constraints of the management, and the work of Party building need to be resolved. In particular, the relationship between and responsibilities of state-owned capital regulators, state-owned capital investors, external investors, boards of directors, managers, and Party organizations need to be further clarified. You Liping (2014) points out that the transition of state-owned enterprises to mixed-ownership enterprises faces three challenges: first, state-owned enterprises have large management inertia, and they are unwilling to accept private enterprises in management thinking; second, private enterprises want to realize orderly management and steadily obtain the benefits that match their capital, while the management style of state-owned enterprises makes them lack of security and investment enthusiasm; third, state-owned enterprises cannot provide stable income for foreign capital, and foreign capital has insufficient enthusiasm for entering state-owned enterprises.

2. Mixed ownership and corporate governance design

(1) Mixed ownership and equity structure design

Ji Xiaonan points out that the core content of the development of mixed ownership is to reform the property rights system of enterprises. First, it is required to determine the general direction of reforming mixed ownership, and then determine the type of property rights structure of mixed-ownership enterprises. A lot of studies have shown that it is undesirable for the excessively concentrated or dispersed equity of mixed-ownership enterprises; if the equity structure of a mixed-ownership enterprise is too concentrated, i.e., there is a sole majority shareholder in the enterprise, the internal balance of the corporate governance of the mixed-ownership enterprise will be broke easily and there is no way for the medium and small shareholders to balance major shareholders. At present, empirical research on the choice of ownership structure of mixed ownership-enterprises is still rare. Zhu Zhang and Zhu Zhonggui (2015) conducted qualitative research on the legal relationship between the institutional arrangements, property rights characteristics and state-owned equity of mixed-ownership enterprises. Gao Bei and Gao Han (2013), Chen Junlong and Tang Jijun (2016), Yin Jun et al. (2016) theoretically discussed the proportion of state-owned equity in mixed ownership enterprises from the perspectives of incentives, market position and negative externality of the industry by constructing a mixed oligopoly model. Hao Yunhong and Wang Qian (2015) conducted a case study on the mutual balancing mechanism between the largest state-owned shareholder and the second-largest private shareholder of Ewushang. Wang Ping (2015) used the sample of 2,463 A-share listed companies in China in 2013 to compare the differences in the capital cost between the state-owned shareholders and non-state-owned shareholders of these companies on the basis of summarizing the heterogeneity of the eight major categories of shareholders, and pointed out that the difference in capital cost caused by shareholder heterogeneity is the financial basis for an enterprise to implement mixed-ownership reform. The research conducted by Hu Yifan et al. (2005) through the big data of more than 700 companies during the period 1996-2001 publicized by World

Bank showed that there is a certain degree of substitution between the company's property rights structure and corporate governance and corporate competitiveness.

Li Yizhong (2013) points out that, at present, it is difficult to determine state-owned capital in mixed-ownership enterprises in China, and thus cause certain problems to the enterprise in determining the equity structure of the mixed-ownership enterprises. For example, there exists some problems for the private capital entering mixed-ownership enterprises in basic industry, facilities and finance, the reform of monopoly industries is difficult, therefore, it is required to standardize enterprises in time, solve as soon as possible the corresponding problems such as the mismatching between the capital market scale, the ability and the total amount of the national economy, it is required to implement properly the reform of mixed ownership and shareholding system, build and perfect the corresponding system of mixed ownership enterprises, and constantly improve the governance structure of mixed ownership enterprises.

Zhuang Congsheng (2014) points out that the core of the development of mixed-ownership enterprises has nothing to do with the number of shareholding entities, and it is necessary to continuously improve the corporate governance structure of mixed-ownership enterprises. Therefore, it is necessary to constantly improve the corporate governance structure of mixed-ownership enterprises and the corresponding system of enterprises, so as to ensure that mixed-ownership enterprises have a foothold in the fierce market competition. Chen Run and Sun Yuchun (2006) point out that the mixed-ownership economy can be realized through shareholding system and is a relatively new property rights allocation structure and economic form.

Li Zhengtu (2005) demonstrates that the different transaction relationships among various stakeholders in a mixed-ownership incorporated enterprise shall match with different regulatory structures; he points out that the stakeholders of a mixed-ownership enterprise include three levels: first, the ownership level including the owners of production factors, the creditors and various human capital owners; second, the separation of ownership and management rights based on shareholders,

directors and managers; third, stakeholders relating to external taxation, resources, environment and employment etc. The transition from single ownership to mixed ownership makes the property rights relationship of enterprises shows the characteristics of dispersion of ownership and concentration of management rights, and a reasonable governance structure can make the property rights system have higher property efficiency and distribution efficiency (Gu Niumin, 2006).

Gu Niumin (2006) analyzes the mixed-ownership economy from the perspective of institutional economics. He believes that vigorously developing a mixed-ownership economy can effectively solve the problem of the dispersion of ownership and the concentration of management rights, as well as the problem of capital flowing within the society, and mixed-ownership system is an enterprise system that can improve the efficiency of the property rights system, the efficiency of the management system, and the efficiency of the distribution system. Wan Huawei and Cheng Qizhi (2008) believe that a complete property rights system includes ownership system, income rights system, disposal rights system and corporate governance structure system. In particular, a standardized corporate governance structure is directly related to the effective operation of mixed-ownership enterprises. Yao Shengjuan and Ma Jian (2008) analyze the governance of mixed-ownership companies from the equity concentration. They believe that in a mixed-ownership enterprise with high concentration of equity, state-owned controlling shareholders are likely to infringe the interests of small and medium shareholders and there exists the problem of “insider control”, therefore, it is necessary to reduce the state-owned shares by introducing external investors, establish a power balance mechanism and an independent director system in the enterprise; enterprises with moderate equity concentration can bring higher company performance but can cause simultaneously internal consumption problems which shall be solved through the establishment of a strategy committee mechanism; in the enterprises with dispersed equity, the relatively dispersed ownership make the managers hold the control rights easily, therefore, the supervision and incentives of managers are particularly important, and it is necessary to strengthen the construction of the board

of supervisors and the audit committee, and provide diversified salary incentives and equity incentives to managers.

(2) Governance design of board of directors

Xie Jun (2013) finds through empirical analysis that in all corporate governance mechanisms, ownership structure, composition of the board of directors, managerial compensation, competition for company control and financial transparency are the most important factors affecting the governance level of these state-controlled mixed-ownership enterprises. Li Shaorong (2014) suggests that China's mixed-ownership enterprises should keep the operational level consistent with the capital level, and the operation should be transformed from partially state-run nature to the marketization of business entities. Through the internal and external governance and decision-making mechanism, incentive mechanism and supervision mechanism, Xiao Nan (2015) designed a governance framework for the corporate governance of mixed-ownership enterprises, analyzed specifically the corporate governance of China Jushi Co., Ltd. and given suggestions on the establishment of balanced ownership structure, the introduction of institutional investors, the introduction of outside directors, the establishment of board of supervisors and the establishment of professional manager system, etc. From the perspective of external governance, Li Zuojun (2014) proposes to protect the rights and interests of private enterprises in the development of mixed ownership and, based on the analysis of forms and causes of damage to private enterprises' rights and interests, proposes to open franchise, reduce administrative approval process, increase the shareholding opportunities of private enterprises and improve private enterprise investment rights protection mechanism, etc. Wei Jie (2008) proposes that, in the mixed-ownership enterprises, "as a contributor, the state has only four kinds of powers: first, appoint property rights representatives in board of directors according to its proportion of capital contribution; second, enjoy the income from assets in proportion to its capital contribution; third, has the right to know about the business activities of the enterprise; fourth, determine the survival of the company and the changes in assets in accordance with legal procedures." Li Yining (2014) believes

that the standardization of employee stock ownership and the introduction of private capital should be encouraged in the corporate governance of mixed-ownership enterprises, and analyzes the relevant methods, principles and paths.

Tong Dalin (1986) at the earliest studied the corporate governance of mixed-ownership enterprises. He points out in an article that state-owned enterprises need to implement a shareholding system to allow mutual share participation between different ownership systems and to establish a modern enterprise system with clear powers and responsibilities and separate functions through the board of directors. Li Zhengtu (2005) believes that, unlike general enterprises, mixed-ownership enterprises should pay attention to the right of managers, scientific and technical personnel and technicians to participate in the decision-making of shareholders' meetings. Zhang Wenkui (2010) conducted an empirical study, believing that the transformation of corporate governance of state-owned enterprises is of great significance, and provides a direction for the construction of mixed-ownership enterprises from a series of governance frameworks including the ownership structure, terms agreed by government, governmental regulation, functions of senior executives, employment relations and so on. Xie Jun and Huang Jianhua (2012) believe that corporate governance of mixed-ownership enterprises is special under the influence of external environment. To resolve inner contradictions and difficulties, it is required to have a deep understanding of the specificity of corporate governance. Huang Sujian (2014) proposes to encourage mixed-ownership enterprises to establish a mechanism for the free flow of property rights, and to clarify the entry and exit systems of various capitals and limit the fields for the state-owned single proprietorship and relative holdings, so that public and nonpublic capital investors are free to enter and exit from the market. Yang Hongying (2015) explores the composition and organizational model of the board of directors and the various information, balancing and decision-making mechanisms when analyzing how to conduct the corporate governance of state-owned enterprises under mixed-ownership reform, and build for the corporate governance of state-owned enterprises a dual principal-agent relationship based on the breakthrough point of “shareholders, board of directors and managers”.

Li Yining (2014) proposes that, after the implementation of mixed ownership, the corporate governance structure of enterprises replaces the administrative intervention of enterprises, which makes it easier for enterprises to achieve corporate governance structure. In particular, the reform of state-owned enterprises must constantly improve the corporate governance structure of enterprises to realize the independent management of enterprises, because whether they are state-owned enterprises or private enterprises, they should operate independently and escape the shackles of government intervention; in addition, an enterprise shall establish not only corporate governance structure but also the corresponding corporate management systems such as the board of directors, shareholders' meeting, and board of supervisors.

(3) Design of managerial incentive mechanism

At the present stage, the core of the mixed-ownership reform of state-owned enterprises “should focus on perfecting the modern enterprise system, make the enterprises become the real market entities and implement the corporate governance structure, so as to meet the requirements of the market with standardized institutional mechanisms and thereby enhancing the vitality and core competitiveness of state-owned enterprises competitiveness.” That is, how to standardize the corporate governance mechanism of mixed ownership enterprises? How to improve the level of governance of the board of directors and the ability of entrepreneurs is the core of the development of mixed-ownership economy in state-owned enterprises (Gao Minghua and Du Wencui, 2014). Gao Minghua (2015) discusses the issue of corporate governance in the development of mixed ownership by state-owned enterprises from five aspects: rights of investors, governance of board of directors, ability of entrepreneurs, information disclosure and compensation of responsible person. He clearly points out that, for state-owned mixed-ownership enterprises, the responsible person may choose only one of the administrative level treatment and the market-based compensation, and the two compensation systems cannot be used interchangeably. Zhang Xiangjian et al. (2015) believe that the deepening of the mixed-ownership reform of state-owned enterprises needs to build a good macro-

institutional environment, change the government's management model for state-owned enterprises, improve corporate governance structure and establish incentive and restraint mechanisms to improve the control and influence of the state-owned economy. In terms of executive incentives and evaluation, it is necessary to implement a market-based selection mechanism and a compensation mechanism, and the incentive form should be diversified and focus on long-term incentives (Gao Minghua and Wen Cui, 2014).

Chen Run and Sun Yuchun (2006) point out that, considering the specificity of China's mixed ownership enterprises, China's mixed ownership enterprises are not simple and have certain difficulties mainly in: make effective company development decisions; there are no corresponding monitoring system and sound monitoring mechanism for the company's internal governance, therefore, how to construct a perfect internal and external monitoring mechanism is particularly important; it is necessary to formulate a reasonable incentive mechanism to effectively stimulate the stakeholders of all aspects of the company, especially the company's directors, managers and supervisors etc.; it is necessary to properly handle the problems between the new and the old boards of directors, general meetings and boards of supervisors to achieve the coexistence of the old and new systems.

From the perspective of "conflict of interest", Shi Yuyou (2010) proposes that shareholders, operators and employees are the main bodies of corporate governance of mixed-ownership enterprises, the goal of corporate governance should be to be able to bear the residual risks, enjoy the residual income, and coordinate the conflicts between stakeholders, and thereby maximizing the interests of the main bodies.

Zheng Xinli (2014) points out that the shareholding by employees can gradually transform enterprises into a combination of capital owners and laborers, which may enhance the cohesiveness of enterprises; especially after state-owned enterprises completed the mixed ownership reform, the management of the enterprise may hold shares, this may enable the enterprises to keep up with

changes in the market and facilitate the development of the enterprises. Li Yining (2014) points out that the shareholding of the employees of an enterprise is a way of future development of mixed ownership. The enterprise and its employees should share the profits of enterprise and the appropriate equity incentive system should be adopted. He believes that the investment in manpower and capital can obtain corresponding profits and wealth.

2.2.2 Research aboard

There is not much literature on mixed ownership at the international level, and only a few case studies on the mixed-ownership enterprises mainly focus on the evolution of state-owned enterprise reform and the corporate governance formed thereby. Stephen Brooks (1987) researched such mixed-ownership enterprises as British Petroleum Company and Canada Development Investment Corporation, and found that governments often made use of their administrative powers to intervene in the management of these enterprises. Upon the research, J. Bennett and J. Maw (2003) found that in the process of privatization of state-owned enterprises in some countries in transition, the government was willing to retain a portion of state-owned shares in the enterprise. They believed that the mixed ownership was a good institutional choice within a certain period of time. However, some scholars believe that the remaining state-owned shares are a problem for the privatization of state-owned enterprises.

Valentin Zelenyuk (2006) pointed out that the ownership of mixed-ownership enterprises has a great influence on the economic behavior of mixed-ownership enterprises, and proposed that the supervision form of mixed-ownership enterprises was determined by the type of the shareholders who mastered the supervision power of mixed-ownership enterprises. However, since it is difficult to measure the actual supervision of mixed-ownership enterprises, the essential characteristic thereof are used to evaluate them. In addition, Valentin Zelenyuk, according to the relevant theories of agency relations, pointed out that the functions and costs of supervising the activities of managers in mixed-ownership enterprises are closely related to the type of shareholders of mixed-ownership enterprises.

He classified the shareholders of mixed-ownership enterprises as managers and the State, employees and financial external shareholders as well as non-financial external shareholders dominated, and proposed that the changes in the business activities and results of mixed-ownership enterprises are closely related to the type of dominant shareholders.

Cepren (2004) and other three scholars, through sorting out the relevant information of and data of accounting statements of 1,000 representative enterprises, carefully analyzed the relationship among the ownership structure, corporate governance level and investment level of enterprises, and proposed that the ownership of industrial enterprises in Russian is highly concentrated at the present, and that the corporate governance levels of different enterprises are quite different with many enterprises relying on internal financing and having big problems.

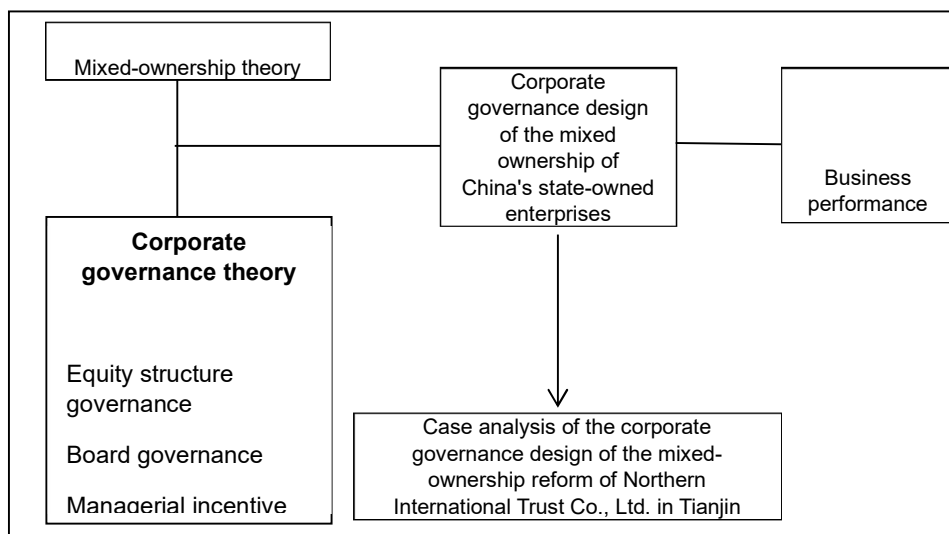
Through the sorting and analysis of the above literatures, it is found that the research of the theoretical cycle on the mixed ownership has undergone a change process from macro research to micro research, and the understanding of the mixed-ownership economy has also been deepened. Initially, the introduction of the concept of the mixed-ownership economy triggered a broad discussion by the theoretical cycle mainly discussing its nature, characteristics and role in terms of the ownership economic structure. With the further development of the mixed-ownership reform and some specific problems arising in the reform, scholars gradually turn their attention to the micro mixed-ownership enterprises to discuss what they should be. These problems serve as cores for the mechanism design of the mixed-ownership reform, so as to solve the principal-agent problem existing in mixed-ownership enterprises.

CHAPTER 3 CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

This study aims to design the mixed-ownership reform of China's state-owned enterprises from a macro perspective. Thus, hypotheses are proposed regarding the relationship between corporate governance design and corporate performance of China's mixed-ownership state-owned enterprises. These hypotheses are based on the theories of mixed ownership and corporate governance and the practical experience of Singapore's Temasek in mixed-ownership reform. Based on the empirical research results, this research proposes a corporate governance design based on mixed-ownership reform of Northern International Trust Co., Ltd., in Tianjin.

3.1 Analysis framework

The model designed in this research is as follows:



Specifically speaking, the core content involved in this analysis framework is as follows:

Firstly, this research will deeply research the practical experience and design ideas of corporate governance in the mixed-ownership reform of Temasek, a state-owned enterprise of Singapore, in order to provide reference for corporate governance design in the mixed-ownership reform of China's state-owned enterprises. In order to study the practical experience of Singapore's Temasek mode in more detail and in-depth, this research will analyze the essence of the corporate

governance of Singapore's Temasek mode from different levels and perspectives of the relationship between the government and Temasek, corporate governance design of Temasek Company and corporate governance design of participating and holding enterprises of Temasek.

Secondly, this research will, through comprehensively making use of the relevant theories including the mixed-ownership theory and corporate governance theory, in combination with the practical experience of the mixed-ownership reform of Temasek, Singapore, and on the basis of the background and environment of the mixed-ownership reform of China's state-owned enterprises, put forward targeted research hypotheses on how to be based on the mixed-ownership background of China's state-owned enterprises in terms of equity characteristics, board governance and managerial governance from the theoretical perspective.

Thirdly, this research will adopt the case study method to conduct the case study on the mixed-ownership reform of Tianjin T&B Holding Co., Ltd. and Northern International Trust Co., Ltd. by referring to the experience of corporate governance design of Temasek, Singapore and taking advantage of the results achieved from the empirical research, and guide Tianjin Municipal state-owned enterprises to further advance the mixed-ownership reform.

Finally, on the basis of analyzing the environment and conditions applicable to Temasek mode, this research will organically combine Temasek mode with the actual environment and conditions faced by the mixed-ownership reform of China's state-owned enterprises, and put forward relevant supporting guarantee mechanisms and measures promoting the reform results of China's state-owned enterprises on the basis of complying with objective laws. The huge difference of system environment between China and Singapore makes it impossible for the mixed-ownership reform of China's state-owned enterprises to simply copy the Temasek mode. The mixed-ownership reform of China's state-owned enterprises must be promoted steadily by close integration with the practical condition of China in a step-by-step manner and by stages, and gradually explore out the mode and law of the mixed-ownership reform of state-owned enterprises with unique Chinese characteristics.

3.2 Research hypotheses

1. The relationship among the ownership concentration, equity balance degree and corporate performance after the mixed-ownership reform

Jain and Kini (1994) concluded that the corporate performance will be affected by the ownership concentration by using American companies as the research object. The higher the ownership concentration is, the better the corporate performance becomes. Cubbin and Leech (1983) also believed that the decentralization of equity structure will lead to speculative motives for shareholders, thereby resulting in their lack of awareness of the Company's operation and management and the decline in the corporate performance. On the contrary, the more concentrated the equity is, the more beneficial it is to improve the Company's business performance. After conducting empirical research on the equity structure and corporate performance by taking large companies in 12 European countries as samples, Thomsen (1999) found that, excluding the variable factors such as capital structure, industry influence and so forth, the higher the Company's ownership concentration, the higher the shareholder wealth and performance, and there exists a positive correlation between the two. Lang, Claessens and Djankov (1999) find that the more concentrated the majority shareholders' shareholding ratio, the stronger the company's profit-making ability. This finding indicates that the company can achieve higher operating performance (Claessens and Djankov, 1999). Farooque et al. (2010) adopt different research methods to establish corresponding simultaneous equations and find that a company's profitability is significantly positively related to ownership concentration. Domestic scholar Feng Tianchu (2018) uses the data of 2007–2016 Shanghai- and Shenzhen-listed companies to conduct empirical research. The author shows that a company's ownership concentration can help enhance its profitability and long-term business performance development. Chen Xi et al. (2010) study the relationship between ownership structure and business performance of Shanghai-listed manufacturing enterprises and conclude that their

ownership concentration and proportion of state-owned shares positively influence business performance.

The equity balance degree with a great effect on the Company can bring great pressure to the company's management, so as to stimulate them to make efforts to effectively manage the company, thereby improving the governance efficiency². Therefore, in a mixed-ownership enterprise, an appropriate improvement of the equity balance degree can enhance the restriction and supervision of major shareholders other than the largest shareholder over the largest shareholder, in order to stimulate them to make efforts to effectively manage the company, thereby improving the governance efficiency. La Porta (1999) found that the existence of multiple major shareholders in a company is the most beneficial to the corporate governance structure. Francis and Smith's (1995) research shows decentralized companies are less innovative and rely on external purchases rather than on independent innovation. LaPorta (2003) believed that the equity balance degree may reduce the encroachment of major shareholders on other stakeholders. Therefore, this paper raises the first research hypothesis:

Research hypothesis 1a: There is a positive relationship between the ownership concentration and corporate performance in mixed-ownership enterprises.

Research hypothesis 1b: There is a positive relationship between the equity balance degree and corporate performance in mixed-ownership enterprises.

2. The relationship between board structure design and corporate performance after the mixed-ownership reform

Many researches based on the agency theory believe that the duality of the chairman and CEO easily leads to excessive concentration of CEO power, thereby reducing the independence and objectivity of the supervision of the board of directors over the management, which is not conducive

² The degree of check-and-balance ownership structure refers to the proportion of the shareholding of second largest shareholder to that of the first largest shareholder, or the proportion of the sum of the shareholding ratio of the second to N largest shareholders to the shareholding of the first largest shareholder. It reflects the check and balance between the second to N major shareholders and the first major shareholders, which is also called "equity balance degree".

to the participation of the board of directors in the company's strategic management. Therefore, the emphasis on the separation of the roles of chairman and general manager is of great significance in improving the independence of the board of directors, promoting the board of directors to participate in the company's strategy, and advancing the board of directors to play its controlling function. Fama and Jensen (1983) pointed out that the rational arrangement of the leadership structure of the board of directors will be beneficial to solve the agency problem caused by the separation of the two powers. Meanwhile, the decision-making control and management will be respectively responsible by the board of directors and the manager, which will favor the reduction of the agency costs and improvement of the corporate business performance. Du Shengli and Zhai Yanling (2005) believed that one person concurrently holding both roles will reduce the effectiveness of the restriction and supervision of the board of directors over the general manager, and also reflect the authority of the general manager to some extent. The research of Shen Yifeng and Zhang Junsheng (2002) suggested that a very significant reason for why the governance of the board of directors of special treatment (ST) listed companies fails in China is that there are many phenomena of the duality of the chairman and the general manager. Therefore, the emphasis on the separation of the two positions is particularly important for improving the independence and effectiveness of the board of directors. Upon the research, Bai Chongen et al. (2005) found that the CEO concurrently serves as the chairman or vice chairman of the board in more than one-third of 1,004 companies listed in Shanghai or Shenzhen Securities Exchange in 2000, thus weakening the recognized supervisory role of the board of directors. Therefore, this paper raises the second research hypothesis:

Research hypothesis 2: There is a negative relationship between the duality of the chairman and general manager and corporate performance in mixed-ownership enterprises.

Independent directors independent of the company's management will not affect many decisions of the company. Most of them have rich professional knowledge and experience as well as strong capabilities, and can effectively supervise and evaluate the behavior of the company's

management to obtain a relatively fair evaluation. In addition, they can also offer advice and suggestions for the future development of the mixed-ownership enterprises, which will favor the long-term development thereof. In general, the more independent directors the mixed-ownership enterprises have, the more effective the supervision and evaluation on the behavior of the management of mixed-ownership enterprises are, thereby improving the governance efficiency of mixed-ownership enterprise. Upon the research, He Jie (2005) found that professional directors with financial and securities investment knowledge and experience among independent directors of fund management companies have a positive impact on the fund governance: if their proportion in the board of directors is higher, the better the fund performance will be better and the expense ratio of net assets will be lower; if the fund performance is lower, the possibility of the board of directors of a fund management company to change the fund manager is bigger. Wang Yuetang, Zhao Ziyue and Wei Xiaoyan (2006), by making use of the data of 3,386 non-financial listed companies from 2002 to 2004, investigated the impact of board independence on corporate performance. Upon the research, they found that a significant positive correlation exists between the ratio of independent directors and corporate performance and still exist after the endogenous problem under the control. Upon the research, Li Weian and Tang Yuejun (2006) found that the higher the evaluation value of the independent director system is, the lower the net assets income rate of listed companies is, but the higher the net asset value per share and the operating cash flow per share are. Therefore, this paper raises the third research hypothesis:

Research hypothesis 3: There is a positive relationship between the fraction of independent directors and corporate performance in mixed-ownership enterprises.

3. The relationship between board and manager incentive mechanism design and corporate performance after the mixed-ownership reform

According to the relevant principal-agent theories, when an agent has no residual claim, it will usually evade the high-risk projects with serious short-term behaviors; when an agent obtains the

company's shares, that is to say, it enjoys the residual claim, it will tend to maintain a high degree of consistency with the interests of the shareholders, and pay attention to the long-term development of the company, thereby maximizing its own income level. Therefore, the shareholding of managers will be in favor of the enhancement of attention paid by the agent to the long-term interests of the company, thereby improving the corporate performance. Similar conclusions are drawn with respect to the relevant researches on the board incentive mechanism. Upon the research, Jensen and Meckling (1976) believed that with the increase in the shareholding ratio of directors, the board members will share the residual claims of the company to a greater extent, so their enthusiasm to supervise the managers to ensure the maximization of the company's interests will also increase. Upon the research, Kosnik (1990) believed that the holding of the company's shares by the outside directors can effectively increase their independence relative to the CEO's influence. Therefore, this paper has raised the following research hypothesis:

Research hypothesis 4: There is a positive relationship between the shareholding ratio by the board and the managers and corporate performance in mixed-ownership enterprises.

CHAPTER 4 DATA AND METHODS

In order to more effectively test corporate governance framework of state-owned enterprises with mixed-ownership in China designed by the research, this research will further test the theoretical framework and research hypotheses by using the following method.

4.1 Sample selection and data source explanation

I construct a database based on the empirical data of A-share manufacturing enterprises listed in Shanghai or Shenzhen Security Exchange from 2016 to 2019. I apply the following screening processes of the sample: Firstly, excluding the enterprises with missing research variables, this is because the lack of research variables will bring big problems to the follow-up empirical analysis results; Secondly, in order to avoid the large difference in the data of different sample enterprises in a single variable, the sample enterprises whose research variables are in the top 5% and the last 5% are excluded; Thirdly, excluding the "ST" enterprises with financial difficulties which are listed in the "ST" list in the stock exchange market of Shanghai and Shenzhen stock markets, if they are in continuous financial difficulties, financial difficulties will have a great impact on the relationship between corporate governance and corporate performance. Finally, a total of 7472 valid samples were obtained, including 1657, 1969, 1889 and 1957 enterprises in 2016, 2017, 2018 and 2019, respectively. In addition, the database covers 1839 state-owned holding enterprises and 5633 non-state-owned holding enterprises.

The firm-specific variables on the enterprise equity structure, variables on the board governance, managerial governance, enterprise characteristic, etc. are obtained from the CCER database and the Wind information database.

4.2 Building of the research variables

This paper uses corporate performance as a dependent variable. The explanatory variable refers to the independent variable, including equity concentration, equity balance degree, the duality

status of the chairman and general manager, the ratio of independent directors and the incentive mechanism for the board and the senior officers. In addition, this paper selects four variables including enterprise scale, financial leverage, board size and the number of board meetings, as control variables.

1. Dependent variable

Corporate performance: Return on Total Assets (ROA), which refers to the ratio of the total amount of compensation received by an enterprise over a period of how many years to the average total assets. It represents an enterprise's overall profitability of all assets, including net assets and liabilities, to evaluate the overall profitability of the enterprise to utilize all assets, and is an important indicator for evaluating the operational efficiency of corporate assets.

Moreover, this research uses the return on invested capital (ROIC) as another alternative variable for corporate performance for a corresponding empirical analysis. Thus, the reliability and robustness of research conclusions are further ensured.

2. Independent variable

(1) Equity concentration (CR5): Sum of the shareholding of the top five largest shareholders.

(2) Equity balance degree: Z index (ZIndex, the ratio of the shareholding of the largest shareholder to the shareholding of the second-largest shareholder) or to the sum of the shareholding of the second through fourth largest shareholders to the shareholding of the largest shareholder to (ShareB2-4) selected in this research are measured.

(3) Chairperson and general manager duality (Duality): When the chairperson and general manager are the same person or the general manager is also a director, the value is 1, otherwise the value is 0.

(4) Ratio of Independent Directors (ROID): The ratio of the total independent directors to the number of directors. According to the China Securities Regulatory Commission's *Establishment of*

Independent Director Systems by Listed Companies Guiding Opinion, the term “independent director of a listed company” is a director who does not hold other company positions and has no relationship with the listed company engaging him/her or its principal shareholders that could hinder his/her independent and objective judgments.

(5) Incentive mechanism for the chairman and senior officers

Board Share: The proportion of shares held by the directors in the company in the company's total shares.

TMT Share: The proportion of shares held by the senior officers from the top management team in the company in the company's total shares.

3. Control variable

(1) Size: subject to the natural logarithm of its total assets

(2) DA: annual liabilities to assets ratio

(3) Board size: the number of members to attend the annual board meeting

(4) Board meeting: the number of annual board meeting

(5) Year: a dummy variable for each calendar year

4.3 Data analysis method

This research mainly uses three methods to conduct the empirical test on the relevant research hypotheses designed in the conceptual model:

Firstly, this research will make use of the analysis method of Pearson correlation to conduct a preliminary test on the correlation among the relevant research variables, especially on the relationship between governance variables including equity structure characteristic variables and

corporate performance in the context of the mixed ownership, thus laying the foundation for subsequent research.

Secondly, this research will, on the premise of considering the enterprise characteristic and other variables, use the multiple regression analysis to research the relationship among the characteristic variables on the enterprise equity structure, variables on the board governance and variables on the managerial governance, thereby improving the rigor and objectivity of the research conclusions.

Finally, the case study is regarded as an empirical analysis method. This research will combine the experience of corporate governance design in the mixed-ownership reform of Temasek, Singapore and the practice of the mixed-ownership reform of Northern International Trust Co., Ltd. in Tianjin to design the top-level system for the corporate governance based on the driving by the mixed-ownership reform of state-owned enterprises, so as to match the needs of the mixed-ownership reform.

CHAPTER 5 EMPIRICAL RESEARCH RESULTS

5.1 Descriptive statistics

Descriptive statistical results of the relevant research variables involved in this research are as shown in Table 5.1.

Table 5.1 Descriptive Statistics of Research Variables

Variable	Minimum value	Maximum value	Mean value	Standard deviation
ROA	0.01%	58.2472%	7.8294%	5.7651%
ROIC	0.0005%	1456.2307%	9.1507%	19.7077%
Size	17.5453	27.4677	22.0291	1.1912
DA	0.98%	99.94%	37.52%	18.49%
Boardsize	4	17	8.34	1.545
Board meeting	2	46	9.49	3.792
CR5	10.77%	100%	55.02%	14.43%
ZIndex	0.0001	1.0000	0.3764	0.2779
ShareB2-4	0.0103	4.0052	0.7862	0.6183
Duality	0	1	0.3400	0.4730
ROID	0.00%	80.00%	37.64%	0.055625317
Boardshare	0.00%	98.00%	17.6566%	21.3230%
TMTshare	0.00%	88.00%	10.1623%	16..3260

The descriptive statistical results on the relevant variables of the ownership concentration in Table 2 show that the maximum value of CR5 is 100%, while the minimum value thereof is 10.77% and the mean value thereof is 55.02%, which indicates that the sum of the shareholding ratios of the top five shareholders of the sampled enterprises still maintain a higher ownership concentration. Furthermore, the statistical results of ZIndex show that the mean value and the maximum value thereof are 0.0001 and 1.0000 respectively, while the mean value and the maximum value of ShareB2-4 are 0.7862 and 4.0052 respectively. Through comparing with the statistical results of CR5, ZIndex and ShareB2-4, we can find that the ownership concentration of the top five shareholders of the

sampled enterprises is higher, while the equity balance degrees of the second-largest shareholder, and the second through fourth largest shareholders are lower than the first largest shareholder, and the phenomenon of the equity structure with the single-large shareholder is still prominent. Such equity structure is easy to cause that the large shareholders erode medium and small shareholders, and that other medium and small shareholders are difficult to protect their legitimate rights and interests through effective equity balance degree.

In addition, the degree of separation between the chairman and the general manager shows the minimum value of Duality of 1, the maximum value thereof of 1 and the average value thereof of 0.34, which indicates that under the guidance of relevant laws and regulations in China, the duality status of the chairman and general manager will serve as an important indicator for affecting the independence of the board of directors. In recent years, the degree of separation of the chairman and the general manager has become higher and higher, and the circumstance of the chairman concurrently acting as the general manager occurs less and less. However, the circumstance of the general manager concurrently serving as the vice chairman or the director still exists. The existence thereof on the one hand is for the purpose of facilitating the manager management team represented by the general manager to effectively communicate with the board to ensure that the information of the enterprise operation and management can be transmitted to the board more effectively; on the other hand, it has showed the importance of strengthening mutual trust between the board and the executive management team headed by the general manager to some extent. The mutual trust and mutual support between the board and the management team are the necessary prerequisite for ensuring the stable development of the company. In addition, the mean value of the ROID is 37.64%, which also shows that the most setting of independent directors in China's listed companies at present are designed to meet the regulatory requirements of not less than one-third, that is to say, the construction of the independent director system is more for meeting the compliance regulation requirements. However, the effect thereof remains to be further tested.

From the design of the incentive mechanism for directors and managers, whether the compensation of the top three directors with the highest amount or the compensation of the top three senior officers with the highest amount shows that there is a significant and obvious gap of compensation among the sampled enterprises. One reason is that the compensation of directors or senior officers in the sampled listed enterprise is 0, which may be caused by the design of the compensation mechanism, or may be the result of bearing negative compensation incentives due to its failure to achieve the expected performance. However, the maximum value of the compensation of the top three directors with the highest amount or the compensation of the top three senior officers with the highest amount reaches up to over RMB 10 million, which also indicates that the more and more sampled enterprises regard the strengthening of cash compensation incentives as an important component in improving business performance.

5.2 Pearson correlation analysis on variables

Table 5.2 shows the results of Pearson correlation analysis among variables. The correlation coefficients between the sum of the top five shareholders' shareholding ratios and (a) return on asset (ROA) and (b) ROIC are 0.258 and 0.063, respectively. Both values pass the significance test at 1% level. This indicates that, in the current reform of state-owned enterprises, the higher the shareholding ratio of the top five shareholders, the better it will help improve corporate performance.

In addition, the correlation coefficient between the ratio of the second to the fourth largest to the first largest shareholder's shareholding ratio and ROA is 0.025. This value passes the significance test at 5% level. However, the correlation coefficient between equity balance degree and ROA is negative and fails all levels of significance test. It simply shows that the balance between the second and fourth largest shareholders is better than that between the second-largest shareholder and the largest shareholder.

Table 5.2 Pearson Correlation Analysis on Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1ROA	1												
2ROIC	0.315*** (0.000)	1											
3CR5	0.258*** (0.000)	0.063*** (0.000)	1										
4Zindex	0.016 (0.155)	-0.008 (0.506)	0.047*** (0.000)	1									
5share2-4	0.025** (0.033)	-0.005 (0.687)	-0.067*** (0.000)	0.862*** (0.000)	1								
6Duality	0.085*** (0.000)	0.034*** (0.004)	0.107*** (0.000)	0.032*** (0.005)	0.042*** (0.000)	1							
7ROID	-0.001 (0.901)	0.003 (0.770)	0.087*** (0.000)	-0.025** (0.033)	-0.040*** (0.001)	0.107*** (0.000)	1						
8Boardshare	0.174*** (0.000)	0.034*** (0.004)	0.238*** (0.000)	0.165*** (0.000)	0.194*** (0.000)	0.257*** (0.000)	0.053*** (0.000)	1					
9TMTshare	0.158*** (0.000)	0.034*** (0.003)	0.213*** (0.000)	0.102*** (0.000)	0.127*** (0.000)	0.507*** (0.000)	0.071*** (0.000)	0.766*** (0.000)	1				
10Size	-0.059*** (0.000)	-0.008 (0.513)	-0.037*** (0.002)	-0.082*** (0.000)	-0.124*** (0.000)	-0.188*** (0.000)	-0.008 (0.495)	-0.374*** (0.000)	-0.306*** (0.000)	1			
11DA	-0.288*** (0.000)	-0.018 (0.118)	-0.142*** (0.000)	-0.058*** (0.000)	-0.087*** (0.000)	-0.123*** (0.000)	0.000 (0.981)	-0.263*** (0.000)	-0.209*** (0.000)	0.506*** (0.000)	1		
12Boardsize	-0.027** (0.022)	-0.004 (0.703)	-0.079*** (0.000)	0.007 (0.527)	0.002 (0.852)	-0.171*** (0.000)	-0.556*** (0.000)	-0.183*** (0.000)	-0.152*** (0.000)	0.246*** (0.000)	0.138*** (0.000)	1	
13Boardmeet	-0.092*** (0.000)	-0.028** (0.015)	-0.089*** (0.000)	0.004 (0.704)	-0.002 (0.846)	-0.026** (0.026)	0.038*** (0.001)	-0.080*** (0.000)	-0.071*** (0.000)	0.284*** (0.000)	0.299*** (0.000)	0.014 (0.227)	1

Note: ***, ** and * indicate that the correlation coefficient passed the significance testing at the 1%, 5%, and 10% levels, respectively.

The correlation coefficient between the integration degree of the chairperson and general manager and ROA/ROIC is 0.085/0.034. This value has consistently passed the significance test at 1% level. This finding indicates that promoting the chairperson to serve as general manager improves corporate performance to a certain extent. In addition, the correlation coefficient of the ROIC and ROA/ROIC is -0.001/0.003, failing to pass the significance test. Therefore, the value and significance of independent directors in state-owned enterprises' corporate governance are debatable.

In addition, the long-term incentive mechanism design of the board of directors and management can significantly improve modern enterprises' corporate governance. Table 2 shows that the correlation coefficients between the board of directors' shareholding ratio and (a) ROA and (b) ROIC are 0.174 and 0.034, respectively. These values have consistently passed the significance test at 1% level. The correlation coefficients between the management's shareholding ratio and (a) ROA and (b) ROIC are 0.158 and 0.034, respectively. These values have also consistently passed the significance test at 1% level. This indicates that for modern enterprises in China, strengthening incentive mechanism construction is very important for the board of directors or for the management.

5.3 Multiple regression analysis

1. Overall hypothesis testing of research samples

Table 5.3 shows the regression analysis results of the entire sample, including all 7472 state-owned and non-state-owned firm-year observations. The regression results in Table 5.3 show that the regression coefficient of the top five shareholders' shareholding ratio is 0.086. This value has passed the significance test at 1% level. This finding indicates that the higher the ownership concentration, the more corporate governance level improvement becomes beneficial, promoting business performance. Hence, hypothesis 1 is supported. Furthermore, Table 4 shows that the regression coefficients of the ratio of the second-largest shareholder to the first largest shareholder's shareholding ratio and that of the sum of the second to fourth largest shareholder's shareholding ratio to the first largest shareholder's shareholding ratio are 0.120 and 0.115, respectively. These values

have consistently passed the significance test at 1% level. The regression analysis results of the relationship between state-owned enterprises' ownership concentration, degree of check-and-balance ownership structure, and corporate performance show that, under China's current institutional context, high ownership concentration degree contributes to improving corporate operating performance. However, an appropriate degree of check-and-balance ownership structure is also conducive to improving business performance.

In addition, the regression coefficient between the degree of separation of the positions of chairman and the general manager is 0.858, which passed the significance testing at the level of 1%, showing that being both CEO and chairperson of the board worsens firm performance. This supports the research hypotheses, which is consistent with the conclusions of Fama and Jensen (1983), Shen Yifeng and Zhang Junsheng (2002), Du Shengli and Zhai Yanling (2005), Bai Chongen et al (2005). The regression coefficient of the proportion of independent directors is -1.827, which have passed the significance testing at the level of 1%, indicating that simply increasing the proportion of independent directors decreases the business performance of enterprises. This is different from the conclusions of Wang Yuetang et al. (2006) and Li Wei'an and Tang Yuejun (2006) in certain ways, but is consistent with many research conclusions such as that of Qu Liang (2017). For a long time, scholars at home and abroad have been controversial about the independence and professionalism of independent directors of Chinese enterprises. Scholars who hold negative views on independent directors believe that due to the lack of external restraint mechanisms such as the reputation mechanism of independent directors, independent directors are more likely to be "flower-vase directors" in the current institutional context of China, and the lack of independence of independent directors is the major reason for the restriction on their real functions. Lack of independence of independent directors is to a great extent the result of the lack of a good nomination system and relevant operating mechanisms in China to ensure real independence of independent directors from major shareholders and management. Besides, independent directors are underpaid, leading to a low motivation in fulling

their responsibility. Therefore, the mandatory requirements of the company law on the proportion of independent directors are more of a "compliance" arrangement in the corporate governance arrangements of state-owned enterprises.

At the same time, Table 5-4 also shows that the regression coefficient of the shareholding ratio of the board of directors and the shareholding ratio of senior executives were 4.075 and 4.730 respectively, and both have passed the significance testing at the level of 1%, which is consistent with the research conclusions including those of the aforementioned Murphy (1985), Zhang Junrui (2003), Liu Bin et al. (2003). This shows that strengthening the design of short-term and long-term incentive mechanisms for board members and senior management team members does help to strengthen their focus on the business performance of state-owned enterprises. In particular, the long-term incentive mechanism represented by equity incentives is easier to achieve the "incentive compatibility", so as to prompt the board of directors and senior management to pay attention to the long-term development of state-owned enterprises.

Furthermore, this research comprehensively considers corporate governance impacts on corporate performance from various dimensions, as shown in regression results 8. The regression results in the table show that the regression coefficients of ownership concentration, the proportion of the shareholding ratio of the second-largest shareholder to that of largest shareholder, the proportion of the total shareholding ratio of the second to the fourth largest shareholder to the shareholding ratio of the first largest shareholder, the board of director and general manager integration, the ROID, the board of directors' shareholding ratio, and the management's shareholding ratio are 0.082, -1.777, 0.186, 0.283, -2.652, 1.992, and 1.978, respectively. These values have passed the significance test of 1% level. Regression results 1–7 show that the empirical results are consistent. However, the regression coefficients of the degree of check-and-balance ownership structure manifested by the ratio of the second-largest shareholder's shareholding ratio to that of the first largest shareholder significantly differ.

Table 5.3 Regression analysis results of relevant research hypotheses

	1	2	3	4	5	6	7	8
	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficien t (T VALUE)	Coefficien t (T VALUE)	Coefficie t (T VALUE)	Coefficient (T VALUE)	Coefficie nt (T VALUE)
Constant	-4.760*** (-12.401)	-0.295 (-0.724)	-0.835** (-2.309)	-1.956*** (-4.345)	0.764 (1.402)	-6.573*** (-13.432)	-4.756*** (-9.555)	-8.700*** (-17.430)
Size	0.507*** (27.726)	0.561*** (28.935)	0.587*** (32.555)	0.614*** (28.270)	0.556*** (24.757)	0.789*** (33.776)	0.721*** (30.386)	0.725*** (33.627)
DA	-0.096*** (-83.295)	-0.106*** (-95.165)	-0.106*** (-92.816)	-0.105*** (-93.993)	-0.105*** (-75.716)	-0.101 (-72.967)	-0.102*** (-73.598)	-0.093*** (-73.454)
Boardsize	0.018 (1.552)	-0.040*** (-3.261)	-0.039*** (-2.874)	-0.003 (-.222)	-0.079*** (-4.711)	0.015 (1.034)	0.005 (.382)	0.000 (-0.036)
Board meeting	-0.024*** (-5.189)	-0.037*** (-10.154)	-0.047*** (-11.965)	-0.046*** (-8.163)	-0.041*** (-8.301)	-0.049*** (-8.269)	-0.046*** (-7.784)	-0.028*** (-5.087)
Year	_____	_____	_____	_____	_____	_____	_____	_____
CR5	0.086*** (64.380)							0.082*** (55.292)
ZIndex		0.120* (1.897)						-1.777*** (-13.085)
ShareB2-4			0.115*** (4.771)					0.816*** (12.672)
Duality				0.858*** (20.951)				0.283*** (5.700)
ROID					-1.827*** (-3.667)			-2.652*** (-5.776)
BoardShare						4.075*** (41.861)		1.992*** (13.133)
TMTShare							4.730*** (35.484)	0.978*** (4.405)
F	2750.535	1612.522	2808.645	2199.790	944.445	1381.613	1205.024	1219.905
D-W	2.010	1.993	1.994	2.002	1.996	2.000	2.001	2.104
Adj.R ²	0.746	0.633	0.750	0.704	0.503	0.597	0.563	0.697
N. of observations	7472	7472	7472	7472	7472	7472	7472	7472

Note: ***, ** and * indicate that the regression coefficients passed the significance testing at the levels of 1%, 5% and 10%, respectively.

2. State-controlled versus non-state-controlled companies Ultimate controllers' category differences may lead to varied influences of ownership concentration and degree of check-and-balance ownership structure on corporate performance. In China actual controller refers to persons, other than shareholders of companies, who are the actually controllers through investor relations, agreement, or other arrangements. Companies with state-owned organizations as actual controllers will be defined as state-owned companies, otherwise they are non-state-owned companies. This means that state-owned enterprises include central and local state-owned enterprises, while non-state-owned enterprises include private enterprises and foreign-funded enterprises. Thus, state-owned holding and non-state-owned holdings are obtained based on these category differences. Table 5.4 shows the regression analysis results. Table 5.4 displays that the regression coefficients of ownership concentration and corporate performance of state-and non-state-controlled companies are 0.022 and 0.108, respectively. These values have passed the significance tests at 1% levels together. This finding indicates that the relationship between the degree of ownership concentration and corporate performance does not significantly differ under different types of ultimate controllers. It means that ownership concentration has a positive correlation with enterprise performance, and the grouped test has the same result as the full-sample test.

In the grouping test of the degree of check-and-balance ownership structure, the regression coefficients of the degree of check-and-balance ownership structure and the corporate performance of state- and non-state-owned holding companies are -1.012 and 0.076, respectively. The previous value has passed the significance tests at 1% levels. This result shows that when considering the design of equity balance degree separately, state-owned companies differ from non-state-owned companies in equity balance degree construction. ZIndex is significantly negatively related to performance in state-owned firms but not in non-state-controlled firms. The largest ownership stake is in the hand of the government in state-owned firms, who delegate their job to the chairperson/general manager, and the latter does not have any stock ownership or has a small

ownership. Therefore the chairperson/general manager state-owned firms does not have a strong incentive to monitor the firm, leading to poorer performance.

In addition, when other corporate governance variables are considered comprehensively, regression coefficients of ownership concentration and enterprise performance of state-owned and non-state-owned companies are 0.022 and 0.016, respectively, both passing the significance test and consistent with the proceeding research conclusion. However, in terms of the degree of equity balance of the second-largest shareholder and the largest shareholder, regression coefficients of ownership concentration and enterprise performance of state-owned companies and non-state-owned companies are -0.479 and -2.021, respectively, with the latter passing the significance test at the level of 1%. This indicates that when the building of other corporate governance dimensions is considered comprehensively, check and balance between the second-largest shareholder and the largest shareholder is over-emphasized in both state-owned and non-state-owned companies, which leads to a conflict of interest between substantial shareholders more easily and in turn impedes the improvement of overall and long-term enterprise performance. This finding indicates that the relationship between the degree of check-and-balance ownership structure and corporate performance does not significantly differ under different types of ultimate controllers.

Table 5.4 Ownership concentration and degree of check-and-balance ownership structure: State-owned vs. Non-state-owned enterprises

Group	Grouping of ownership concentration (single dimension)		Grouping of ownership check-and-balance degree (single dimension)		Grouping of ownership characteristic (multiple dimensions)	
	state-owned holding	non-state-owned holding	state-owned holding	non-state-owned holding	state-owned holding	non-state-owned holding
	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)
Constant	-6.463*** (-8.024)	-12.359*** (-21.241)	-6.180*** (-7.605)	-3.524*** (-6.186)	-6.933*** (-7.517)	-15.688*** (-21.810)
Size	0.695*** (17.362)	0.772*** (29.251)	0.738*** (18.924)	0.695*** (24.597)	0.759*** (19.539)	0.913*** (31.268)
DA	-0.097*** (-39.465)	-0.090*** (-63.096)	-0.098*** (-45.748)	-0.102*** (-63.762)	-0.090*** (-39.240)	-0.089*** (-53.002)
Boardsize	0.042*** (1.666)	0.129*** (8.085)	0.060** (2.385)	0.049*** (2.771)	0.040 (1.596)	0.129*** (5.515)
Board meeting	-0.069*** (-6.310)	-0.025*** (-4.619)	-0.064*** (-7.595)	-0.054*** (-8.018)	-0.075*** (-6.464)	-0.029*** (-4.367)
Year	—	—	—	—	—	—
CR5	0.022*** (7.397)	0.108*** (71.735)			0.022*** (7.015)	0.106*** (57.978)
ZIndex			-1.012*** (-6.581)	0.076 (0.856)	-0.479 (-1.420)	-2.021*** (-11.570)
ShareB2-4					-0.577*** (-3.176)	0.948*** (12.081)
Duality					0.496*** (2.841)	-0.010 (-0.167)
ROID					-2.577*** (-3.021)	-0.193 (-0.289)
BoardShare					6.453*** (3.227)	0.993*** (5.457)
TMTShare					16.537*** (5.387)	1.444*** (6.186)
F	325.638	1603.081	396.130	612.003	241.992	756.753
D-W	1.970	2.024	1.959	2.016	1.976	2.022
Adj.R ²	0.586	0.695	0.632	0.465	0.652	0.654
N. of observations	1839	5633	1839	5633	1839	5633

3. Robustness test

This research further utilizes ROIC as a corporate performance measure to empirically test the relationship between corporate governance structure and corporate performance and ensure the reliability of the empirical research results and robustness of the research conclusions. Table 5.5 shows the regression results, indicating that the regression coefficients of ownership concentration, board of director and general manager integration, board shareholding ratio, and management

shareholding ratio are 0.086, 0.780, 3.648, and 4.268, respectively. These values are consistent with the empirical results shown in Table 5.3.

Table 5.5 Governance and ROIC (Return on investment capital): Robustness check

Variable	1	2	3	4	5	6	7	8
	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)	Coefficient (T VALUE)
Constant	2.728*** (4.808)	6.606*** (12.383)	7.484*** (17.000)	6.687*** (10.966)	6.226*** (10.255)	.339 (.557)	1.993*** (3.532)	.285 (.414)
Size	0.111*** (3.855)	0.213*** (8.374)	0.158*** (9.281)	0.104*** (3.517)	0.204*** (8.240)	0.419*** (14.871)	0.370*** (13.792)	0.159*** (5.385)
DA	-0.017*** (-9.408)	-0.026*** (-14.253)	-0.025*** (-15.529)	-0.037*** (-20.105)	-0.025*** (-15.236)	-.017*** (-10.258)	-0.023*** (-11.757)	-0.021*** (-12.862)
Boardsize	0.015 (.929)	-0.075*** (-4.816)	-0.061*** (-3.542)	0.123*** (7.634)	-0.064*** (-2.768)	.008 (.408)	-0.024 (-1.375)	0.111*** (4.743)
Boardmeet	-0.109*** (-14.602)	-0.141*** (-21.329)	-0.125*** (-20.374)	-0.083*** (-10.650)	-0.137*** (-18.775)	-.130*** (-26.911)	-0.136*** (-17.279)	-0.045*** (-6.341)
Year	_____	_____	_____	_____	_____	_____	_____	_____
CR5	0.086*** (48.082)							0.102*** (51.058)
ZIndex		-0.494*** (-5.350)						-2.296*** (-12.566)
ShareB2-4			-0.144*** (-3.172)					0.985*** (12.222)
Duality				0.780*** (13.607)				0.071 (1.042)
ROID					0.471 (0.765)			-3.036*** (-4.685)
BoardShare						3.648*** (26.245)		1.148*** (5.051)
TMTShare							4.268*** (25.254)	1.789*** (5.770)
F	743.801	201.842	238.032	183.171	195.273	364.469	249.619	474.565
D-W	1.976	1.958	1.956	1.989	1.958	1.943	1.954	1.997
Adj.R ²	0.443	0.177	0.202	0.164	0.172	0.280	0.210	0.472
Sig.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N. of observations	7472	7472	7472	7472	7472	7472	7472	7472

Note: ***, **, and * indicate that the regression coefficients passed the significance test at the levels of 1%, 5%, and 10%, respectively.

The results indicate that strengthening ownership concentration, promoting the chairperson to serve as the general manager, and strengthening board of directors and management's long-term incentive mechanism significantly improve enterprises' ROIC. In addition, the regression coefficient of the proportion of independent directors is 0.471. Although this value has failed to pass the significance test, it is highly consistent with the regression results of independent directors in Table 5.4. In other words, the independent director system's role in improving effective board governance

remains a debate under the current institutional context in China. However, the regression coefficients of the proportion of the second-largest shareholder to the first largest shareholder's shareholding ratio and of the sum of the second to fourth largest shareholder to the first largest shareholder's shareholding share are -0.494 and -0.144, respectively. Both values pass the significance test at the 1% level, which differ from the research results in Table 5.3. The table shows that the results negatively impact the owner's ROE improvement. However, the degree of check-and-balance ownership structure improves the company's overall operating performance.

PART 2 TEMASEK MODEL IN SINGAPORE: A CASE STUDY OF THE MIXED EQUITY REFORM OF TIANJIN NORTH TRUST COMPANY

CHAPTER 6 CORPORATE GOVERNANCE AT HOME AND ABROAD

6.1 Temasek mode

Established in 1974, Temasek Holdings (Private) Limited (hereinafter referred to as “Temasek”) is a market-based government investment company, with its 100% of equities held by the Ministry of Finance Singapore. The market value of its stock accounts for 47% of the value of the Singapore stock market, and its operating income accounts for 13% of the GNP. As at September 2017, Temasek's portfolio has included 100 companies, including such eight fields as financial services (25), telecommunications media and technology (23), transportation and industry (17), consumption and real estate (17), and life sciences and comprehensive agriculture (4), energy and resources (3), multi-industry funds (8), and others (including credit) (3). It has become the dominator of Singapore's economic lifeline and the operator of the government in the state-owned assets.

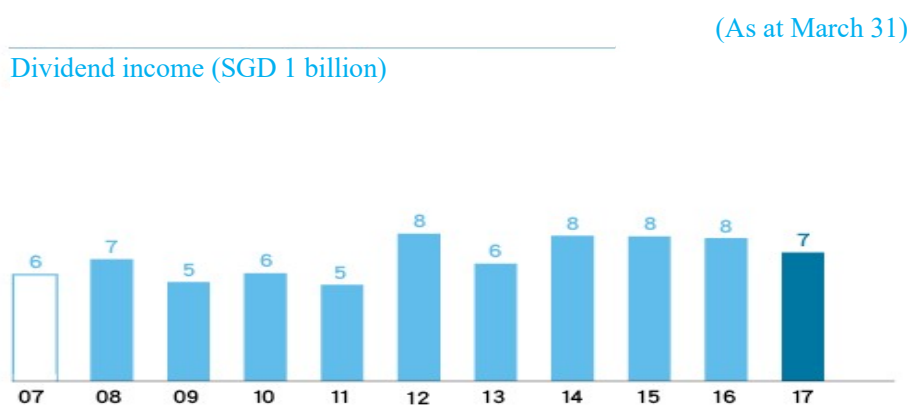
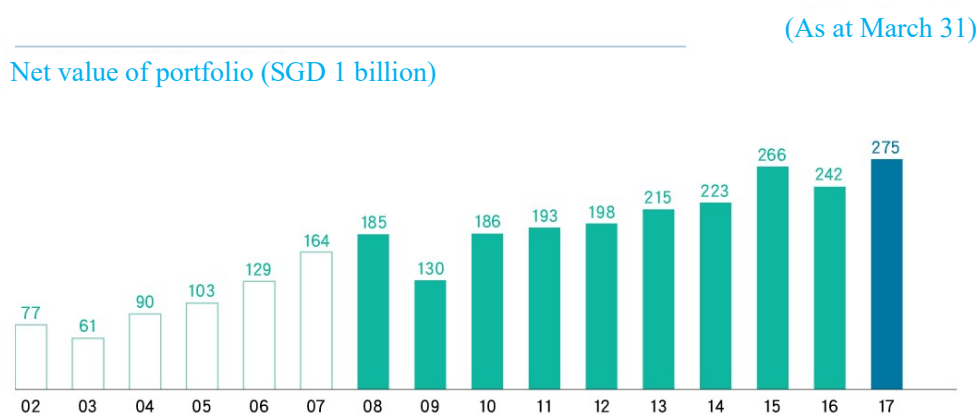
The so-called Temasek mode is to build a three-tier structure including government, state-owned assets operating platforms and enterprises. The control by the government at the macro level and the operation by the professional manager at the micro-operation level form a unique set of "Temasek mode" for the reform of state-owned enterprises and the management on state-owned assets. The separation of ownership and management rights is the essence of the Temasek mode. The Temasek mode aims to separate the responsibility of owners of commercial companies from the responsibility of the Singapore Finance Minister for formulating national policies so that the owners of commercial companies may specialize in managing the capital previously invested by the state in various country-related enterprises.

The most prominent part of Temasek's corporate governance design is the design of the board structure. Temasek's board of directors is composed of government officials, affiliate leaders, and

civilians. It usually has 10 members. Government officials come from different departments, including the Presidential Palace, the Ministry of Finance, the Trade Development Division, etc. The affiliate leaders are senior managers with outstanding performance and good reputation. The civilians include private entrepreneurs, scholars and other professionals. In such a "diversified" and balanced board of directors, the three types of members counterbalance each other in cooperation, better achieving the balance between the state shareholders and the board of directors, and in essence the balance between state control and market operations. Temasek's most prominent corporate governance feature is the independent board of directors' pivotal role in state-owned capital marketization. First, the check-and-balance system between the president, government, and Temasek enables Temasek's board of directors to be independent of administrative intervention and fully follow market principles. As a result, the goal of maximizing national interests is realized, serving as a "separation wall" between the administration and market. Moreover, the board of directors submits annual transcripts to the Ministry of Finance. Second, the board of directors' internal and external check-and-balance structure ensures the balance between the enterprise's long-term national interests and business performance. Shareholder and official directors act in favor of government investors as the minority in the board of directors. They are more concerned with the country's macro-fairness factors and perform the supervisory role on behalf of the government to ensure that Temasek's board decisions reflect the national will. The independent directors should occupy the majority for the best functioning of the board of directors. The independent directors comprise world-class business elites who not only reduce the shareholder directors' ability to intervene on the board and enhance the board's objectivity and independence but also improve the board's market decision-making capacity. Hence, Temasek can professionally to make high-level business decisions. Third, the check-and-balance mechanism between the board of directors and management ensures the separation of supervisory and management powers. On Temasek's board of directors, the president is the only executive director and thus does not act as the chairperson or audit committee member nor he/she is involved in his/her performance evaluation and salary decisions. This structure enables an objective

and independent relationship between the board of directors and management. Thus, supervision and management powers are separated accordingly.

As at March 31, 2017, the net value of Temasek's portfolio hit a new record high at SGD 275 billion, SGD 33 billion more than that of the previous fiscal year. For the fiscal year ended March 31, 2017, dividend income from portfolio companies was SGD 7 billion, approximately 19 times the interest expenses for the current fiscal year, and accumulated dividends in the 11-year period from 2007 to 2017 reached SGD 74 billion. Temasek's compound annualized shareholder return rate has reached 15% since its establishment in 1974. The average return of the 2007–2017 S&P 500 Value Index ETF-iShares (IVE) is 1.05%, and the average annual investment return of China's 985 A-share companies listed before 2000 is 3% from 2007 to 2017. These values are much lower than Temasek's return on investment (ROI).



6.2 Mixed-ownership reform of Tianjin state-owned enterprises

In order to thoroughly implement the spirit of the Guiding Opinions of the Central Committee of the Communist Party of China and the State Council on Deepening the Reform of State-owned Enterprises and the Opinions of the State Council on Developing the Mixed-ownership Economy by State-owned Enterprises, grasp the important opportunity for Tianjin's development, accelerate the pace of the reform of state-owned enterprises and invigorate state-owned enterprises, Tianjin has also actively accelerated the discussion and practices of the mixed-ownership reform of state-owned enterprises. In June 2017, Tianjin State-owned Assets System launched 194 mixed-ownership reform projects of more than 40 municipal groups. Among them, there were 17 first-tier enterprises involved in various industries and fields such as industrial manufacturing, trade logistics, investment services, construction, public services, finance and culture. The proposed method of attracting capital is quite flexible, including consolidation, increase in capital and share, transfer of property rights, or a combination of several ways. The equities were so open that the projects which allow an investor to hold 1/3 equities or more account for 89%. The projects in which an investor's shareholding ratio is no less than 50% account for more than one-third. The projects in which an investor's shareholding ratio is 30%-50% account for 55%.

With the continuous exploration of the mixed-ownership reform of Tianjin state-owned enterprises, how to improve the corporate governance structure and modern enterprise system, stimulate the impetus, vitality and competitiveness of state-owned enterprises, ensure the preservation and appreciation of state-owned assets and promote the reform of state-owned enterprises to achieve new breakthroughs are the priority to be resolved by the Tianjin Municipal Committee and the Tianjin Municipal Government.

First, the Temasek mode may provide guidance for Tianjin's reform of government and platform relations

According to Singapore's Constitution and laws, the President of the Republic of Singapore or the Singapore Finance Minister as Temasek's shareholder is not involved in Temasek's investment, disposal or any other commercial decisions, except for the decisions relating to the protection of Temasek's past reserves.

At present, the government investment platforms of Tianjin State-owned Assets System mainly include such enterprises as Tianjin Tianbao Holdings Co., Ltd., Tianjin Jinlian Investment Holdings Co., Ltd. and Tianjin Jinrong Investment Service Group Co., Ltd. It is worth exploring how the Tianjin Municipal Government will theorize its relationship with the government investment platforms by learning from the mode of the relationship between the Singapore Government and Temasek in the future.

Second, the corporate governance design of Temasek may provide a reference for that of Tianjin government investment platforms

Temasek manages state-owned enterprises relying on property rights. That is to say, Temasek is a commercial entity that exercises the power of the investor on its affiliates (Temasek-linked companies) according to the authorization. It has separated government functions from enterprise management. Therefore, Temasek does not participate in the business decision-making and operations of portfolio companies. As emphasized in Temasek's 2017 Annual Report, "As a shareholder, we advocate good corporate governance and values in our portfolio companies. We hope that the board of directors of the portfolio company will formulate a development strategy, and the management will spend time to achieve long-term sustainable returns." Temasek emphasizes the channels of corporate governance promote the invested companies to create value for shareholders. At the same time, through expressing the opinions similar to the "Letter on shareholders opinions", "we regularly review the major portfolio companies to understand their value potential and share our views with the companies' board of directors and management for reference".

According to the Charter of Temasek, Temasek is "an investment company and a commercial entity which holds and manages our assets according to business principles", aims to perform "the responsibility of owners of the commercial company" and exercises the power of the investor on its affiliates (Temasek-linked companies) according to the authorization. In the context of China, its duty is to separate government functions from enterprise management, authorized to exercise the responsibility of the investor, and preserve or increase the value of the state-owned capital by a commercial operation.

Take Tianjin Tianbao Holdings Co., Ltd. as an example. Tianjin Tianbao Holdings Co., Ltd. is a large wholly state-owned company invested by the Tianjin Free Trade Zone Management Committee and is authorized by the Management Committee to exercise the operation and management functions of state-owned assets. In 2017, Tianjin Tianbao Holdings Co., Ltd. intended to introduce strategic investors with the same strategic goal, strong comprehensive strength and matched primary business structure through equity transfer to hold 30% of its equities, and was expected to introduce funds of RMB 5.03 billion. After the mixed-ownership reform, how to improve the corporate governance of Tianjin Tianbao Holdings Co., Ltd. and ensuring that the assets operation and management functions work better are urgent priorities.

Third, the corporate governance design of participating and holding enterprises of Temasek may provide a reference for that of Tianjin government investment platforms

The daily management and business decisions of Temasek's portfolio companies are the responsibility of their respective board of directors and management. Temasek does not participate in their business decisions or operations. Temasek supports the establishment of a board of directors with high-level and diversified talents with extensive business experience to guide and support senior management. At the same time, Temasek advocates that the board of directors shall be independent of management to achieve effective supervision over the management. At the level of governance structure of the participating and holding enterprises of Singapore's Temasek, the establishment of

the board of directors has drawn a clear line between the government and Temasek, Temasek and the invested companies. The board of directors of the state-owned enterprises invested by Temasek plays the role of a “firewall” and blocks the improper involvement of the government.

At present, Tianjin Northern International Trust Co., Ltd. is a trust enterprise invested by various types of shareholders including Taida Holdings (holding ratio: 32.33%), Jinlian Group (holding ratio: 11.21%), Teda Stock (5.43%), Ningfa Group (holding ratio: 4.75%), CNOOC (shareholding ratio: 3.89%), Tianjin Tianyao (shareholding ratio: 3.37%), Da'an Real Estate (shareholding ratio: 3.37%), Jindong Real Estate (shareholding ratio: 0.26%), CITIC Tianjin Industrial Development (shareholding ratio: 0.18%) and other shareholders (shareholding ratio: 35.22%), but in recent years, the business transformation and development pressure of the company continues to increase due to its insufficient capital.

In 2017, to solve problems, such as insufficient capital strength, business transformation and development, and optimized management processes, Northern Trust intends to introduce through property rights transfer and capital increase 3-6 private capital with suitable strategy, complementary business and with industrial investment, cross-border financial services and professional background in the Internet field, and requires that the shareholding ratio of state-owned capital shall be within the range of 34%-50%; the shareholding ratio of the private capital shall be within the range of 50%-66%, and the shareholding ratio of each private capital shall not exceed 20%, and the estimated capital to be introduced is RMB 6-8 billion.

For Northern International Trust Co., Ltd., which intends to get rid of the difficulties through mixed-ownership reform, how to scientifically construct an effective corporate governance mechanism after the introduction of private capital, to ensure the efficient operation of the company, to effectively protect the interests of private capital, and to ensure the preservation and appreciation of state-owned capital? This is the top-level system design problem that must be solved before the mixed-ownership reform.

6.3 Differences between the China model and Singapore model

The success of state-owned enterprises' mixed-ownership reform in China depends not only on the corporate governance structure of state-owned enterprises, but also on China's political and economic systems, social and cultural environment and other external institutional environmental factors. In these respects, there is a big difference between Singapore and China. Therefore, China's state-owned enterprises cannot simply copy Singapore's Temasek mode. It is necessary to thoroughly analyze the applicable environment and conditions of the Temasek mode and make targeted optimization and improvement based on such analysis while considering the actual operating environment of the mixed-ownership reform of China's state-owned enterprises.

China adopts the basic economic system in which public ownership is the mainstay and economic entities of diverse ownership develop together, but the basic system of Singapore is private ownership supplemented by public ownership. According to the data published by the SASAC, by the end of 2015, the gross value of assets of state-owned enterprises in China was RMB 119.2 trillion, of which the gross value of the assets of central enterprises was RMB 47.6 trillion. However, Singapore is small country, the enterprises under the management of Temasek, regardless of economic volume, number of personnel, management and operational complexity, are quite different from that China. The mixed-ownership reform of China's state-owned enterprises shall, under the premise of maintaining the dominant position of the state-owned economy, improve the competitiveness of state-owned enterprises by means of mixed-ownership reform; for the commercial and public welfare state-owned enterprises, the reform, development, supervision, determination of responsibilities and assessment shall be carried out on the basis of classification, and it is unadvisable to promote the adoption of a type of corporate governance model simply.

In addition, the policies of state-owned enterprise reform that China is advancing still need a certain period of time to test. Not all reforms can get effect instantly, and the effectiveness of policies needs time to test.

CHAPTER 7 EXPERIENCE OF SINGAPORE'S TEMASEK

MIXED OWNERSHIP REFORM

This chapter mainly introduces the basic content of Singapore Temasek mode, and summarizes the reference on corporate governance optimization design in the process of the mixed-ownership reform of China's state-owned enterprises.

7.1 Background introduction of Singapore Temasek mode

7.1.1 Basic information of Temasek

Founded in 1974, Temasek is an investment company with its headquarters in Singapore. The company has 10 offices worldwide and as of March 31, 2017, Temasek has investment portfolios totaling SGD 275 billion, mainly in Singapore and Asia.

Temasek's investment portfolios cover a wide range of industry sectors such as telecommunications, media and technology, financial services, transportation and industry, consumption and real estate, life sciences and integrated agriculture, as well as energy and resources. Companies subordinate to Temasek Holdings are also known as companies affiliated with Temasek or international united companies. Since its foundation in 1974, the total annual return rate of Temasek's compound annualized shareholders has been 15% upon calculation in Singapore dollars. Since its first rating in 2004, Temasek always has been awarded Aaa/AAA credit ratings respectively by Moody's and Standard & Poor's.

As of March 31, 2017, Temasek's net investment portfolios amounted to SGD 275 billion, creating a record high.

Net Value of Investment Portfolios (SGD 1 billion)



Figure 7.1 Changes in the Net Value of Temasek's Investment Portfolios in 2007-2017

In addition to the Singapore headquarters, Temasek also has offices in New York, San Francisco, Saint Paul and Mexico City of America, London of Europe, Beijing and Shanghai of China, and Mumbai of India and Hanoi of Vietnam.

Temasek, as an investment company under government operating in a market-oriented manner, the Ministry of Finance Singapore holds 100% equities in it, and its investment decisions are based on economic interests. The so-called Temasek mode is to build a three-tier structure including government, state-owned assets operating platforms and enterprises. The control by the government at the macro level and the operation by the professional manager at the micro-operation level form a unique set of "Temasek mode" for the reform of state-owned enterprises and the management on state-owned assets. The separation of ownership and management rights is the essence of the Temasek mode. In the Temasek mode, there is only the concept of state-owned capital and no concept of state-owned enterprises. State-owned capital, like private capital, pursues economic benefits and is the rate of ROI.

7.1.2 Temasek-linked companies

As the owner of the investment portfolios, Temasek has the flexibility of holding large investments in the long term or short term: to invest, sell out, or maintain liquidity at the right time. Over the past 15 years, Temasek's investment philosophy has remained largely unchanged. As an investor and asset owner, Temasek is committed to creating long-term sustainable returns.

Temasek's investment portfolios cover a wide range of industry sectors such as telecommunications, media and technology, financial services, transportation and industry, consumption and real estate, life sciences and integrated agriculture, as well as energy and resources. Temasek's investment activities will continue to revolve around Temasek's four major investment themes and the long-term trends lying in them:

- Economic entities in transformation

- Develop market potential for economic entities in transformation such as China, India, Southeast Asia and Latin America by investing in industries such as financial services, infrastructure construction and transportation logistics.

- Growing middle class

- Invest in telecommunications, media and technology, consumption and real estate industries with growing consumer demand.

- Enhanced comparative advantages

- Seek economic entities, enterprises and companies with unique intellectual property rights and other competitive advantages.

- Emerging leading companies

- Invest in companies with a solid domestic foundation and companies that have the potential to become regional or global leaders in the transformation process.

Table 7.1 Temasek Investments in Consumption and Real Estate

Investee	Shareholding ratio
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A.S. Watson Holdings Limited	25%
CapitaLand Group	40%
Tiffany	8%
M+S Pte. Ltd.	40%
Olam International	52%
Pulau Indah Ventures Sdn Bhd	50%
Surbana Jurong	100%
Ascendas Singbridge	51%
Mandai Park Holdings Pte. Ltd.	100%
Mapletree Investments	100%
SATS Ltd.	40%

Table 7.2 Temasek Investments in Financial Services

Financial services	Shareholding ratio
AIA Group	3%
China Construction Bank Corporation	4%
China Pacific Insurance (Group) Co., Ltd.	<1%
DBS Group	29%
Industrial & Commercial Bank of China Ltd.	2%
China Ping An Insurance (Group) Co., Ltd.	2%
Prudential plc	<1%
PT Bank Danamon Indonesia Tbk	67%
Standard Chartered PLC	16%

Table 7.3 Temasek Investments in Telecommunications, Media and Technology

Telecommunications, media and technology	Shareholding ratio
IHS Markit Ltd.	5%
Intouch Holdings Public Company Limited	20%
ST Telemedia	100%
Alibaba Group Holding Ltd.	1%
MediaCorp	100%
Singapore Telecommunications Limited	52%

Table 7.4 Temasek Investments in Life Science and Integrated Agriculture

Life science and integrated agriculture	Shareholding ratio
Celltrion, Inc.	14%
Gilead Sciences	1%
Thermo Fisher Scientific	<1%

According to geographical regions, Temasek made investments in five continents in 2017, with Singapore and China ranking top 2, 29% and 25% respectively, and Africa and Latin America the last, both 2%.

Table 7.5 Temasek investment shares in different regions, 2015-2017

Country & region/year	2017	2016	2015
Singapore	29%	29%	28%
China	25%	25%	27%
Other Asian countries and regions	14%	15%	15%
North America	12%	10%	9%
Australia and New Zealand	8%	9%	9%
Europe	8%	8%	8%
Africa, Central Asia, and the Middle East	2%	2%	2%
Latin America	2%	2%	2%
Total	100%	100%	100%

According to investment sectors, of Temasek investments, 25% are made in financial services, 23% in electronic media and technology, the highest, 4% in life science and integrated agriculture, 3% in energy and resources, the lowest.

Table 7.6 Temasek investment shares in different sectors, 2015-2017

Industry/year	2017	2016	2015
Financial services	25%	23%	28%
Telecommunications, media and technology	23%	25%	24%

Transportation and industry	17%	18%	17%
Consumption and real estate	17%	17%	15%
Life science and integrated agriculture	4%	4%	3%
Energy and resources	3%	3%	5%
Multi-industry fund	8%	7%	5%
Other (including credit)	3%	3%	3%
Total	100%	100%	100%

Seen from asset liquidity, of Temasek's investments, 40% are made in unlisted assets, 33% in liquid assets and listed assets (shareholding ratio $\leq 20\%$), 9% in listed large assets ($20\% \leq$ shareholding ratio $\leq 50\%$), and 18% in large listed assets (shareholding ratio $\geq 50\%$).

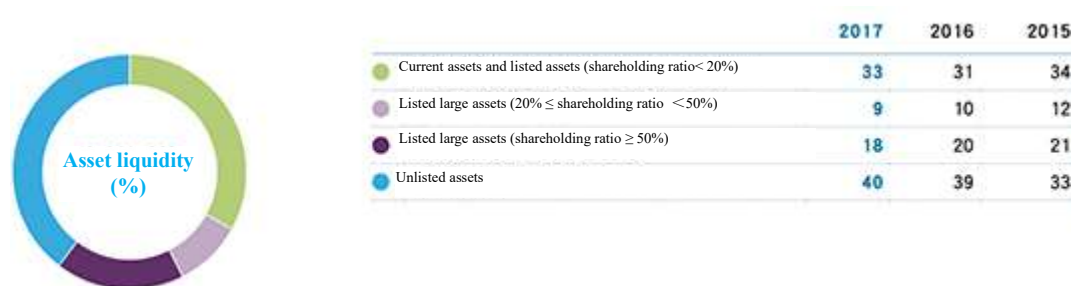


Figure 7.2 Distribution of liquidity of Temasek's assets, 2015-2017

7.2 Corporate governance practice of Temasek mode

The reason why Temasek can have good performance is closely related to its improved corporate governance mechanism design, reflected in many of its aspects such as shareholder governance, board governance and senior management incentives. As an active shareholder, Temasek advocates strong corporate governance in portfolio companies, including the establishment of a board of directors that consist of high-end, diverse talents with extensive business experience. Temasek's portfolio companies are directed and managed by their respective boards and management, Temasek having no part in their business decisions and operations. Similarly, Temasek's investments, sell-out

and other business decisions are carried out by their own boards and management. President of Singapore, or the Singapore Government, our shareholder, is not involved in Temasek's business decisions.

7.2.1 Design of shareholder governance mechanism

1. The Relationship between the Singapore Government and Temasek

From the perspective of whether the government directly assumes ownership as an investor in state-owned assets, there are basically two models in the world: one model is that the state establishes a special competent authority to assume ownership. The most typical countries with this method are Germany and France. In Germany, the Ministry of Finance assumes ownership on behalf of the state. It has important decision-making power in approving the establishment of state-owned enterprises and capital supply; more importantly, it knows about enterprise development through the board of supervisors, and guarantees the security and value-added of state-owned assets by appointing members of the board of supervisors and of the board of directors.

Another model is that state-controlled companies are established to assume ownership on behalf of the state. Countries including Italy and Singapore operate with this model.

Temasek is wholly owned by Singapore's Finance Minister. It also has its own assets as an investment holding company other than a shareholder's fund custodian. Temasek's shareholders must obtain approval from President before exercising their powers to appoint or remove Temasek's directors under the Singapore Companies Act. So is the case with the appointment and removal of CEO. As part of the Second Key philosophy, these constraints ensure that Temasek's directors and CEO will be integrity enough to protect Temasek's accumulated reserves in the past.

According to the dividend policy, Temasek declares dividends annually basis based on its profits. Part of Temasek's profits are sustainably distributed to shareholders in the form of dividends, and the other part are retained for reinvestment for future returns. The Board ensures that the dividend policy is balanced between the two and allows for the constitutional liability to protect Temasek's

accumulated reserves in the past. The board of directors proposes the amount of dividends to be distributed and submits it for consideration by shareholders at the annual general meeting.

Singapore's state-owned capital operations are characterized by three levels and three separations. The three levels are government department - statutory body and state-controlled company - affiliate. The three separations are separation of the government department and the statutory body and the state-controlled company, separation of the statutory body and the state-controlled company, and separation of administrative management and property management. As a government-holding company of Singapore, Temasek assumes ownership on behalf of Singapore, responsible for managing the shares owned by Singapore. It is an independent legal entity that serves as a bridge and separation barrier between the government and business entities to cut off their direct connections for the purpose of separate administration from management so that enterprises will be protected from unnecessary administrative intervention. Meanwhile, it is also transmissions between the government and enterprises because it connects them by guiding their direction through capital holding. Temasek participates in market competition through the shareholding control of affiliates, with a focus on capital and equity management, without any government involvement, thus realizing the management of operational state-owned assets.

2. The Relationship between Temasek and Temasek's affiliates

Temasek is an investment company that holds and manages Temasek's assets on the basis of business principles. As an active investor, we build portfolios by increasing, maintaining or reducing our investments. These investments, driven by business principles, aim to create and maximize risk-adjusted long-term returns. As an active shareholder, Temasek advocates advanced corporate governance in portfolio companies, including the establishment of a board of directors that consist of high-level, diverse talents with extensive business experience.

Temasek's portfolio companies are directed and managed by their respective boards and management, Temasek having no part in their business decisions and operations. Similarly, Temasek's investments, sell-out and other business decisions are carried out by their own boards and

management. President of Singapore, or the Singapore Government, a shareholder of Temasek, is not involved in Temasek's business decisions. Temasek is aware that different markets may have different corporate governance practices and norms. Even so, Temasek seeks to promote a sound corporate governance system in portfolio companies.

Temasek protects its own interests by exercising shareholder's rights, including voting at shareholder meetings. Temasek complies with Singapore laws and regulations, as well as laws and regulations where investments or operations occur. Temasek also expects its portfolio companies to comply with laws and regulations where investments or operations occur.

7.2.2 Design of board governance mechanism

Although Temasek is a company wholly-owned by Singapore's Ministry of Finance, the government has no direct part in its business decisions, but monitors it through the board of directors, which will submit performance reports and dividends to the government on an annual basis.

1. Design of Temasek's board structure

Singapore's Ministry of Finance implements the national economic strategy through Temasek's board of directors. Temasek's 10 board of directors consists of government officials, subordinate business leaders, and private citizens. Government officials come from different departments, including the Presidential Palace, the Ministry of Finance, and the Trade Development Board. In such a diversely balanced board of directors, the three types of members balance each other in cooperation, in a way to achieve a balance between the state shareholder and the board of directors, also the balance between state control and market operations.

Table 7.7 Temasek's Board of Directors

	Board of Directors	Executive Committee	Audit Committee	Leadership and Development Committee
Lin Wenxing	Chairman	Chairman		Chairman
Zheng Weiqiang	Vice Chairman	Member		
Ke Fengbao	Director		Chairman	

Chen Yuchong	Director		Member	
Wu Youren	Director	Member		
He Jing	Executive director and CEO	Member		Member
Li Tengjie	Director	Member		
Lian Zonglian	Director		Member	
Huang Zhixiang	Director	Member		
Zhang Mingjian	Director		Member	Member
Fu Sai	Director			Member
Marcus Wallenberg	Director			
Robert Zoellick	Director			

Currently, Temasek's board of directors that consists of 14 directors operates on a business model. Most of the directors are non-executive independent directors and are business leaders from the private sector. Given that Temasek is an institution in the 5th Schedule of the Constitution of Singapore, board members and CEO also have the additional constitutional liability to protect Temasek's accumulated reserves in the past.

The Chairman of each committee is held by a non-executive director who is independent of the management and each committee is granted with specific powers:

- Executive Committee

The Executive Committee is authorized to approve new investment and sell-out decisions within the specified time, and transactions beyond the specified limits will be approved by the Board of Directors. The Executive Committee provides minutes of meetings for circulation to board members. The Executive Committee has held three meetings during the current fiscal year.

- Audit Committee

The Audit Committee consists of independent directors. Its responsibilities include reviewing the internal control system, the financial reporting process, the audit process, and the regulatory compliance monitoring process to assist the board in fulfilling its supervisory duties. The Audit

Committee also reviews the scope and results of external audits and the independence of external auditors.

The Audit Committee is supported by the company's internal audit department. To ensure its independence, the internal audit department reports functionally to the Audit Committee and administratively reports to the CEO Office. In order to perform its functions effectively, the internal audit department has full and unrestricted access to all records, property and persons. In addition to regular audits of all offices, the internal audit department may conduct special audits at the request of the Board of Directors, the Audit Committee or the Senior Management.

- Leadership Development and compensation Committee

The Leadership Development and Compensation Committee is responsible for the leadership development plan for recommending directors and management to the Board of Directors, including succession plan for directors and CEO, and providing performance measurement and compensation plan-related guidelines and policies. The Leadership Development and Compensation Committee held four meetings during the financial year.

2. Temasek's Board Operations

The Board of Directors holds a meeting for two days on a quarterly basis. The Board will also hold meetings more frequently when necessary. The Board has held three meetings during the financial year.

The Board of Directors reserves the right to decide on the following matters:

- Overall long-term strategic objectives
- Annual budget
- Audited statutory annual financial statements
- Major investment and sell-out proposals
- Major financing proposals
- CEO appointment and succession plan
- Board changes

Resolutions at meetings of the Board of Directors and its committees may be voted for or against by telephone or video by a simple majority. Board resolutions in the form of circulation may only be effective subject to approval by at least two-thirds of the directors.

In case of any conflicts between board members' interests and Temasek's specific interests, they will evade relevant information, deliberations and decisions. Quarterly meetings of the Board of Directors also include executive meetings where non-executive directors attend but management does not attend. The annual review of the CEO succession plan is also included into executive meetings.

3. Board governance of Temasek's affiliates

Temasek supports the establishment of a board of directors that consists of high-level, diverse talents with extensive business experience to guide and support senior management. Temasek also encourages the board of directors of portfolio companies to identify and consider potential director candidates with relevant background and experience, and conduct an annual assessment of the board succession plan.

Given that board members have a fiduciary responsibility to protect the interests of their respective companies, Temasek advocates that the Board of Directors should be independent of management to achieve effective supervision of management. This philosophy also includes the establishment of a board of directors that consists of a number of independent and experienced non-executive directors to perform supervisory duties on management. Temasek argues that Chairman and CEO of a company should be held by different individuals. This is to ensure an appropriate balance of powers, promote independent decision-making, and strengthen the ability of the Board to monitor.

7.2.3 Design of Temasek's incentive mechanism

Temasek aims to create an efficient and responsible corporate culture, motivate employees to reflect and act from the perspective of asset owners, work with shareholders on sharing revenue and taking on losses, and allow for short-term performance and long-term value creation. Therefore, its incentive mechanism design adopts a combination of short-term, medium-term and long-term

incentive mechanisms, in a manner to effectively enhance the Board of Directors, senior management and employees to better act in the interests of shareholders.

Temasek and Temasek's affiliates generally adhere to three principles in determining the compensation of directors: contributions made by the directors; practices in line with the market and the industry; the compensation of independent directors must not be too high to avoid their dependence on the position. The compensation of Temasek's non-executive directors consists of two parts: exclusive compensation of the Board of Directors and compensation for service with the special committee. The former part consists of annual fixed compensation and board meeting allowances. The latter part is divided into the compensation of Chairman of the special committee and the compensation of members of the special committee. The compensation of non-executive directors of Temasek's affiliates are different, about SGD 10,000 every year. In addition, non-executive directors also enjoy certain benefits in office and business trips. President of a listed company of Temasek is paid with the basic annual salary in addition to the share award system in the form of stock options, restricted stocks and others.

Official directors and other directors have different incentives. In order to cut off the interests with the company and ensure fairness and neutrality, official members of the Board of Directors will not receive material compensation from Temasek; in order to stimulate the enthusiasm of such official directors, Singapore operates on an incentive mechanism of promotion due to excellent operations, so as to promote or demote the appointed directors depending on the company's operating conditions. Other directors generally carry out material incentives in accordance with market principles.

In terms of competitive talents, Temasek sets basic salaries based on relevant markets. Short-term bonuses depend on the completion of the annual target. Wealth-added bonus reserves depend on the difference between returns on investments and risk-adjusted capital costs, while negative returns determine the amount of money to be clawed back. Long-term incentives may be declared for up to 12 years and depend on market risks and claw-back mechanisms to achieve sustainable returns during the market cycle.

1. Annual cash bonuses – short-term incentive mechanism

Annual cash bonuses within the budget range depend on the performance of the company, the team and individuals. One of the annual performance objectives is that 3-year total shareholder returns are higher than 3-year annualized costs of long-term debts.

2. Wealth-added bonus reserve – medium-term incentive mechanism

Based on employees' performance and contributions during 4 years, part of Temasek's wealth-added bonus reserve (whether positive or negative) will be distributed to each employee's nominal wealth-added bonus reserve account.

If the balance of the wealth-added bonus reserve is positive, then senior management will receive incentives equal to no more than one-third of the balance of its wealth-added account, middle-level managers can obtain one-half of the incentives and other employees can obtain two-thirds.

Some of the balance is deferred in the form of r-scope and will be redeemed in the next three years. If there are negative returns, the surplus wealth-added bonus reserve balance will be clawed back in the future.

3. Investment sharing plan - long-term incentive mechanism

Employees may receive r-scope with performance or time as the cashing condition. The value of r-scope will increase or decrease with the company's annual total shareholder returns, thereby strengthening the company's asset owner culture. The term of r-scope is no more than 12 years.

Part of the positive wealth-added bonus will be used to distribute T-Scope. Such incentives will only be cashed in 5 years after Temasek's portfolio satisfies the stringent multi-year performance conditions. Another part of the positive wealth-added bonus is retained as the company's overall reserve for 3 to 7 years, and gradually distributed with time as the cashing condition. In the event of a claw-back, Temasek will first deduct it from the company's overall reserves. In case of any difference, it will be deducted from employees' wealth-added bonus reserve.

Temasek's annual operating budget also includes a limited S-Scope with time as the cashing condition, which will be cashed in five years from the third year after distribution.

7.3 Inspiration from the experience of Temasek Mode

This section mainly aims to summarize the implications on corporate governance Temasek's mode can bring to China's mixed ownership reform of SOEs and especially describe the applicable conditions of Temasek's mode.

7.3.1 Administration and management-separated control system

The core experience in Temasek's model is that it straightens the relationship between the government and the market, enables the market to be decisive in resource allocation, and better plays the role of the government in services and guidance. In Temasek's system, both parent companies and their subsidiaries reflect the separation of administration from management and separation of ownership from management. The government department does not transfer diversified social objectives to Temasek. The exercise of ownership is limited to the right to benefit, the right to know and very few major decision-making powers, without interfering with management or commanding cross borders. Parent companies and their subsidiaries have independent operations in a market-oriented competitive environment.

Temasek also functions in the separation of administration from management to separate the government and subsidiaries so that subsidiaries can help ultimately achieve capital preservation and appreciation. Temasek manages state-owned assets on behalf of the government, manages subsidiaries by means of property ties, and operates state-owned capital in a market-oriented manner.

As a government-owned commercial organization, the most important experience in Temasek's success lies in a perfect balance between the government's target design and commercial interests, that is, maximized compliance with business principles without violating the government's principles. This is also a major issue that stumps many countries in the management of state-owned assets. On the one hand, Temasek is a state-owned management organization in Singapore, whose development strategy is based entirely on the needs of Singapore's economic development. On the

other hand, as an investor and shareholder, Temasek is active in the governance of its wholly-owned and holding companies. It makes judgments based on business interests when increasing investments or exiting all enterprises, including going abroad and seeking various investment opportunities to achieve continuous growth of shareholders' long-term value. Therefore, Temasek is essentially a company that strictly complies with business principles.

7.3.2 Two rights-separated board system

An effective separation of ownership and management relies on the board system. Temasek's board system is finely designed: first, Chairman and Vice Chairman are from independent directors, and not from executive directors and shareholder directors; second, Chairman and Vice Chairman are not members of the Audit Committee; third, President is the only executive director and shall not concurrently hold Chairman; fourth, President is not a member of the Audit Committee; fifth, the government only sends one finance official to serve as a director of Temasek, indicating that such director complies with the principle of not interfering with Temasek's business operations; sixth, the government representative is not a member of the Leadership Development and Compensation Committee. This system avoids government intervention, prevents senior management from seeking personal gain, and guarantees audit independence.

The board arrangements with multiple checks and balances and regular replacements apply to Temasek but also to its subsidiaries. The establishment of boards of directors in different levels effectively prevents the government's intervention with the operations of Temasek and Temasek's affiliates, and also ensures the independence of the board of directors and effective exercise of duties in decision-making and supervision.

7.3.3 Highly independent market operations

Temasek does not engage in politics, nor is it necessary for Temasek to pay too much attention to government issues such as public interests and social development in investment decisions. The

Ministry of Finance, its sole shareholder, keeps some distance with Temasek, enabling Temasek to make the most effective decisions with compliance with the market rules. As a shareholder or even controlling shareholder, Temasek does not interfere with the daily operations of its subsidiaries, but regulates the company by setting profit requirements and assessing financial indicators.

7.3.4 Open and diverse international employment

Temasek insists on providing competitive salaries to tap talents with complementary experience and professional capabilities within the global and build a pool of talents who are familiar with different investment environments in different industries and regions. The reason for international employment is that Chairman of Temasek, as an external director, serves as Chairman of the Leadership Development and compensation Committee, free from control and interference from the government and other stakeholders.

7.3.5 Value-Oriented incentives and assessment

Temasek provides differentiated assessments of different entities, and effectively integrates long, medium and short-term incentives to achieve multi-phase incentives. Temasek has established salary assessment and incentives mechanisms that matches the enterprise scale, business performance and international markets to ensure management compensation will be in line with the value created by them for shareholders. The variable bonuses of key management personnel are paid later and linked to future performance. Temasek also ensures the efficient operation of the management team by establishing a system of measurable performance and with implementation methods for bonuses, equity, and options.

7.4 Application of Temasek's model in China

7.4.1 Singapore's unique legal environment

Just as the American scholar Blair studying corporate governance put it: A company is a legal design that collects and organizes capital, labor and other resources to produce and sell products and

services; corporate governance is an organic integration of legal, cultural and institutional arrangements. Temasek cannot be studied without consideration of the legal and cultural environment where Temasek's model exists. Seen from the different legal environment in China and Singapore, Singapore is one of the Anglo-American legal system countries known for severe laws, believing in severe punishments to curb crime or destructive behaviors. It is reported that illegal activities may lead to felonies; Singapore is therefore recognized to have a unique system of severe punishments in the world (Singapore is an Anglo-American legal system country with capital punishment that has carried out one of the highest percentages of executions in the world. According to UN estimates, of global execution cases between 1994 and 1999, Singapore ranked No. 1 in terms of the number of execution cases in the population (13.57 executions/million), far ahead Saudi Arabia (4.65 executions/million). Singapore's severe punishments may account for why Singapore gives full authorizations to boards of directors of state-owned companies such as Temasek. In China, where anti-corruption is still a very formidable task, can the top design for the reform of state-owned assets supervision only do subtraction? The board of directors-centered corporate governance also requires a good rule of law environment outside companies.

7.4.2 Differences in the Stage of Economic Development between China and Singapore

Seen from the stage of economic development, Temasek has developed from a state-owned capital investment company that shouldered Singapore's industrial development into a sovereign wealth fund ranking No. 9 in the world. Temasek earn profits from international markets and financial investments, which is quite different from China's current economic development stage and the mission to be undertaken by state-owned enterprises. Compared with developed countries such as the US, Europe and Japan, China is still a developing country with a poor GDP per capita. China's industrialization is still ongoing. Most enterprises are not able to reach commanding heights and have not yet formed a dominant industrial development model. There are few large multinational companies with international competitiveness and industrial integration. Therefore, developing the

real economy, revitalizing the national industry, promoting economic development and ensuring national economic security through state-owned enterprises are still important tasks of Chinese state-owned enterprises, especially of China's central state-owned enterprises.

7.4.3 Differences in Missions between Chinese and Singaporean State-Owned Enterprises

Seen from the actual conditions of Chinese and Singaporean state-owned enterprises, compared with Temasek that has invested USD 50 billion (about RMB 300 billion) in Singaporean state-owned assets, the total assets of Chinese state-owned enterprises (excluding finance) reached RMB 104 trillion. The assets of Chinese state-owned enterprises are distributed in many industries, very important and irreplaceable in implementing the state's macro-control policies, responding to international financial crises, handling various emergencies, fighting major natural disasters, safeguarding major national activities and maintaining economic and social stability, and leading in key technologies and major engineering projects such as manned space flight, lunar exploration, high-speed trains, UHV power grids, the Qinghai-Tibet Railway, the Three Gorges Project, West-East Gas Pipeline, and South-to-North Water Diversion. To say the least, China can have one more or less state-owned capital investment enterprise that seeks to make profits, but cannot go without many large state-owned enterprises (including state-owned financial institutions) that are related to the national economy and people's livelihood and undertake specific functions. Under the principle of market-oriented operation, the classification reform for state-owned enterprises still needs to balance objectives of industrial revitalization, technological innovation, public services and investment profits.

On the road of advancing and leading China's industrialization and informatization and ensuring national economic security, state-owned enterprises/state-owned capital with Chinese characteristics cannot be satisfied at making profits. While taking into account financial objectives, China's state-owned capital investment companies have to play their role in leading national economic security, industrial upgrading and transformation, and enterprise expansion and build market mechanisms where state-owned capital may enter and exit and enterprises can survive after

competition. In the case of a country as big as China, a unique economy facing so many complicated problems, it is unlikely for China to copycat any simple model, especially in the reform of state-owned enterprises and state-owned assets supervision. As noted above, Temasek's model can only provide us with reference, and cannot be simply mimicked.

CHAPTER 8 ANALYSIS OF THE MIXED OWNERSHIP REFORM OF TIANJIN

NORTHERN TRUST

With the continuous advancement of the reform of state-owned enterprises in Tianjin, how to effectively guide the corporate governance design after the mixed-ownership reform to promote the success of the reform of state-owned enterprises has become a realistic problem to be solved facing Tianjin state-owned enterprises. Therefore, based on the above theoretical analysis and empirical testing results and with reference to the experience in Temasek's corporate governance practices, this chapter will conduct an exploratory study of the mixed-ownership reform of Tianjin Northern Trust.

8.1 Background

8.1.1 Overview

1. Development History

Formerly known as Tianjin Economic and Technological Development Zone Trust and Investment Company, Northern International Trust Co., Ltd. was established with a registered capital of RMB 20 million in October 1987 subject to approval by the PoBC Tianjin Branch. In 1994, it was renamed Tianjin North International Trust and Investment Co., Ltd. It was then that the registered capital reached RMB 506.79 million after conversion of reserves into capital and capital increase.

In June 2002, it merged with Tianjin Binhai Trust and Investment Co., Ltd., increased capital by RMB 678.18 million to RMB 1,502.51 million, and was restructured into a company limited by shares and renamed Tianjin North International Trust and Investment Co., Ltd. In September 2002, it was re-registered subject to approval by the People's Bank of China. In October 2003, it was renamed as Northern International Trust and Investment Co., Ltd.

In December 2005, approved by Tianjin Municipal Government, the company was split, with a registered capital changed to RMB 1,000,998,873. In October 2008, it was renamed Northern International Trust Co., Ltd. subject to approval by China Banking Regulatory Commission.

2. Business Scope

(1) Fund trust;

(2) Movable property trust;

(3) Real estate trust;

(4) Securities trust;

(5) Other property or property trust;

(6) Engagement in investment funds as a sponsor of investment funds or fund management companies;

(7) Business restructuring, mergers and acquisitions, project financing, corporate finance, financial advisory, etc.;

(8) Securities underwriting as approved by the State Council;

(9) Intermediation, consulting, credit investigation and other services;

(10) Custody and safe deposit box;

(11) Inter-banking deposits, inter-banking loans at call, loans, leasing, investment, etc. under the inherent services;

(12) Guarantees to others with inherent assets;

(13) Inter-banking borrowing;

(14) Other services approved by laws and regulations or approved by China Banking Regulatory Commission.

8.1.2 Status quo of Northern Trust corporate governance

Northern Trust now has 27 shareholders, including 20 state-owned enterprise shareholders, 2 central enterprise shareholders and 5 private enterprise shareholders. In the shareholding structure, Tianjin SASAC owns 82.10%, central enterprise shareholders 4.07%, and private enterprises 13.83%. The controlling shareholder of Northern Trust is Teda Investment Holdings Co., Ltd., with 32.33% shares. The second-largest shareholder is Jinlian Group, accounting for 11.21% shares. All shareholders and their shares are shown in Table 8.1 below:

Table 8.1 Status Quo of the Shareholding Structure of Northern International Trust Co., Ltd.

	Name of Shareholder	Percentage		Name of Shareholder	Percentage
1	Teda Investment Holdings Co., Ltd.	32.33%	12	Tianjin Bonded Area Investment Co., Ltd.	1.35%
2	Tianjin Teda Thermal Power Co., Ltd.	4.31%	13	Tianjin Industrial Investment Co., Ltd.	1.02%
3	Tianjin Teda Electric Power Co., Ltd.	4.31%	14	Tianjin Ship Industrial Development Group	0.92%
4	Tianjin Teda Water Industry Co., Ltd.	4.31%	15	Tianjin Water Construction Co., Ltd.	0.35%
5	Teda Construction Group	1.35%	16	Tianjin Torch Technology Development Co., Ltd.	0.26%
6	Jinlian Group	11.21%	17	Tianjin Haijing Huili Industrial Co., Ltd.	0.20%
7	Tianjin Finance Bureau	6.23%	18	Tianjin Bohai Chemical Co., Ltd. Tianjin Chemical Plant	0.19%
8	Tianjin Pharmaceuticals Group	4.27%	19	Tianjin Feige Group	0.11%
9	Tianjin Financial Investment and Services Group	4.18%	20	Tianjin Dagu Chemical Investment Development Co., Ltd.	0.11%
10	Tianjin Tianyao Pharmaceutical Co., Ltd.	3.37%	21	China National Offshore Oil Bohai Co., Ltd.	3.89%
11	Tianjin Jinneng Investment Company	1.73%	22	CITIC Tianjin Development Co., Ltd.	0.18%

Northern Trust has established a reasonable organizational structure, including shareholders' meeting, board of directors, senior management, five specialized committees and business decision committees. The Board of Directors operates on an independent director system. There are 15 departments in management, including 8 first-line business departments, 6 second- and third-line internal management and support departments, in addition to the Audit Department directly responsible to the Board of Supervisors. Northern Trust has established three levels of internal control organizations. The Board of Supervisors is ultimately responsible for the Company's risk management. The Risk Control Committee, the Trust Committee and the Related Transaction Committee under the Board of Directors supervise and manage risks on behalf of the Board of Directors. Senior management organizes to implement the risk management policies of the Board of Directors. The Business Department is directly responsible for the prevention and control of business risks. The Risk Control Department, the Audit Department, and the Finance Department conduct effective supervision and control on various business risks before, during and after.

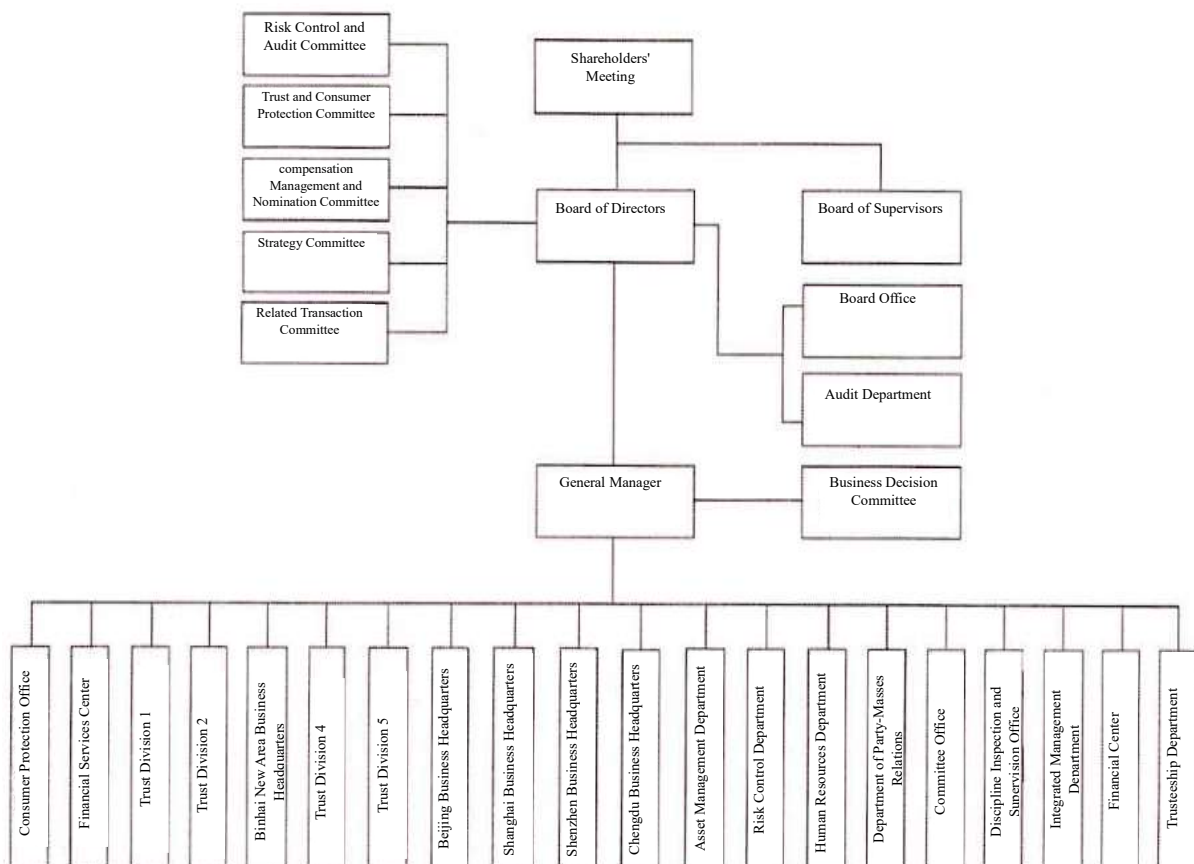


Figure 8.1 Governance structure of Northern International Trust Co., Ltd.

8.2 The situation facing the reform of Northern Trust

8.2.1 Tianjin fully promotes the mixed-ownership reform of state-owned enterprises

At the 11th Plenary Session of the 10th Tianjin Municipal Party Committee in the late 2016, Li Hongzhong, Secretary of the Tianjin Municipal Party Committee, proposed to speed up the reform of state-owned enterprises and increase efforts in developing the private economy; take the reform of mixed ownership as the general task, covering one requirement, the reform of all state-owned enterprises except for those involving national security, two parts, vigorously promoting the reform and steady, prudent, and safe handling of resettlement to achieve the goal of three first-batch and all in the right place. The three first-batch means that the Tianjin Municipal Party Committee requires to steadily promote the mixed reform of public welfare-related state-owned enterprises, comprehensively promote the mixed reform of competitive state-owned enterprises, and coordinate to promote the mixed reform of factor stripping and restructuring.

On January 13, 2017, Tianjin held a meeting to further deepen the reform of state-owned enterprises. Li Hongzhong, Secretary of the Tianjin Municipal Party Committee, reiterated at the meeting that as mixed ownership is an important breakthrough for the reform of state-owned enterprises, it is necessary to deepen the reform of systems and mechanisms to resolve insufficient dynamic kinetic energy, adjust and optimize the structure of public-owned and nonpublic economies, and construct a modern enterprise system. Tianjin should stimulate the vitality and competitiveness of state-owned enterprises through the mixed ownership reform, promote the reform of the shareholding structure, break the monopoly of a single structure of state-owned enterprises, actively introduce private capital, and release the squid effect. Then state-owned enterprises will truly become the main players in the modern market and improve their management.

On this basis, the Tianjin Municipal Party Committee and Municipal Government issued the Implementation Opinions on Further Deepening the Reform of State-Owned Enterprises, which clearly described the blueprint for the reform: by the end of 2017, 90% of state-owned funds would have been gathered in about 40 important industries and key areas; 600 low-efficiency enterprises would have exit the market, with the number of groups adjusted to around 35.

On June 6, 2017, at Tianjin Mixed Ownership Reform of State-owned Enterprises and Haihe Industry Fund Promotion Matchmaking Meeting held during China International Private Equity Forum in Tianjin, a total of 41 Tianjin Municipal Groups launched 194 mixed ownership investment projects. If successfully introduced, these projects were expected to bring more than RMB 110 billion development funds for state-owned enterprises in Tianjin. Northern International Trust intended to introduce 3-6 strategic investors by means of property transfer, capital increase and share expansion. The Group emphasizes strategic fit and business complementation, and has private capital with professional backgrounds in industrial investment, cross-border financial services and the Internet. After successful introduction, the shareholding ratio of state-owned capital will not be less than 34% but no more than 50%; that of private capital will be 50%-66%, with no more than 20% for each investor. After this reform, RMB 6-8 billion will be introduced.

8.2.2 Northern Trust's corporate governance problems keep cropping up

On June 26, 2017, Tianjin Discipline Inspection Commission strictly held Wang Jiandong, Northern Trust's board chairman, accountable for his omission and irresponsibility, removing him from his post of the secretary of the Party committee and board chairman and publicizing it to the whole city.

Apart from the said infrequent removal, none of the four board chairmen of Northern Trust preceding Wang Jiandong left due to good causes. According to public data, the first board chairman Liang Jiansan was said to be caught in the financial problem; the second board chairman Qi Wenfu was sentenced for 14 years because of embezzlement in 2001; the third board chairman Huo Jinyi

was subjected to double designation by the Commission for Discipline Inspection of the Central Committee of the CPC in 2005 and finally sentenced to life imprisonment because he was suspected of materially violating discipline. Liu Huiwen remained the board chairman of Northern Trust from 2005 to the first half of year 2014 till he passed away in April 2014.

As Northern Trust went through personnel turnover consecutively, its development advanced slowly compared with that of its peers. From December 2005 when separation of the Company was approved up till now, Northern Trust has had an unchanged registered capital of RMB 1 billion. In the overwhelming capital increase fever in the trust industry for recent years, Northern Trust has been relatively quiet; it was only rumored in 2015 that Northern Trust made the capital increase plan which, however, was abortive. As counterparts keep catching up with each other, the current registered capital level of RMB 1 billion of Northern Trust ranks it fourth from bottom along with Tibet Trust and Daye Trust among 68 trust companies.

The “trauma” Bohai Steel’s debt crisis caused to Northern Trust has come out. The size of trust asset of Northern Trust in 2016 retrogressed to the level in 2014, namely, RMB 264.4 billion. The indexes in the income statement declined, with operating income being RMB 1.001 billion, a decrease by 17.6% on a year-on-year basis, and net profit being RMB 405 million, a drop by 28.83% on a year-on-year basis. In the annual report for 2016, Northern Trust said, “the Company is weak in capital strength, is faced with persistently growing pressure on business transformation and development and needs to further optimize the management process.”

8.2.3 Remarkable decline in operating performance of Northern Trust

According to the annual report for 2015, Northern Trust was faced with pressure both on decline and on unhealthy rise in net profit. The data said that the net profit of Northern Trust in 2015 declined by 6% on a year-on-year basis, and that Northern Trust boasted a ROI of RMB 53.69 million in 2015, an increase by 161% on a year-on-year basis. However, a remarkable increase in the ROI was a common phenomenon in the industry in that year. In 2015, China Railway enjoyed the ROI of

RMB 140 million, an increase by 527.88% on a year-on-year basis, and Zhongrong International Trust Co., Ltd. had an increase in the ROI by 277%, CITIC Trust 762.27%, and Guoyuan Trust 118.84%.

The business transformation goal of Northern Trust is not clear. As the traditional business expansion is faced with more and more pressure, one of the reasons for decline in net profits of many trust companies is the decrease of projects or the more prudence in selection of projects. In 2015, Northern Trust had an unhealthy rise in the net profit from 0 to 14%, with the size of non-performing asset being RMB 440 million.

As more and more subjects participate in asset management business, the competition in the market is fierce and the systems, dividends and incomplete competition exclusive to trust companies will be opened, Northern Trust will be faced with more severe challenges. In 2016, Northern Trust achieved the net profit of RMB 405 million, a decline by 29% compared with the RMB 570 million in the previous year; it had the net interest income of RMB 112 million, a remarkable decline by 90.17% compared with the RMB 213 million in the previous year.

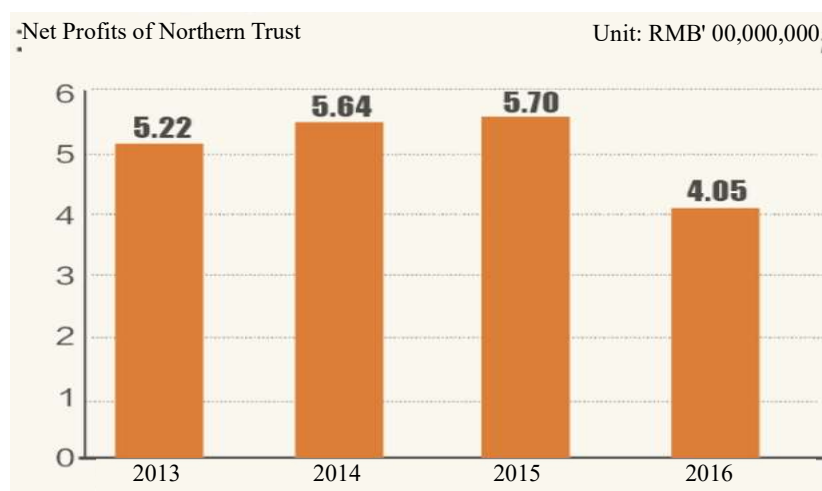


Figure 8.2 Changes of Operating Performances of Northern International Trust Co., Ltd. From 2013 to 2016

In the income structure of Northern Trust, the income from service charge and commission accounts for the largest proportion. In 2016, such income was RMB 792 million, accounting for 78.75%, a decline by 17.93% compared with the RMB 934 million in the previous year. In 2016, the net interest income of Northern Trust was RMB 112 million, a sharp drop by 90.17% compared with the RMB 213 million in the previous year. In the same year, Bohai Steel Group was beset with a huge debt crisis with the amount of RMB 192 billion, including RMB 1 billion owed to Northern Trust. Influenced by the debt crisis of Bohai Steel Group, the size of trust asset of Northern Trust in 2016 retrogressed to RMB 264.4 billion, almost the same as that in 2014. Trust companies' ranking in the net profit index for 2017 is presented in Table 8.3 below.

Table 8.2 Trust Companies' Ranking in the Net Profit Index for 2017

Trust Company	Net Profit (10,000 Y)	Ranking	Per Capita Net Profit	Ranking	Trust Company	Net Profit	Ranking	Per Capita Net Profit	Ranking
Ping An Trust	390664.36	1	455.59	19	Xiamen Trust	64918.00	35	303.35	36
Anxin Trust	366821.23	2	1427.32	2	Guotou Trust	62350.10	36	329.89	29
Chongqing Trust	335147.59	3	2295.53	1	Yingda Trust	60889.98	37	385.38	25
CITIC Trust	242512.40	4	443.76	22	Huaxin Trust	60617.12	38	319.04	32
Huarun Trust	226001.28	5	672.62	5	Hangzhou Trust	57005.00	39	295	37
Zhongrong Trust	216960.64	6	144.6	57	Guotong Trust	56669.83	40	193.08	50
Huaneng Trust	208397.33	7	620.46	8	Wanxiang Trust	55307.10	41	246.91	44
Minsheng Trust	181513.76	8	528.62	11	New Times Trust	54799.09	42	234.18	47
Jianxin Trust	164996.12	9	460.88	18	Tianjin Trust	53295.38	43	370.11	26
Zhonghang Trust	162894.77	10	624.18	7	Gansu Trust	52663.65	44	170.43	53
FOTIC	162144.01	11	510.52	14	COFCO Trust	49601.53	45	251.78	41
Jiangsu Trust	161797.29	12	1382.88	3	Lujiazui Trust	47907.06	46	162.94	54
Shanghai Trust	156046.91	13	417.8	24	Guoyuan Trust	47186.65	47	304.43	35
Industrial Trust	146968.00	14	271.16	39	Tibet Trust	46896.79	48	509.75	15
China Railway Trust	145166.90	15	657	6	Suzhou Trust	43875.90	49	355.28	28
Zhongcheng Trust	128638.75	16	428.8	23	Zijin Trust	43014.45	50	240.3	46

Bohai Trust	126370.55	17	516.85	12	Northern Trust	42427.81	51	241.75	45
Minerals Trust	116812.62	18	489.73	16	Daye Trust	40662.71	52	252.56	40
Bairui Trust	103558.93	19	515.22	13	Dongguan Trust	39474.57	53	230.85	48
Huaxin Trust	100030.41	20	548.11	10	Shaanxi International Trust	35223.65	54	70.73	62
JIC Trust	99978.82	21	249.87	42	Western Trust	34470.73	55	157.4	55
Beijing Trust	98471.77	22	321	31	Huaao Trust	30201.31	56	182	52
Bank of Communications Trust	96837.10	23	466.62	17	Jingu Trust	28105.45	57	205.15	49
Utrust	96809.67	24	800.08	4	Guolian Trust	26899.00	58	324.34	30
Chang'an Trust	94753.65	25	149.07	56	Jilin Trust	26235.85	59	125.53	58
Sichuan Trust	92066.98	26	124.92	59	Yunnan Trust	24730.06	60	103.47	61
Huabao Trust	92030.48	27	292.16	38	Zhongtai Trust	24017.19	61	123.48	60
Huarong Trust	89683.61	28	247.74	43	Changcheng Trust	17973.51	62	191.21	51
Shandong Trust	89480.50	29	449.65	20	Zhongjiang Trust	17261.93	63	65.14	63
Hunan Trust	88157.37	30	588	9	Zhejin Trust	15230.01	64	41.84	67
Ajian Trust	86,649.49	31	359.94	27	National Trust	11,270.04	65	46.67	66
Kunlun Trust	82,467.14	32	315.97	34	Xinhua Trust	10,902.70	66	62.12	64
Zhonghai Trust	78,633.18	33	444.26	21	Shanxi Trust	8,130.54	67	36.14	68
Zhongyuan Trust	76,311.59	34	318.96	33	Huachen Trust	5,101.13	68	57.97	65

8.3 Suggestions for corporate governance design of mixed-ownership reform of Northern Trust

The ultimate goal for the mixed-ownership reform of state-owned enterprises is to improve their business efficiency and the operating efficiency of stated-owned capitals, realize the preservation and appreciation of stated-owned capitals to the maximum, and more efficiently accomplish missions of various state-owned enterprises. The factor that most directly determines the realization of that goal is the improvement of the corporate governance structure.

The completion of mixed-ownership reform is reflected not only by the introduction of non-state-owned shareholders but also by the construction of an effective corporate governance structure. According to the Guidelines of the General Office of the State Council on Further Improving the Corporate Governance Structure of State-owned Enterprises, the authority-responsibility relationship of the board of shareholders, the board of directors, the management level, the board of supervisors and the Party organization must be detailed and institutionalized, and an efficient operation mechanism must be constructed to ensure the main market player status of commercial state-owned enterprises and the efficient market operation mechanism and guarantee the effective combination of strengthening the leadership under the party with improving corporate governance.

Based on the experience of the Temasek model of Singapore as well as the foregoing empirical findings, it is recommended in this study that Northern Trust should give high priority to the following aspects when improving the corporate governance in the future:

8.3.1 Shareholder governance design of Northern Trust

1. Introducing private capitals through increase in capital and share to optimize the equity structure

It is a defining trend that introducing private and foreign capitals will be viewed as an important means for the new round mixed-ownership reform which is one of the important initiatives for deepening the reform of state-owned enterprises so as to further play the role of the financial

market, revitalize the capital stock and persistently fuel the corporate development. The introduction of nonpublic capitals aims not only to introduce the capital element for enterprises and improve their financial capabilities but also to boost the optimization of the existing corporate governance structure and enhancement of the ability to make strategic decisions by bringing in external capitals with strong market mobility.

Considering the future long-term development of enterprises, the external investors brought in must meet the following three conditions. Firstly, good governance and leading management. The external investors must have strong overall strength, modern and market-based management ideas and strong sustained profitability with their main businesses maintaining a large market share; they would better be strategic investors instead of financial investors. Secondly, strategic coordination and abundant resources. The enterprises must bring in domestic first-class industrial capitals to help them expand the industrial investment field and optimize strategic layout; besides, they must introduce strategic investors with overseas financial service channels, experience and resources to help them accomplish the international development strategies. Thirdly, innovative mode and sustained development. The external investors have updated their commercial modes through “Internet+”; additionally, they have strong capital operation capabilities so that they are able to provide necessary financial support for enterprises’ development and increase the enterprises’ market share.

In November 2018, Northern Trust officially released its mixed-ownership reform scheme and had three private enterprises of Rizhao Steel Holding Group Co., Ltd., Shanghai Zhongtong Ruide Investment Group Co., Ltd. and Yike Zhengrun Investment Group Co., Ltd. as its new shareholders. By doing so, it transferred 50.07% stakes, making private capital obtain substantive controlling stake. Among them, Rizhao Steel holds 18.30% stakes, becoming the single major shareholder, Shanghai Zhongtong 17.65%, Yike Zhengrun 14.12%. Teda Investment Holdings decreased its stakes to 17.94%, falling to the second-largest shareholder.

2. Safeguarding interests of stated-owned capital contributors

There will be a major change to the shareholders of Northern Trust after the reform. At that time, the shareholding proportion of state-owned enterprises will decline to 34%, and only 6 state-owned shareholders directly under the municipality like Teda Holing stay; the rest shares will be held by private capitals, including 4 new shareholders and 7 former shareholders. Among the six state-owned shareholders directly under Tianjin municipality, Tianjin Teda Holding holds 15.25% of the shares, Tianjin Bohai Cultural Industry Investment Co., Ltd. 12.00% (subject to the reality), Tianjin Teda Water Co., Ltd. 2.04%, Tianjin Teda Electric Power Co., Ltd. 2.04%, Tianjin TEDARD Co., Ltd. 2.04%, and Tianjin TEDA Construction Group Co., Ltd. 0.63%. Northern Trust will only have 17 shareholders in total from 27 shareholders before the reform. The rest 11 shareholders, including Tianjin Pharmaceuticals Group Co., Ltd., Tianjin Tianyao Pharmaceutical Co., Ltd., Tianjin Jinneng Investment Co., Ltd., Tianjin Free Trade Zone Investment Co., Ltd., Tianjin Industrial Investment Co., Ltd., Tianjin Water Construction Co., Ltd., Tianjin Torch Technology Development Company, Tianjin Haijin Huili Industrial Co., Ltd., Tianjin Bohai Chemical Co., Ltd. Tianjin Chemical Factory, Tianjin Dagu Chemical Investment Development Co., Ltd., Tianjin Feige Group Co., Ltd., will withdraw their shares in Northern International Trust Co., Ltd. by equity transfer.

Therefore, to safeguard the state-owned capital equity of Northern Trust, the four investors brought in must make the following commitment: after becoming an ultimate investor, any of them will not constitute persons acting in concert together with other ultimate investors, not be an affiliate of other ultimate investors, and not seek actual control of Northern International Trust Co., Ltd. in any manner.

8.3.2 Design of board governance of Northern Trust

The construction of the board of directors is at the core of corporate governance of Temasek Holdings as a whole. The board of directors plays a key role in the linking the internal side and external side, top side and down side of the Temasek Holdings system. On the one hand, Temasek cuts off the government's intervention in Temasek through the board of directors, cuts off the

intervention of Temasek Holdings in its subsidiaries through the board of directors of Temasek affiliates, defines their respective management boundaries for the purpose of stable protection. On the other hand, the board of directors of Temasek Holdings, as a controlling shareholder, promotes the stable operation of its subsidiaries in the strategic direction determined by Temasek Holdings through the selection, evaluation, punishment and reward of the board of directors of Temasek affiliates and excellent directors. Temasek Holdings controls its subsidiaries under two major standards: commercial operation and value management. It does not interfere with or control the specific operations of Temasek affiliates. The day-to-day business is the responsibility of the management of each affiliate company and is regulated by the respective boards of directors.

An important task of Temasek Holdings is to build the board of directors of Temasek affiliates. The two magic weapons of construction of the board of directors are the best practice and elite governance. The so-called best practice is the best practice of corporate governance with Singapore characteristics formed by Temasek Holdings through exploration and practice based on the comparative study of corporate governance theories and cases in developed countries in Europe and the United States. The so-called elite governance means that Temasek extensively taps the director candidates worldwide who have both experience and ability and can meet the needs of the company in all aspects with the construction of the board of directors at the center, select the most suitable persons to form a competent and effective board of directors, and form a scientific director selection, evaluation, reward and punishment system and procedure in line with international standards at the same time to consolidate the position of the board of directors of Temasek affiliates as a global leader in human resources.

The corporate governance of Temasek Holdings focuses on the construction of a high-quality independent board of directors. Drawing on the experience, Northern Trust, after the mixed ownership reform, should strengthen the construction of the board of directors in the following three aspects:

Firstly, the selection of highly qualified directors. Temasek Holdings needs to ensure that the best talents join its board of directors. To this end, Temasek Holdings works closely with its subsidiaries to tap director candidates worldwide who have both experience and ability and can meet the company's needs in all aspects, select as many independent external directors as possible, and select the most suitable persons to form a competent and effective board of directors. Take Temasek Holdings itself as an example, its board of directors has a total of 9 members, of which only one member is the representative of Finance Department representing the shareholders and all the remaining members are independent directors not related to the shareholders. But each board member is an elite person in every industry or government. These highly qualified independent directors have extensive experience and can ensure the correct strategic direction of Temasek Holdings.

Secondly, organizational construction, that is, the improvement of the functions of sub-committees under the board of directors. The professional committees of the board of directors is an important carrier for the board of directors to work, which mainly undertake strategy, nomination, salary, auditing and other functions. Temasek's board of directors consists of four sub-committees: the standing committee, whose function is to consider and approve various investment decisions as authorized by the board of directors, have certain financial approval authority, and approve operational decisions on supervision and control, financing and financing proposals, change of shareholder structure, formulation of a dividend policy and other operational decisions related to Temasek Holdings investment; the audit committee, whose function is to comprehensively review the company's systems and processes to ensure that the company's business is properly managed, including internal control, financial reporting, internal and external audits, hire external legal counsel and other professional consultants as authorized, review the audited financial report and submit the same to the board of directors for consideration and approval; the capital resources committee, which is responsible for formulating various policies and guiding principles to enable the company to effectively manage various capital resource functions including asset management, liquidation

management and asset and liability management; the cadre training and compensation committee, whose main function is to develop the cadre training plan for Temasek Holdings and Temasek affiliates, succeed, appoint and change members of the board of directors, and develop the compensation review scheme for the directors and approve the performance-based compensation and reward scheme for the management.

Finally, the assessment and compensation of the board of directors and directors. Board assessment involves two major aspects: assessment of the board of directors as a whole, and performance assessment of individual directors. The assessment method includes assessment of individual directors by the chairman and self-assessment of individual directors. Northern Trust can divide the compensation structure of non-executive directors into two parts with reference to Temasek model: one is the basic annual salary, and the other is the share-based compensation. The salary is determined in three principles: firstly, appropriateness, that is, the main consideration in determining the compensation of non-executive directors is the time and effort spent by the directors and the value of their experience for the strategic development of the company, and the two shall match; secondly, the director's salary is linked to the company's profit; thirdly, market orientation, that is, the director's salary shall be in line with the market salary of similar companies.

8.3.3 Design of incentive mechanism of Northern Trust

The reform of the Northern Trust's mixed ownership system shall not only ensure the "bottom line" of the preservation and retention of state-owned assets, but also establish an effective incentive mechanism to pursue the maximum appreciation of state-owned assets. For one thing, the mixed ownership reform program shall be conducive to mobilizing all stakeholders to participate in and promote mixed reform, to ensure that all parties have a fair distribution of interests and equal say; for another, it is required to improve corporate governance mechanism, be able to mobilize managers and core employees, select, assess and motivate managers following the principle of classification and stratification.

On May 2, 2017, State-owned Assets Supervision and Administration Commission of Tianjin Municipal People's Government, Tianjin Finance Bureau and Tianjin Securities Regulatory Bureau jointly issued a document to stipulate the pilot work of employee ownership of state-owned mixed-ownership enterprises. According to the "Implementation Opinions on the Pilot Project of Employee Ownership in State-owned Mixed-ownership Enterprises in Tianjin", State-owned Assets Supervision and Administration Commission of Tianjin Municipal People's Government was to determine 5~10 pilot enterprises through comparison and selection, and select the existing state-owned mixed-ownership enterprises to introduce employee ownership.

According to the "Implementation Opinions", the existing state-owned mixed-ownership enterprises selected to carry out the pilot project of employee ownership shall meet four requirements: First, a competitive enterprise with the primary business in full competition in the industry and the field; second, the ownership structure is reasonable, nonpublic ownership percentage shall be no less than 10%, the company's board of directors has directors recommended by nonpublic capital shareholders; third, the company has a sound corporate governance structure, has a market-oriented labor and personnel distribution system and performance evaluation system in place, forms the market-oriented mechanism which allows for the promotion and demotion of the management staff, departure and recruitment of employees, increase and decrease of income; fourth, more than 90% of the operating income and profit of the previous year are from the external market of the group to which it is affiliated. Moreover, the total ownership percentage of employees shall be no more than 30% of the company's total share capital in principle, and the ownership percentage of a single employee shall be no more than 1% of the company's total share capital in principle. It shall be guaranteed that the state-owned shareholder is the largest shareholder, and its ownership percentage shall be no less than 34% of the company's total share capital after the implementation of employee ownership.

Currently, the preliminary plan for the proposed mixed ownership reform of Northern Trust meets the conditions and requirements for employee ownership. Therefore, Northern Trust can further explore the design of the employee ownership incentive mechanism.

8.4 Suggestions on corporate governance design for mixed ownership reform of state-owned enterprises in Tianjin

This section conducts a case study on the mixed reform practice of Tianjin North International Trust Co., Ltd., and presents suggestions on the relationship between Tianjin Municipal Government and the state-owned capital investment platform after the mixed ownership reform, and the design of the corporate governance mechanism of the state-owned capital investment platform, the corporate governance design of participating and holding enterprises of state-owned capital investment platform based on the experience and theoretical research results of the Singapore Temasek model.

8.4.1 Design of governance of Tianjin Municipal Government and state-owned capital platform

The mission of Tianjin's state-owned capital platform is to serve the national strategic goals and optimize the structure of state-owned capital, and promote the concentration of state-owned capital in important industries, key industries and key infrastructures that are related to national security, national economic lifeline and national economy and people's livelihood, in visionary and strategic industries, in advantageous enterprises with core competitiveness.

The State-owned Assets Supervision and Administration Commission of Tianjin Municipal Government and other state-owned assets regulatory bodies authorized by the government shall accurately grasp the position of performing the duties of the investors in accordance with the law, scientifically define the boundary of the supervision of state-owned asset investors, and exercise powers and perform duties in strict accordance with the authorities and procedures stipulated by the company law, the state-owned assets law of enterprises, the temporary regulations on the supervision

and administration of state-owned assets of enterprises and other laws and regulations, establish the list of regulatory powers and the list of responsibilities and realize the shift to the capital-based management. State-owned assets supervision shall focus on managing the layout of state-owned capital, standardizing capital operations, improving capital returns, and maintaining capital security with improving the efficiency of state-owned capital and strengthening the vitality of state-owned enterprises at the center, with capital as the link and property rights as the basis. State-owned assets supervision shall comply with the requirements of separation of government and enterprises, separation of government and capital, separation of ownership and management right, follow the law of market economy and the law of enterprise development, highlight the consistency of powers and responsibilities, and stimulate enterprises' vitality, innovation and endogenous motivation. The matters which are supposed to be determined by the enterprises at their discretion according to law shall be assigned to the enterprises, and the management matters that extend to the sub-enterprises shall be assigned to the first-class enterprises, and the public management functions that the enterprises undertake as coordinator shall be placed in the charge of relevant government departments and units.

8.4.2 Design of corporate governance mechanism of state-owned capital investment platform

According to the Temasek model, the board of directors of Tianjin state-owned capital investment platform company consists mainly of independent directors. A few directors and supervisors are appointed by the government, such as the chairman and general manager, who can be directly appointed by the Tianjin Municipal Government. Most members of the board of directors and the board of supervisors shall be selected through the open recruitment at home and abroad, and the government can organize relevant departments to participate, e.g. SASAC, Organization Department, and Finance Bureau form a committee for nomination and selection. After the establishment of these platform companies, the company's board of directors shall sign authorization contracts with governments at all levels as the basis for the company's independent operation.

It is necessary to give play to the decision-making advising and auxiliary functions of special committees, strengthen the organization and function construction of special committees, attach importance to the effective operation of the committees, give full play to the expertise of each director, decompose the tasks of the board of directors, and provide more support for the board of directors in decision-making, grant the committees the decision-making power, the power of recruiting employees, the power of determining the compensation, and the right of assessment and supervision.

8.4.3 Design of corporate governance mechanism of participating and holding enterprises of state-owned capital investment platform

1. Exercise equity power in accordance with the principle of market-orientation based on ownership percentage

Tianjin state-owned capital platform company shall perform its duties based on the ownership percentage by participating in the shareholders' meeting, reviewing matters that are required to be decided by the shareholders, and making decisions through consultation with other shareholders, and shall not interfere with the independent business activities of the enterprises. Tianjin state-owned capital platform company shall improve the enterprise system with the company's articles of association at the core, give full play to the basic role of the company's articles of association in corporate governance, and strictly regulate the powers and responsibilities of the institutions, shareholders' meetings, board of directors, board of supervisors, management body that perform the duties of investors in accordance with laws, regulations and the company's articles of association, strengthen the correspondence of powers and responsibilities, ensure effective performance of duties, improve the corporate governance structure in line with the law of the market economy, and improve operational efficiency.

2. Exercising shareholder's rights by influencing the strategic direction of the subsidiaries, but not specifically intervening in their daily business operations

Temasek adopts the management method of “active shareholders”, does not specifically intervene in the daily operations of its subsidiaries, but starts with the formation of the board of directors and establishment of the sound operation mechanism of the board of directors, and exercises shareholder's rights by influencing the strategic direction of the subordinate companies.

As far as Tianjin is concerned, Tianjin state-owned assets platform company should strictly supervise its subsidiaries in accordance with market rules and not participate in the investment, commercial and operational decisions of the invested companies. Decisions are made by their respective management teams and are supervised by their respective boards of directors. Tianjin state-owned assets platform should delegate the respective board of directors and professional teams of the subordinate enterprise groups to be responsible for their own investment policy and basically do not intervene in it.

CHAPTER 9 DISCUSSION OF MAIN FINDINGS

Based on the above empirical research and case study, this paper proposes that the following points must be considered in the design of corporate governance model of China's state-owned enterprises undergoing mixed ownership reform:

I. Basic principles for design of corporate governance of state-owned enterprises undergoing mixed ownership reform

Based on the above empirical analysis results and the practical experience of Temasek, this study believes that Chinese state-owned enterprises must adhere to the following basic principles when carrying out mixed ownership reform:

Firstly, equity must be relatively concentrated. In the ownership structure of the enterprises undergoing mixed ownership reform, the equity must be relatively concentrated in several major shareholders. The company's major decisions or proposals cannot be adopted unless being agreed upon by the several major shareholders, thus forming the check and balance between the company's major shareholders.

Secondly, compensation of the management should reflect positive incentives. In terms of incentive mechanism, it is necessary to rationally design the compensation and assessment system for the executives of state-owned enterprise undergoing mixed ownership reform. The professional managers selected in a market-oriented manner are subject to market-oriented compensation distribution mechanism. It is advisable to take the market-oriented salary incentive mechanism, e.g. virtual stocks and options, to solve the problem of "lazy politics" brought by the executives of state-owned enterprises.

Thirdly, recruiting world-class directors. As one of the core contents of corporate governance design after the mixed ownership reform of state-owned enterprises, recruiting directors with first-class competence worldwide is the key to improving the governance and ability of the board of

directors. In particular, as more and more state-owned enterprises go global, it is particularly important to recruit directors with experience in participating in international market.

Fourthly, government equity representatives do not necessarily account for a large proportion of the board of directors. Temasek's corporate governance practice shows that the board member arrangement of state-owned enterprises after the mixed ownership reform should be based on the long-term development needs of state-owned enterprises, and professional directors should be chosen instead of the directors with administrative status. In order to effectively attract private capital and strengthen involvement of private capital in board governance, the proportion of directors appointed by state-owned capital can be reduced as appropriate after the mixed ownership reform of state-owned enterprises, to enhance the vitality of the board of directors.

II. The particularity of corporate governance design of China's state-owned enterprises after mixed ownership reform

The existing literature has drawn many constructive conclusions for corporate governance design of state-owned enterprises after mixed ownership reform, and proposed important corporate governance design principles. However, based on the empirical research results of this study, the corporate governance design of China's state-owned enterprises after mixed ownership reform has its own particularities, which are manifested in the following two aspects:

Firstly, in the corporate governance design of China's state-owned enterprise, the positions of chairman and general manager are separated. The separation of the chairman and the general manager does not guarantee that the general manager is responsible for the board of directors headed by the chairman. The reason is that under the traditional general manager appointment and removal mechanism of the state-owned enterprises, the board of directors has no de facto power to appoint or remove the general manager, and the board of directors is only "rubber stamp". Consequently, it leads to the dilemma that the function of supervision cannot be materialized despite the separation of the two positions. Therefore, under the background that the chairman and general manager of state-owned

enterprises in China are appointed and removed by the Party and government organs, duality of chairman and general manager in the corporate governance design of state-owned enterprises may be more conducive to the improvement of corporate governance.

Secondly, the number and proportion of independent directors. Although Temasek's corporate governance practice shows that the introduction of external independent directors and the increase of the proportion of independent directors can help improve the governance of the board of directors, the empirical results of this study indicate that the design of the independent director system in China is largely based on the compliance with the mandatory requirements of the company law and other laws and regulations, and its form overshadows its substance. Therefore, independent directors in China are also known as "Vase Directors "and their role in improving the governance capacity of the board is limited.

III. Proceeding with the design of corporate governance based on China's realities

On the one hand, in the corporate governance of China's state-owned enterprises after mixed ownership reform, we cannot simply copy the governance model of Singapore-based Temasek, and use the practical experience of foreign corporate governance to guide the reform of Chinese state-owned enterprises, must create and implement a "corporate governance model" for state-owned enterprises undergoing mixed ownership reform with Chinese characteristics by taking into account China's political, economic and social institutional environment; on the other hand, we cannot simply promote and replicate the practice of corporate governance in a certain province or city in China, because the local governments in China are sharply different in terms of macroscopic management ability, degree of marketization, financial development level, professional manager market, legalization degree, etc. Therefore, in carrying out the mixed ownership reform of state-owned enterprises in China, the local government must consider the actual situation of the external governance environment in the local area, gradually explore a corporate governance model that is in line with the actual situation of the local area under the premise of following the basic direction and

requirements of mixed ownership reform of national state-owned enterprises. In view of the practical experience of Temasek's corporate governance and the actual situation in China, the following supporting reforms must be carried out in corporate governance design of China's state-owned enterprises undergoing mixed ownership reform:

Firstly, the government, as a shareholder, does not interfere with the day-to-day business of the company. The government shall not interfere with the independent operation of the enterprise, and shareholders shall not interfere with the daily operations of the enterprise, to ensure that the corporate governance is standardized and incentives and constraints are put in place. It is necessary to improve the corporate governance structure and management method of mixed ownership enterprises with capital as the link. State-owned capital investors and various non-state-owned capital investors should fulfill their rights and responsibilities as shareholders, so that mixed ownership enterprises become the real market players.

Secondly, the compensation of the management is market-oriented. The premise of market-oriented compensation is market-oriented talent selection, the breakthrough of which is market-oriented selection of professional managers. Therefore, after the mixed ownership reform of state-owned enterprises, market-oriented talent selection should first be realized. On this basis, market-based compensation benchmarking should be conducted to determine the compensation reasonably in accordance with the same industry, the same scale, the same position, the same performance and other principles. At the same time, the salary distribution is linked to the work performance, with fixed salary for the one and same position, different salaries for different positions, and the salary can be increased or decreased according to the performance, with a view to fully motivate executives.

Thirdly, strengthening the legal system construction of state-owned enterprises to prevent corruption of executives. For the areas and positions where power is concentrated, it is necessary to implement separate functions, separate posts, and hierarchical authorization to prevent abuse of power. State-owned enterprises should be market-oriented, establish a standardized and modern enterprise

system, and implement the corporate governance structure, so that the shareholders' meeting, the board of directors, the managerial level, the board of supervisors, the employee representative assembly, the Party organization and other institutions perform their respective duties, and realize internal and external supervision and coordination.

CHAPTER 10 EXPECTED CONTRIBUTION OF THE RESEARCH

10.1 Theoretical significance

Firstly, this study conducts an in-depth analysis of the corporate governance design practice of mixed ownership reform under Singapore-based Temasek model, explores its reference value and significance for the mixed ownership reform of China's state-owned enterprises, and identifies its guiding significance for the theoretical framework designed in this study through a case study of Singapore-based Temasek, which will further enrich and improve existing related research.

Secondly, based on China's institutional scenario, this study initially designed and tested the corporate governance arrangement of state-owned enterprises after mixed ownership reform and its effectiveness. Based on the corporate governance theory, mixed ownership theory and other related theories, this paper builds a "Corporate Governance Matching Framework Based on the Mixed Ownership Reform of State-owned Enterprises" with respect to the endogenous demand on corporate governance caused by the mixed ownership reform of state-owned enterprises in China and proposes relevant research hypotheses. Furthermore, this study utilized the relevant empirical data of Shanghai and Shenzhen stock markets in China to empirically test the relevant research hypotheses, and corrected and improved the conceptual model and theoretical framework created.

10.2 Practical significance

At present, most state-owned enterprises have established the corporate governance structure of the "new three organizations", but the original "old three organizations" has not completely disappeared. State-owned capital still holds an absolute controlling position, and corporate governance issues such as vacancy of owners, insider control remain unresolved due to administrative relations, which are still the main factors constraining the development of state-owned enterprises. The mixed ownership reform introduces capital of different natures, realizes the crossover and integration of multiple economies, enhances the vitality of enterprises, thus facilitating the

optimization of the governance of state-owned enterprises, balance of the interests between different types of subjects, and establishment of an effective restraint and incentive mechanism.

The study in this paper takes mixed ownership reform as the entry point, optimization of corporate governance as the goal, offer solutions to corporate governance of state-owned enterprises, promotion of the preservation and appreciation of state-owned capital, and improvement of the operational efficiency of state-owned enterprises, and proposes new approaches for the reform practice of state-owned enterprises. Since mixed ownership has obvious corporate governance effects, it cannot only restrict infringement of the shareholders' interests by the management, infringement of the minority shareholders' interests by major shareholders, but also ensure the interests of employees. Therefore, in the process of mixed ownership reform, state-owned enterprises should attach importance to its actual effects, introduce investment subjects of different shareholding natures, avoid shareholders with excessive equity concentration, and enhance corporate governance effects. Specifically, the practical significance of this study is as follows:

Firstly, the corporate governance design of state-owned enterprises after the mixed ownership reform is a systematic project involving the arrangement of ownership structure, the structure of the board of directors, and design of the incentive mechanism of the board of directors and the management. To ensure the success of the reform of the state-owned enterprises, it is necessary to attach importance to the design of ownership structure, ensure a certain degree of equity concentration while introducing private capital to reduce the shareholding ratio of state-owned shareholders; otherwise, it is still difficult to fundamentally solve the problems of state-owned enterprises before the mixed ownership reform given the dominance of state-owned shareholders. In addition, the structure of the board of directors represented by the role setting of the chairman and the general manager and the proportion of independent directors must be arranged by focusing on the connotation of governance of the board rather than being oriented at "compliance". The separation of the roles of chairman and general manager and the addition of external independent directors can only formally

meet the independence requirements of the board of directors relative to the management. In fact, if the operational mechanism and institutional guarantees for the board of directors to supervise the management cannot be fundamentally improved, it will be difficult to ensure that the board functions smoothly. Moreover, the short-term incentive and long-term incentive mechanism for the board of directors and the management are designed to link them closely to the interests of the company and motivate them to focus on the balance of long-term and short-term development of the enterprise, thus enhancing the sustainable development capability of the enterprise.

Secondly, this study concludes that we cannot simply imitate Singapore-based Temasek model, and must critically draw on the model based on China's institutional environment. Moreover, many practices of Temasek conflict with the general direction of the reform of China's state-owned enterprises, e.g. the non-separation of government and enterprise under the Temasek model is inconsistent with the guideline of separation of government and enterprise in the reform of China's state-owned enterprises. What is more important is that Singapore is a state of private ownership, public ownership is subordinate. In China, the fundamental economic system is the public ownership complemented with different types of ownership. The two countries are fundamentally different in the positioning of state-owned economies. Therefore, in the corporate governance design of China's state-owned enterprises undergoing mixed ownership reform, we should follow the scientific and objective laws of economic and management science, and draw on the practical experience of Singapore and other developed countries on the one hand; we must fully respect China's realities and reflect The characteristics of mixed ownership reform of China's state-owned enterprises on the other hand, so as to effectively meet the needs of the reform and development of Chinese state-owned enterprises.

REFERENCES

- [1]. Weihua Zhu. Corporate governance and insider trading regulation efficiency[J].Frontiers of Business Research in China, 2010, 4 (2) : 306-324.
- [2]. Valentin Zelenyuk, Vitaliy Zheka. Corporate Governance and Firm's Efficiency: The Case of a Transitional Country, Ukraine [J].Journal of Productivity Analysis, 2006,25 (1) :143-157.
- [3]. Tran Thi Hong Lien. Corporate Governance Quality: Vietnam Needs to Implement Economics, Business and Geopolitics University Courses [J]. Journal of Global Policy and Governance, 2012,1 (1) :95-107.
- [4]. Z. Jun Lin, Ming Liu. The impact of corporate governance on auditor choice: Evidence from China [J]. Journal of International Accounting, Auditing and Taxation, 2009, 18 (1) :44-59.
- [5]. Sanjai Bhagat, Brian Bolton. Corporate governance and firm performance [J].Journal of Corporate Finance, 2008, 14 (3) :257-273.
- [6]. Irene M. Gordon, Karel Hrazdil, Daniel Shapiro. Corporate governance in publicly traded small firms: A study of Canadian venture exchange companies [J].Business Horizons, 2012, 55 (6) :583-591.
- [7]. Abdullah Al Mamun, Qaiser Rafique Yasser, Md. Ashikur Rahman. A Discussion of the Suitability of Only One vs More than One Theory for Depicting Corporate Governance [J]. Modern Economy, 2013,4 (1) : 37-48.
- [8]. Luan Zhu, Zhonggui Zhu. Analysis of state-owned shares in mixed ownership economy[J]. Modern Economy Research, 2015(4): 25-28.
- [9]. Bei Gao, Han Gao. The proportion of state-owned shares and management authorization-research based on the mixed oligopoly model[J].World Economic Papers,2013(6):14-27.
- [10]. Ruiqiu Ou, Jieyu Li, Zhong Guang et al. Partial privatization and positioning of state-owned enterprises[J].World Economy, 2014(5):112-134.
- [11]. Junlong Chen, Jijun Tang. Classified mixed ownership reform of state-owned enterprises and optimal ratio of state-owned shares-based on duopoly competition model[J].Journal of Guangdong University of Finance and Economics, 2016(1):36-44.
- [12]. Jun Yin, Jiancai Pi, Decai Yang. A study on the internal mechanism and optimal proportion of mixed ownership in state-owned enterprises[J]. Nankai Economic Studies, 2016(1):18-32
- [13]. Yunhong Hao, Qian Wang. A study on the check and balance mechanism of equity in mixed ownership enterprises—based on the case analysis of "The Argument of Control Rights of Ewu Merchants"[J]. China Industrial Economic, 2015(3):148-160.
- [14]. Ping Wang, Ying Zou, Jing Lan. Research on the difference of capital cost of heterogeneous shareholders[J].China Industrial Economics, 2015(9):130-144.

- [15]. Yifan Hu, Min Song, Junxi Zhang. The relative importance and interaction of the three theories of competition, property rights and corporate governance[J]. Economic Research Journal, 2005(9):44-57
- [16]. Xihua Wei, Qiancheng Zhang. Optimal equity structure and corporate value- theoretical model and empirical evidence from China[J]. Modern Economic Science, 2014(3):92-103.
- [17]. Lin Chen, Yangliu Tang. The mixed ownership reform and the policy burden of state-owned enterprises- an empirical study based on big data of early state-owned enterprise property rights reform[J]. Economist, 2014(11):13-23.
- [18]. Shuchen Hao, Hu Tao, Jinfang Tian. A comparative study on the governance efficiency of state-owned enterprises with different equity structures-taking Shandong province as an example[J]. China Industries Economics, 2011 (9) :130-139
- [19]. Xiongjun Liang, Wenhua Luo. An empirical analysis of the influence mechanism of ownership structure on corporate governance efficiency[J]. Journal of Tianjin University, 2006 (6): 405-411
- [20]. Shengjuan Yao, Jian Ma. Research on the ownership structure and corporate governance of mixed ownership enterprises[J]. East China Economic Management, 2008 (4):52-57
- [21]. Jiagui Chen, Qunhui Huang. Comparison and improvement of the governance structure of different ownership enterprises in China[J]. China Industrial Economics, 2001(7):23-30