ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

Research on the Financial Performance of Longking's Reverse Mixed-Ownership Reform

Qiuyu Wu[1,*], Yijun Chen[2], Zhixia Wu[3]

[1] School of Management, Sichuan University of Science and Engineering, Yibin, 644000, China

[2] School of Management, Leshan Normal University, Leshan, 614000, China

[3] School of Management, Sichuan University of Science and Engineering, Yibin, 644000, China

[*]Corresponding Author

Abstract

Against the backdrop of ongoing deepening mixed-ownership reform and widespread financing constraints and transformation pressures faced by private environmental enterprises. Reverse mixed-ownership reform, whereby state-owned capital invests in private enterprises, has become an important path for private firms to resolve operational difficulties and realize industrial upgrading. This paper takes Zijin Mining's strategic takeover of Longking in 2022 as the research object, selects financial data from 2019 to 2025, and adopts literature research, case study and financial index analysis to explore the impacts of reverse mixed-ownership reform from four dimensions: profitability, operational capacity, solvency and growth capacity. The study finds that substantive reverse mixed-ownership reform featuring in-depth participation of state-owned capital as well as integrated governance and business operations can significantly improve the comprehensive financial status of private enterprises. This paper enriches case studies concerning reverse mixed-ownership reform in the environmental protection industry and offers practical references for similar private enterprises to introduce state-owned capital.

Keywords

Reverse Mixed-ownership Reform; Financial Performance; Environmental Protection Enterprises.

1. Introduction

1.1. Research Background

In the context of the deepening of national mixed-ownership reform, in addition to the traditional mixed-ownership reform model where state-owned enterprises introduce private capital, the reverse mixed-ownership reform model where state-owned capital takes stakes in high-quality private enterprises has gradually become an important path to revitalize private listed companies and resolve the development predicament of private enterprises. The environmental protection industry is characterized by both policy-dependent and capital-intensive features, with long project payback periods and high financing costs for enterprises. Private environmental protection enterprises generally face problems such as shortage of funds and weak risk resistance capacity. In recent years, with the macroeconomic downturn and intensified competition for environmental protection projects, a large number of private environmental protection enterprises have faced problems such as declining profits and increased debt pressure. Introducing state-owned capital has become an important choice for private environmental protection enterprises to break through development bottlenecks.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

Longking, a leading private enterprise in China's air pollution control industry, received a strategic investment from Zijin Mining in 2022. This typical case of reverse mixed-ownership reform has drawn widespread attention from the capital market. Has the entry of state-owned capital really improved the financial situation of the enterprise? This paper analyzes the financial data of the three years before and after the reverse mixed-ownership reform of Longking, systematically assesses the actual impact of the reverse mixed-ownership reform on the profitability, operational capacity, debt-paying capacity and development capacity of the enterprise, and expects to provide experience for the reverse mixed-ownership reform of private enterprises in the environmental protection industry and other industries.

1.2. Research Significance

At present, most domestic research on mixed-ownership reform focuses on the introduction of private capital by state-owned enterprises. There are relatively few cases of reverse mixed-ownership reform where private enterprises accept state-owned capital investment. The financial performance analysis of individual cases in the environmental protection industry still needs to be enriched. Based on principal-agent theory and resource dependence theory, this paper analyzes the impact of reverse mixed-ownership reform on the financial level of private enterprises, which can broaden the sample of case studies on reverse mixed-ownership reform, enrich the relevant research results in the field of mixed-ownership reform in the environmental protection industry, and provide case references for subsequent academic research.

At the same time, for Longking, an objective evaluation of the implementation effect of this reverse mixed-ownership reform is conducive to helping the enterprise recognize the existing problems after the mixed-ownership reform and put forward reasonable suggestions for subsequent in-depth cooperation with state-owned shareholders and optimization of operation and management. For the industry, it can provide experience for other private environmental protection enterprises to rationally select strategic investors and carry out reverse mixed-ownership reform.

1.3. Research Methods

Case study method. This paper selects Longking as the subject of the case study, sorts out the entire process of Zijin Mining's investment in Longking, collates the financial statement data of the enterprise for many years before and after reverse mixed-ownership reform, conducts performance analysis around four financial dimensions, and draws research conclusions to make the research conclusions of the entire paper more in line with the actual situation of the enterprise.

Financial indicator analysis method. Select core financial indicators corresponding to profitability, operational capacity, debt-paying capacity and development capacity, and compare the changes in the values of these indicators before and after the mixed-ownership reform to determine the impact of reverse mixed-ownership reform on the financial situation of enterprises. The indicators are intuitive and clear, and the research conclusions are objective and reliable.

Literature review method. By reviewing literature on reverse mixed-ownership reform and financial performance at home and abroad, sorting out the research viewpoints of existing scholars, summarizing the core contents of resource dependence theory and principal-agent theory, providing theoretical support for the case analysis in the following text.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

2. Theoretical Basis and Literature Review

2.1. Concept Definition

2.1.1. Reverse Mixed-Ownership Reform

Reverse mixed-ownership reform, also known as reverse mixed-ownership reform, is a special form of China's mixed-ownership reform in the new stage of development. In 2015, The State Council's "Opinions on the Development of Mixed-Ownership Economy in State-owned Enterprises" explicitly encouraged state-owned capital to take stakes in non-state-owned enterprises in multiple ways, providing a clear policy basis for its promotion. Unlike traditional forward mixed-ownership reform, the core of reverse mixed-ownership reform is to break the dominant restrictions of single-ownership capital and achieve cross-shareholding and integration of state-owned and non-state-owned capital. Forward mixed-ownership reform follows the conventional path of state-owned enterprises introducing non-state-owned capital, while reverse mixed-ownership reform takes the opposite direction of capital flow, with non-state-owned enterprises such as private enterprises as the main body, optimizing the equity structure by absorbing state-owned capital for relief or introducing state-owned capital as strategic investors, integrating core elements such as capital, management, and technology, To get out of the development predicament and enhance the core competitiveness of enterprises.

Compared with forward mixed-ownership reform, reverse mixed-ownership reform places more emphasis on the autonomy and choice rights of private enterprises. While retaining their advantages such as flexible mechanisms and strong innovation capabilities, it takes advantage of the resource advantages of state-owned capital to solve prominent problems such as financing difficulties, insufficient policy adaptation, and imperfect governance systems of private enterprises. In terms of implementation paths, reverse mixed-ownership reform mainly promotes reform through equity transfer, capital increase and share expansion, issuance of preferred stocks, etc., and achieves deep governance optimization and two-way empowerment of enterprises through complementary capital of different ownership.

2.1.2. Financial Performance

Financial performance can objectively reflect the operating results of an enterprise during a certain accounting period, comprehensively reflect the enterprise's return on investment, use of funds, debt control and future growth potential, and is also the most intuitive evaluation indicator for measuring the implementation effect of reverse mixed-ownership reform. There are many ways to evaluate the financial performance of listed companies, including EVA evaluation method, factor analysis method, financial indicator analysis method, etc.

2.2. Theoretical Basis

2.2.1. Resource-Dependent Theory

Resource dependence theory is a very important theory in organizational theory and strategic management, and its core ideas were first systematically expounded by Pfeffer and Salancik in 1978. The core idea is that no organization can exist independently of the external environment, and it is even more difficult to achieve self-sufficiency. Its survival and development must rely on obtaining resources from the external environment to make up for the limitations of its own resources and reduce the impact of environmental changes. The resource dependence theory holds that the degree of dependence among organizations mainly depends on three core factors - the importance of resources to the organization, the scarcity of resources, and the possibility of resource substitution. But this reliance on external resources weakens the autonomy of organizational decision-making, thereby increasing the risk of uncertainty in its development process. Therefore, organizations should proactively adopt multiple strategies to manage this dependency, such as coordinating relationships with other organizations through less

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

constrained means like long-term cooperation and multi-channel resource supply, in order to maximize decision-making autonomy and minimize development uncertainty risks.

2.2.2. Principal-Agent Theory

Principal-agent theory focuses on contractual principal-agent relationships, with the core being how to motivate agents at the lowest principal-agent cost, align their actions with the interests of the principal, and maximize the value output of the principal-agent relationship. With the continuous improvement of the modern enterprise system, the separation of ownership and management has gradually become the mainstream model of corporate governance. Although this institutional arrangement has given rise to the widespread establishment of the principal-agent relationship, it has also given rise to two types of core principal-agent problems due to the existence of information asymmetry and the limited rationality characteristics of the agents themselves. Among them, the first type of principal-agent problem stems from the separation of ownership and management rights, while the second type of principal-agent problem is triggered by the concentration of equity of major shareholders, specifically manifested as the encroachment of property rights interests of minority shareholders by major shareholders. In China's listed private enterprises, the second type of principal-agent risk is particularly prominent. Private major shareholders interfere in corporate governance decisions based on their own interests, which in turn leads to the impairment of corporate operational efficiency. Essentially, how to build an effective restraint and incentive mechanism to ensure that the agent's behavior aligns with the interests of the principal is the focus of the principal-agent theory.

2.3. Literature Review

At the level of corporate performance, the impact of state-owned capital participation on private enterprises is complex. On the one hand, state-owned shareholders' participation in private enterprises can reduce agency costs and operational risks for enterprises, improve the quality of accounting information disclosure, lower the probability[1] of auditors issuing non-standard audit opinions, and reduce risks[2] at the financial information level; On the other hand, it provides financing facilitation for private enterprises through political connections, expands the scale of debt financing, and reduces financing costs and default risks[3,4]. At the same time, it can increase the cash holdings [5]of enterprises, alleviate underinvestment, improve investment efficiency, enhance the financial behavior of private enterprises, and improve their profit quality and financial performance. In addition, the participation of state-owned capital can enhance the strategic aggressiveness of private enterprises, increase the value of enterprises without increasing the probability of violations, and contribute to the high-quality development [6]of private enterprises.

While most studies suggest that the participation of state-owned capital can enhance the performance of private enterprises, some scholars have pointed out its potential negative effects. State-owned capital investment may reduce the quality of corporate accounting information and increase the risk[7] of regulatory inquiries; At the same time, enterprises may bear policy burdens as a result, offset some of the financing gains, push up operating costs and affect overall economic benefits[8]. In addition, the involvement of state-owned capital may also trigger cost-plus effects, such as increasing the burden[9] of employee and management expenses, thereby reducing operational efficiency. Therefore, when private enterprises introduce state-owned capital, they need to carefully weigh the pros and cons and rationally design the equity structure in order to achieve sustained and stable development.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

3. Overview of Reverse Mixed-Ownership Reform Cases

3.1. Overview of Longking Company

Fujian Longking Co., Ltd. is a leading enterprise in China 's environmental protection industry. The company originated from Longyan Radio Plant, which was established in 1971. After more than half a century of development, it was successfully listed on the Shanghai Stock Exchange in December 2000, becoming the first listed company in China' s atmospheric environmental protection industry and in Longyan City. In May 2022, after the strategic takeover by Zijin Mining, the company established a dual-wheel drive development strategy of environmental protection and new energy, gradually promoting the transformation of the enterprise from traditional environmental protection manufacturing to green energy technology comprehensive service provider.

Longking is headquartered in Longyan City, Fujian Province. It focuses on comprehensive businesses such as environmental pollution control, high-end equipment manufacturing, environmental protection engineering construction, and new energy fields. It possesses multiple high-level R&D platforms including a national-level technology center, engineering center, academician workstation, and postdoctoral workstation. It has gathered over 2,000 professionals from various fields. With world-class experimental research and engineering experimental conditions, it has been recognized by the Ministry of Industry and Information Technology as a "dust removal equipment" manufacturing single-champion demonstration enterprise and has now developed into one of the world's largest atmospheric environmental protection equipment manufacturing enterprises, with business covering many countries and regions around the world. Relying on the full industrial chain layout, the company has formed a business model that combines environmental protection and new energy technology research and development, high-end equipment and product manufacturing, EPC engineering construction and services, and environmental protection and new energy power station operation, covering multiple fields such as air pollution control, new energy industry, and comprehensive environmental governance. Committed to providing customers with all-round, integrated green and low-carbon solutions to facilitate the comprehensive green transformation of economic and social development.

3.2. Reverse the Implementation Process of Mixed-Ownership Reform

The reverse mixed-ownership reform of Longking was completed in May 2022. This reform not only stems from the financial pressure of the original controlling shareholder and the practical need for corporate governance optimization, but also aligns with the strategic layout requirements of Zijin Mining in areas such as environmental governance and ecological restoration. The two sides formed a strategic complementarity based on their respective strengths, which not only effectively mitigated corporate governance risks but also promoted Longking's transformation from a traditional environmental enterprise to a dual-wheel drive of environmental + new energy. The specific implementation process is as follows.

On May 9, 2022, ST Longking and Zijin Mining simultaneously issued announcements officially disclosing that the company's original controlling shareholder, Longking Industrial Investment Group Co., LTD., and its associated parties, Xizang Sunshine Hongrui Industry and Trade Co., Ltd. and Xizang Sunshine Ruize Industrial Co., LTD., signed a "Control Transfer Agreement" with Zijin Mining Group Co., LTD. According to the agreement, the transaction is divided into two major parts: First, equity agreement transfer, Zijin Mining acquires 160,586,200 shares of ST Longking held by the original controlling shareholder and its associated parties at a price of 10.80 yuan per share, representing 15.02% of the company's total share capital, with a total transaction value of approximately 1.734 billion yuan; The original shareholders agreed to unconditionally and irrevocably entrust all voting rights of the remaining 10.02% of the

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

company's total share capital they held to Zijin Mining for exercise. After that, Zijin Mining controlled a total of 25.04% of the voting rights of ST Longking, quickly transferring control with a relatively low shareholding ratio and becoming the shareholder with the largest voting rights. At the same time, it was clearly stipulated in the agreement that part of the proceeds from the equity transfer would be used exclusively to return the company's funds illegally occupied by the original controlling shareholder.

Table 1. The situation of each shareholder before the transaction

Subject	Number of shares held (shares)	Shareholding ratio	The number of shares corresponding to the voting rights held (shares)	Voting rights ratio
Zijin Mining	0	0%	0	0%
Longking Industrial And its concert parties	267,704,992	25.04%	267,704,992	25.04%
Among them: Longking Industrial	193,375,544	18.09%	193,375,544	18.09%
Sunshine Hongrui	44,310,030	4.14%	44,310,030	4.14%
Sun Ruize	30,019,418	2.81%	30,019,418	2.81%

Table 2. The situation of each shareholder after the transaction

Subject	Number of shares held (shares)	Shareholding ratio	The number of shares corresponding to the voting rights held (shares)	Voting rights ratio
Zijin Mining	160,586,231	15.02%	267,704,992	25.04%
Longking Industrial And its concert parties	107,118,761	10.02%	0	0%
Among them: Longking Industrial	84,310,926	7.89%	0	0%
Sunshine Hongrui	22,807,835	2.13%	0	0%
Sun Ruize	0	0%	0	0%

After the completion of this share transfer, the controlling shareholder of the company changed from Longking Industrial to Zijin Mining, and the actual controller changed from Wu Jie to Minxi Xinghang State-owned Assets Investment and Operation Co., LTD. On this basis, Zijin Mining quickly pushed for the reorganization of the board of directors of Longking. The former directors of the Sunshine Group resigned collectively. The new board consists of 7 non-independent directors and 4 independent directors. Among them, Zijin Mining nominated 5 non-independent directors and led the appointment and removal of key positions such as chairman, president and chief financial officer. As a result, the reverse mixed-ownership reform shifted from equity control to governance control, and Zijin Mining began a comprehensive integration of Longking in key areas such as strategic planning, investment decision-making, and financial management. Financial performance analysis

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

3.2.1. Profitability

Profitability is a key measure of a company's core competitiveness and the quality of its earnings, and it is directly linked to the level of the company's profit margin. This paper selects four representative financial indicators, namely return on equity (ROE), return on total assets (ROA), gross profit margin, and net profit margin, to compare the changes in the indicators of profitability of Longking over three years before and after its reverse mixed-ownership reform. Among them, return on equity reflects the level of return on shareholders' equity, return on total assets reflects the utilization efficiency of all assets of the enterprise, gross profit margin reveals the initial profit space of products or services, and net profit margin comprehensively measures the ultimate profit-making ability of the enterprise.

Table 3. Changes in Longking's profitability indicators from 2019 to 2025

	2019	2020	2021	2022	2023	2024	2025
Return on net assets (%)	15.89	12.33	13.33	11.18	6.74	10.13	10.58
Return on total assets (%)	4.26	3.04	3.35	3.03	1.95	3.16	4.02
Gross margin (%)	22.24	21.62	23.18	23.4	23.68	24.84	25.17
Net profit margin (%)	7.87	6.98	7.71	6.81	4.61	8.21	9.33

From 2019 to 2021, Longking's overall earnings were at a relatively high level, showing a slight downward trend. In 2019, the company's return on net assets reached 15.89%, return on total assets 4.26%, and net profit margin on sales 7.87%, both at relatively high levels, mainly due to the steady growth of its traditional atmospheric environmental protection equipment business. In 2020, due to the impact of the COVID-19 pandemic, the construction progress of environmental protection projects across the country generally slowed down, and the customer payment cycle was significantly prolonged. At the same time, the company's profitability declined temporarily due to increased period expenses caused by epidemic prevention expenditures and downtime losses, and the return on net assets dropped to 12.33% Return on total assets and net profit margin on sales fell back to 3.04% and 6.98% respectively. In 2021, with the normalization of epidemic prevention and control, the environmental protection industry gradually recovered, the company's operating conditions improved slightly, the return on net assets rose slightly to 13.33%, and the return on total assets and net profit margin on sales also recovered to 3.35% and 7.71% respectively. Notably, during this period, the company's gross profit margin on sales showed a steady upward trend, rising from 22.24% in 2019 to 23.18% in 2021, indicating that through optimizing the product structure, increasing investment in high-margin product research and development, and strengthening cost control, the initial profit margin of the core main business continued to expand. It effectively offset the adverse effects of intensified market competition and rising steel and labor costs, but the contribution of incremental profits was limited. At the same time, the company exposed potential problems such as the occupation of funds by the original controlling shareholder and significant deficiencies in internal control, which directly triggered the accounting firm to issue a negative opinion on Longking's 2021 internal control report and directly led to the implementation of other risk warnings on the company the following year. Although it did not have a significant impact on the current period's earnings, it planted a serious hidden danger for the subsequent decline in performance.

In 2022-2023, under the dual impact of the implementation of reverse mixed-ownership reform and the outbreak of compliance risks, all profit indicators of Longking fell to the lowest in recent years. In May 2022, Zijin Mining officially took control of the company, and the actual controller changed, followed by a transition period of equity consolidation, management

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

reshuffle and strategic direction rearrangement, with organizational restructuring and management team adjustments leading to a decline in short-term operational decision-making efficiency. At the same time, the company was subject to ST penalties by the Shanghai Stock Exchange due to the occupation of funds by its former controlling shareholder, which severely damaged its brand reputation, restricted bank financing channels, and significantly increased financial expenses, further compressing its profit margin. In addition, after the mixed-ownership reform, the company established a dual-wheel drive development strategy of "environmental protection + new energy". In 2022-2023, Longking concentrated a large amount of resources to establish a carbon neutrality research institute and lay out new energy projects such as photovoltaic and wind power. The upfront research and development expenses and capital expenditures increased significantly, while the new projects were still in the construction period and had not yet generated revenue. It has had a significant devouring effect on the current profits. In 2022, the company's return on net assets dropped to 11.18%, and its return on total assets and net profit margin on sales declined to 3.03% and 6.81% respectively. In 2023, the adverse factors continued to feside, and the company's profitability deteriorated further. The return on net assets dropped to 6.74%, and the return on total assets and net profit margin on sales fell to 1.95% and 4.61% respectively, the lowest levels in nearly seven years. But the gross profit margin still rose slightly from 23.40% in 2022 to 23.68% in 2023, which fully demonstrated that the core competitiveness of the company's traditional atmospheric environmental protection equipment business was not lost due to equity changes and compliance risks, and the product bargaining power and cost control ability remained stable. It provided a solid profit support for the company to get through the painful period of transformation.

In 2024-2025, with the gradual completion of mixed-ownership reform and the effective implementation of internal control rectification, Longking's profitability entered a stage of comprehensive recovery and rapid growth, with all indicators showing a strong rebound trend. In 2024, the company's return on net assets rebounded to 10.13%, the return on total assets and net profit margin on sales rebounded to 3.16% and 8.21% respectively, and the gross profit margin on sales increased further to 24.84%. The company's profitability will continue to improve in 2025, with the return on equity rising to 10.58% and the return on total assets reaching 4.02%, basically returning to the 2019 level; The net profit margin on sales reached a new high of 9.33%, surpassing the highest level before the mixed-ownership reform; The gross profit margin also climbed to 25.17 percent, maintaining a steady growth trend. This is mainly due to the full completion of the internal control rectification work in 2024, the official removal of ST risk, the return of corporate governance and internal control system to the right track, the significant improvement of business standardization, and the effective control of financial risk. At the same time, relying on Zijin Mining's abundant mine resources and strong financial advantages, the company's "environmental protection + new energy" dual-wheel drive strategy has gradually taken effect. The new energy business has been put into production one after another and has begun to contribute stable revenue and profits, becoming a new profit growth pole for the company. In addition, Zijin Mining's credit endorsement has effectively alleviated the company's financial pressure, financing costs have dropped significantly, and the erosive effect of financial expenses on profits has weakened significantly. Under the combined effect of multiple favorable factors, Zijin Mining launched a 2 billion yuan private placement plan in 2025 to further supplement the company's working capital, and at the same time implemented an employee stock ownership plan to bind the interests of the core team, laying a solid foundation for the continuous improvement of the company's subsequent profitability. Overall, the full recovery of the company's profitability at this stage fully validates the positive effect of reverse mixed-ownership reform on the optimization of corporate governance, the upgrading of business structure and the improvement of profit quality.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

3.2.2. Operational Capacity

Operational capacity is the core dimension for measuring the efficiency of an enterprise's asset management and the quality of its operations, directly reflecting the rationality of the enterprise's resource allocation and the smoothness of its business activities. This paper selects three core indicators - total asset turnover, inventory turnover, and accounts receivable turnover - to compare the changes in the indicators of operating capacity of Longking over three years before and after the reverse mixed-ownership reform. Among them, total asset turnover reflects the utilization efficiency of all assets, inventory turnover measures the speed of inventory turnover and the level of inventory management, and accounts receivable turnover reflects the efficiency of sales collection and the effect of credit policy.

Table 4. Changes in Operating capacity indicators of Longking from 2019 to 2025

	2019	2020	2021	2022	2023	2024	2025
Total asset turnover (times)	0.54	0.44	0.43	0.45	0.42	0.39	0.43
Inventory turnover (times)	1.12	0.89	0.90	1.02	1.09	1.17	1.50
Accounts receivable turnover(times)	3.51	3.44	4.12	4.09	3.59	3.07	3.18

From 2019 to 2021, the overall operating capacity of Longking showed a fluctuating downward trend. The total asset turnover rate and inventory turnover rate gradually slowed, but the accounts receivable turnover rate increased. The total asset turnover rate continued to decline from 0.54 times in 2019 to 0.43 times in 2021, indicating that the utilization efficiency of the company's total assets has decreased year by year. This change was mainly due to the stagnation of environmental protection projects and delayed order delivery caused by the COVID-19 pandemic in 2020, which slowed revenue growth, while the company expanded production scale to cope with competition. Fixed assets and inventories continued to grow but revenue failed to increase in tandem, thus lowering overall asset turnover efficiency. The inventory turnover rate dropped from 1.12 times in 2019 to 0.89 times in 2020 and rebounded slightly to 0.90 times in 2021, remaining at a relatively low level. Longking, a large environmental equipment manufacturing enterprise, has products with high customization and long production cycles. The purchase of raw materials and the inventory of finished products occupy a large amount of funds. Coupled with supply chain disruptions and delivery delays caused by the epidemic, it has further exacerbated the inventory backlog. In contrast to the previous two indicators, the accounts receivable turnover rate rose from 3.51 times in 2019 to 4.12 times in 2021, indicating that the company intensified the collection of accounts receivable during this period, optimized the customer credit management system, and significantly accelerated the collection speed, effectively alleviating the cash flow pressure.

In 2022-2023, due to multiple factors such as equity integration, strategic transformation, and the industry environment, Longking's total assets and accounts receivable turnover efficiency declined, but its inventory management capabilities improved. Total asset turnover, which rebounded slightly to 0.45 times in 2022, fell back again in 2023. It may be due to organizational restructuring and management adjustments caused by changes in the actual controller of the company during this period, which led to a decline in the efficiency of short-term business decisions and a slowdown in the progress of some projects; At the same time, after the company established the "environmental + new energy" dual-wheel drive strategy, it concentrated a large amount of funds to layout new energy projects such as photovoltaic and wind power, and the scale of fixed assets and construction in progress increased significantly, while the new projects were still in the construction period and had not yet generated revenue, making it difficult to improve the asset turnover efficiency. The accounts receivable turnover rate dropped from 4.09 times in 2022 to 3.59 times in 2023, falling back to the 2019 level, mainly

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

due to the deterioration of the overall collection environment in the environmental protection industry, the tightening of local finances leading to the general extension of payment terms for government-related projects, and the company's appropriate relaxation of credit policies for some new customers in order to expand new energy business. On the contrary, the inventory turnover rate showed a steady upward trend, rising to 1.09 times in 2023, indicating that the management of the company attached great importance to inventory management after the mixed-ownership reform and may have effectively reduced the level of inventory overstock through measures such as optimizing supply chain processes, implementing lean production, and strengthening dynamic inventory monitoring, and the inventory turnover rate gradually accelerated.

In 2024-2025, as the mixed-ownership integration is gradually completed and new businesses are gradually implemented, Longking's total asset turnover rate will be relatively stable, the improvement in inventory turnover efficiency will be particularly significant, while the accounts receivable turnover rate will decline compared to before the mixed-ownership reform. The total asset turnover rate declined further to 0.39 times in 2024, possibly due to the arrival of 2 billion yuan of private placement funds for Zijin Mining in 2024, which led to a significant increase in the company's monetary funds and fixed asset scale, while revenue growth lagged behind. In 2025, with new energy projects coming on stream and contributing to revenue, and orders for traditional environmental equipment business accelerating, the total asset turnover rate rebounded to 0.43 times, and asset utilization efficiency began to improve. Accounts receivable turnover, which dropped to a low of 3.07 in 2024, rose slightly to 3.18 times in 2025 but was still lower than before the mixed-ownership reform. This is because the revenue from environmental engineering equipment accounted for a relatively high proportion of Longjing Environmental's revenue, and there were time differences between the revenue settlement of some of its projects and the collection arrangements stipulated in the contract. With the expansion of business scale and the increase in the number of projects, This has led to a continuous increase in accounts receivable. After the inventory turnover rate rose to 1.17 in 2024, it jumped sharply to 1.50 in 2025, an increase of 68.5% from its 2020 low. The significant increase was driven by higher standardization and faster turnover of products in the new energy business, which also boosted the company's overall inventory turnover efficiency.

3.2.3. Solvency

Solvency is a core dimension for measuring a company's financial health and resilience, directly determining whether a company can operate steadily and sustainably. Its strength not only affects the company's financing costs and capital structure, but is also closely related to the interests of shareholders and the safety of creditors. This paper selects three core indicators, current ratio, quick ratio and debt to asset ratio and combines the financial data of Longking from 2019 to 2025 to analyze the changes in the indicators of Longking 's solvency in each of the three years before and after the reverse mixed-ownership reform, and explore the actual effect of the reverse mixed-ownership reform on the company' s solvency.

Table 5. Changes in solvency indicators of Longking from 2019 to 2025

	2019	2020	2021	2022	2023	2024	2025
Current ratio	1.20	1.25	1.28	1.28	1.17	1.20	1.17
Quick ratio	0.65	0.66	0.74	0.77	0.75	0.81	0.84
Debt-to-asset ratio	0.73	0.75	0.74	0.71	0.69	0.61	0.61

From 2019 to 2021, Longking's solvency was generally at a weak level, with insufficient debt liquidity and continuous accumulation of financial risks. In terms of short-term solvency, the current ratio fluctuated slightly between 1.20 and 1.28, while the quick ratio hovered between

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

0.65 and 0.74, both at a lower average level. As shown in Table 5, inventory accounts for a relatively high proportion of the company's current assets. In 2020, inventory reached 9.227 billion yuan, accounting for 47.6% of current assets. A large amount of funds are deposited in unsettled engineering projects and raw materials, with insufficient immediate liquidity and certain risks in short-term debt repayment. In terms of long-term solvency, the debt-to-asset ratio has remained in a high range above 73%, reaching 74.79% in 2020, which is much higher than the average level of the environmental protection industry. The company has long relied on debt financing, with excessive financial leverage and significant long-term debt-paying pressure. The situation is mainly due to the huge debts accumulated passively or actively by the company to support its external mergers and acquisitions and diversification strategy. It is notable that in the second section of the operational capacity analysis, the company's accounts receivable turnover rate continued to increase during this period, and its ability to collect payments was enhanced to some extent, which relieved the cash flow pressure but did not fundamentally improve the overall solvency.

In 2022-2023, affected by equity changes and strategic adjustments, the company's liabilities gradually declined, short-term liquidity improved, and overall financial risks began to ease marginally. In terms of short-term solvency, the current ratio remained basically stable between 1.17 and 1.28; The quick ratio rose from 0.62 in 2021 to 0.75 in 2023. Combined with the analysis of operating capacity in Section 2, the company's inventory turnover efficiency continued to improve and its ability to convert current assets into cash was enhanced. In terms of long-term solvency, the debt-to-asset ratio dropped from 73.90% in 2021 to 68.58% in 2023, indicating a reduction in long-term debt-paying pressure. This change was mainly due to the fact that Zijin Mining, after taking over, helped the company optimize its debt structure through capital injection, guarantee and other means, in addition. The company has optimized its business structure, gradually clearing or optimizing some projects with a large amount of upfront occupation and a long payback period, while strengthening the settlement management of ongoing projects to reduce long-term capital occupation. However, the company has increased its capital expenditure to lay out its new energy business, which has put some pressure on cash flow in the short term and limited the improvement in its solvency.

In 2024-2025, with the full completion of mixed-ownership reform integration and the effective implementation of internal control rectification, both long-term and short-term debt-paying capacity indicators of Longking showed positive trends, and the company's financial risks were effectively controlled. In terms of short-term solvency, the current ratio is stable within the range of 1.17-1.20 with little fluctuation, and the company 's ability to cover current liabilities with current assets remains stable. The quick ratio rose from 0.75 in 2023 to 0.84, indicating an increase in the proportion of highly liquid assets such as money funds. In terms of long-term solvency, the debt-to-asset ratio dropped significantly from 68.58% in 2023 to 60.65% in 2025. This change was partly due to the replenishment of equity capital through private placement and convertible bond conversion after Zijin Mining took over, and partly due to the continuous improvement of the company's operating cash flow, which reduced its reliance on debt financing. Overall, after the reverse mixed-ownership reform, Longking, through inventory reduction and capital structure optimization, reduced financial leverage and enhanced refinancing capacity while successfully reducing inventory size. The company's short-term solvency was not weakened by the slight decline in the current ratio, but was enhanced by the improvement in asset quality, and the company's financial risk was further reduced.

3.2.4. Development Capacity

Development capacity is the core dimension for measuring a company's future growth potential and sustainable development capacity, and its strength directly determines the company's long-term competitive position in the industry. This paper selects three core indicators: revenue growth rate, total asset growth rate, and net profit growth rate. Combined with the

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

financial data of Longking from 2019 to 2025 and the comparison with the same industry, it analyzes the changes in indicators of Longking 's development capacity in each of the three years before and after reverse mixed-ownership reform, and explores the actual effect of reverse mixed-ownership reform on the company' s development capacity. The subjects involved in the following analysis are shown in Table 6.

Table 6. Changes in Longking's Development Capacity Indicators from 2019 to 2025

	2019	2020	2021	2022	2023	2024	2025
Revenue growth rate (%)	16.3	-6.9	10.96	5.16	-7.64	-8.69	18.49
Net profit growth rate (%)	6.22	-17.42	22.42	-6.48	-36.74	63.15	33.95
Growth rate of total assets (%)	14.48	16.45	7.08	-1.82	-4.24	5.89	5.64

From 2019 to 2021, Longking did not introduce state-owned capital, and its development capacity indicators fluctuated greatly. Revenue growth reached a phase high of 16.30 per cent in 2019 but plunged to -6.90 per cent in 2020 and rebounded to 10.96 per cent in 2021. This fluctuation reflects the company's reliance on a single business area and the uncertainty of the pace at which non-electricity orders are released. Net profit growth was also unstable, from 6.22 per cent in 2019 to a sharp drop to -17.42 per cent in 2020 and a surge to 22.42 per cent in 2021, with the company's earnings likely to be significantly affected by non-recurring gains and losses and project settlement cycles. The growth rate of total assets dropped from 14.48 percent in 2019 to 16.45 percent in 2020 and then to 7.08 percent in 2021, with the pace of asset expansion slowing year by year. In addition, during this period, the company has exposed problems such as the occupation of funds by the original controlling shareholder and internal control deficiencies, and the shrinking of the incremental market for traditional air pollution control has further restricted its growth space, and Longking lacks sustainability in its development capabilities.

Zijin Mining officially took over in 2022, and the company entered a stage of strategic adjustment. Revenue growth declined again to 5.16% in 2022 and further dropped to -7.64% in 2023, marking two consecutive years of slowdown or negative growth. Net profit growth plummeted to -36.74 percent in 2023. This is not the collapse of the main business, but rather the company's initiative to clear historical burdens, making large provisions for bad debts and impairment of goodwill, such as making a goodwill impairment of 361 million yuan for hazardous waste projects acquired during the Sunshine City period and terminating inefficient PPP projects, which led to a significant reduction in book profits. Total asset growth has also been negative for two consecutive years: -1.82% in 2022 and -4.24% in 2023, with asset size shrinking from 26.91 billion yuan in 2021 to 25.30 billion yuan in 2023. Despite the pressure on growth indicators, it cleared the way for subsequent healthy development.

In 2024-2025, with the completion of mixed-ownership reform integration and the gradual implementation of new energy business, the development capacity of Longking will be reversed. Although revenue growth was affected by the pace of recognition of environmental engineering revenue and was still -8.69% in 2024, it rebounded strongly to 18.49% in 2025. Net profit growth was even better, reaching 63.15% in 2024 and 33.95% in 2025, maintaining high growth for two consecutive years. This is due to the continued increase in gross margin, the decline in period expense ratio, and the new energy business starting to contribute profits. The growth rate of total assets also turned positive, at 5.89% in 2024 and 5.64% in 2025. The asset size resumed steady expansion, reaching 28.30 billion yuan by the end of 2025. It is notable that this stage of growth is more sustainable, driven by improved profitability in the main business and emerging businesses, and the quality of development capabilities is significantly higher than before the mixed-ownership reform.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

4. Research Conclusion

This paper focuses on the reverse mixed-ownership reform of Longking in 2022, and combines financial data from 2019 to 2025 to conduct a longitudinal analysis from the four capabilities of profitability, debt repayment, operation and development, and comprehensively evaluate the actual impact of reverse mixed-ownership reform on the financial performance of the enterprise. In terms of profitability, during the transition period of mixed-ownership reform, profit indicators weakened in the short term due to internal integration and early-stage investment in new businesses. With the gradual release of the synergy effect of state-owned assets and industries, the company's gross profit margin and net profit margin continued to rise, and its later profit level was significantly better than that of the industry and benchmarking enterprises. The improvement in solvency is more prominent. State-owned capital provides credit endorsement and equity funds, continuously reduces the scale of corporate liabilities, the asset-liability ratio drops significantly, both short-term and long-term debt-paying indicators are optimized simultaneously, and the long-term high debt operating risk is effectively mitigated. Operating capacity showed differentiated characteristics. Relying on standardized production of new energy and refined inventory management, inventory turnover efficiency continued to improve. However, affected by the common problems in the environmental protection industry such as project advance funding and prolonged payback cycle, accounts receivable turnover did not improve significantly. In terms of development capabilities, the mixed-ownership reform helped the enterprise open up the second growth curve of new energy. Relying on the upstream and downstream resources of Zijin Mining to offset the downward pressure of the industry, the rebound in revenue and net profit growth was significantly stronger than that of its peers, and the growth stability and development quality were greatly improved

Based on the performance in the four major financial dimensions, it can be seen that the reverse mixed-ownership reform as a whole has a positive improvement effect on the financial performance of Longking, effectively resolving the company's previous operating predicament of tight funds and weak growth, and releasing obvious dividends in terms of debt repayment safety, profit quality and long-term growth, only accounts receivable turnover has not been optimized simultaneously due to inherent constraints of the industry. This result also indicates that the reverse mixed-ownership reform model, which introduces state-owned capital with industrial chain resources and achieves deep integration of governance and business, can effectively help private environmental protection enterprises optimize their financial status and provide practical references for similar enterprises in the industry.

References

[1] Liu, X. X., & Li, M. H. (2023). Reverse mixed-ownership reform of private enterprises and audit opinions. Business Economics and Management, (11), 33–48.

[2] Chen, Z. W. (2023). Does "reverse mixed-ownership reform" affect auditor risk perception: Empirical evidence from the perspective of abnormal audit fees. Journal of Zhongnan University of Economics and Law, (4), 28–40.

[3] He, D. X., Zeng, M., & Zhang, S. N. (2022). How does the participation of state-owned capital affect private enterprises? A study based on the perspective of debt financing. Management World, 38(11), 189–207.

[4] Lin, B. H., & Li, B. X. (2024). Research on the impact of "reverse mixed-ownership reform" on debt default risk of private enterprises. Journal of Management, 21(10), 1562–1571.

[5] Zeng, M., Li, C. Q., & Li, Y. K. (2022). How does the participation of state-owned capital affect the cash holdings of private enterprises? A dual perspective based on cooperative advantage and competitive balance. Economic Management, 44(4), 134–152.

ISSN: 2692-7608 DOI: 10.6981/FEM.202608_7(8).0005

[6] Lu, Z. J., & Wang, Z. J. (2024). State-owned Capital Participation and the Strategic Choices of Private Enterprises. Journal of Zhongnan University of Economics and Law, (4), 29–42.

[7] Huang, Y., Chen, P. P., & You, X. L. (2024). How much governance effect does the "reverse mixed-ownership reform" of private enterprises have? Evidence based on regulatory inquiries. Journal of Management Engineering, 38(1), 162–178.

[8] Hao, Y., & Gong, L. T. (2017). Mixed state and private equity participation and corporate performance improvement. Economic Research Journal, 52(3), 122–135.

[9] Li, W. G., & Shao, Y. P. (2016). Industrial policy and nationalization of private enterprises. Journal of Financial Research, (9), 177–192.