

Motivation and Performance Analysis of China Urban and Rural Green Mergers and Acquisitions

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Abstract: The objective of "reaching the Peak of Carbon and Carbon Neutrality" is to drive a fundamental transformation of China's economy and society towards a low-carbon, environmentally sustainable, and socially just model of development. In this context, enterprises are confronted with a unique set of challenges and opportunities for transformation. As an efficacious and innovative strategic instrument, green merger and acquisition has gradually become an important avenue for enterprises to expeditiously achieve green transformation. This paper employs the case of China Urban and Rural green mergers and acquisitions as a point of departure for a detailed examination of the motivations underlying enterprises' green mergers and acquisitions. It proceeds to analyse the changes in enterprise performance before and after such mergers and acquisitions, and concludes with a series of targeted suggestions. The paper's objective is to provide practical guidance and theoretical reference for Chinese enterprises' green mergers and acquisitions, and to contribute to the high-quality development of Chinese enterprises.

1. Introduction

In the context of rapid economic development, environmental issues have become a major concern in the global economy. The "double carbon" target, i.e. the target of carbon peak and carbon neutrality, is an important commitment of China to the global climate change issue and an important strategy to promote high-quality domestic economic development. Since the "double carbon" target was proposed, the Chinese government has begun to promote the adjustment of industrial and energy structures and advocate green and low-carbon production methods to achieve a comprehensive green transformation of the economy and society. As a core component of the development of a green economy, enterprises have the responsibility to take the initiative to carry out environmental management work to support the realisation of the "double carbon" target and promote high-quality economic development. Therefore, enterprises are starting to rapidly realise green transformation through green mergers and acquisitions, which not only contributes to their sustainable development, but also meets the country's overall requirements for green development.

Against this background, this paper takes China Urban and Rural Holding Group Co., LTD. (hereinafter referred to as "China Urban and Rural") green merger and acquisition of Beijing Green Water Source Technology Co. (hereinafter referred to as "Green Water Source") as the research

object, discusses the motivation of merger and acquisition through the introduction of merger and acquisition process, and discusses the impact of merger and acquisition on corporate performance from two aspects: financial performance and environmental performance. Finally, according to the conclusions of the study, the policy suggestions are put forward to promote the high-quality development of enterprises.

2. Literature Review

2.1. Motivation for Green Merger and Acquisition

At present, academic circles mainly analyze motivation from three aspects: external driving force, internal driving force, and moral driving mechanism. From the perspective of green mergers and acquisitions, scholars such as Huang Weina and Yuan Tianrong (2021) empirically analyzed how macro-industrial policies affect the behavior of micro-enterprises in transition economies [1]. Yang Zihan and Lv Chan (2024) proposed through empirical tests that managerial overconfidence would affect management's attention to environmental issues, thus hindering green mergers and acquisitions of industrial enterprises [2]. Zhang Raolong and Liu Chen et al. (2024) pointed out that for highly polluting enterprises, green mergers and acquisitions plays an important role in shaping their green image. Specifically, this green image is achieved by promoting green innovation activities and actively fulfilling social responsibility [3].

2.2. Performance of Green Merger and Acquisition

Green mergers and acquisitions can not only help enterprises to obtain green resources and develop green technologies, improve environmental performance, but also promote the optimization of corporate structure and improve innovation and economic performance. He Fan and Meng Fanchen (2022) believe that enterprises can improve their internal structure through green mergers and acquisitions, which not only promotes the efficient allocation and use of innovation resources and improves the innovation performance of enterprises, but also helps to reduce the cost of mergers and acquisitions and improve the economic performance of enterprises [4]. Scholars such as Wu Yewei and Zhou Linyu (2023) proposed that green mergers and acquisitions can effectively improve the level of green innovation, environmental performance, and ESG rating of enterprises [5].

2.3. Literature Review

In summary, although the existing literature has conducted more detailed empirical studies on the motivation of green mergers and acquisitions and its impact on corporate performance, these studies often lack in-depth discussion of specific cases. Therefore, this paper adopts the case study method and selects the Green Water Source case of "China Urban and Rural green mergers and acquisitions as the research object, in order to analyse in detail the motivation, implementation process and performance changes before and after the merger and acquisition, in order to provide some references for Chinese enterprises' green mergers and acquisitions and promote the high-quality development of Chinese enterprises.

3. Overview of Merger and Acquisition Cases

3.1. Overview of Merger and Acquisition Subjects

3.1.1. Profile of the Acquirer

China Urban and Rural was officially incorporated on 19 September 1984 and is a wholly-owned secondary subsidiary of China Communications Construction Group Co., LTD. under the ultimate control of the State-owned Assets Supervision and Administration Commission ("SASAC"). The scope of China Urban and Rural's business is quite broad, covering investment and construction of infrastructure projects, investment, development, management and operation activities in many fields such as municipal engineering, energy services, water management, ecological restoration, environmental protection, energy conservation and environmental protection industry, landscaping, smart city construction, information technology, tourism projects, health care and elderly care services, agriculture and forestry under the integration of urban and rural areas. In addition, the Company has made profound design and significant progress in many key areas such as water resources management, green energy development, ecological environmental protection, and urban and rural comprehensive development.

3.1.2. Introduction of the Acquired Company

Established in 2001, Green Water Source is a high-tech environmental protection water treatment company founded by returning scholars in Zhongguancun National Independent Innovation Demonstration Zone. It was listed on the GEM of the Shenzhen Stock Exchange in 2010. The company focuses on the research, development and application of membrane technology, providing sewage resources, high quality drinking water, seawater desalination, industrial non-discharge lithium extraction from salt lakes and other comprehensive solutions. With self-developed microfiltration, ultrafiltration, nanofiltration and reverse osmosis membrane technologies, Green Water Source has become the benchmark of China's environmental protection water industry, the world's leading membrane equipment manufacturer has won the National Science and Technology Progress Award many times, and actively participated in the national science and technology major projects, committed to global water resources management and environmental protection.

3.2. Overview of the Merger Process

Green mergers and acquisitions of Green Water Source in China Urban and Rural can be divided into three main stages:

3.2.1. Initial Investment

On 4 June 2019, China Urban and Rural officially signed a share transfer and supplemental agreement with the major shareholder of Green Water Source and its related parties, according to which China Urban and Rural successfully acquired 10.18% of the equity of Green Water Source at a cost of RMB2.869 billion, becoming the second largest shareholder of Green Water Source.

3.2.2. Shareholding Transformation

In August 2020, China Urban and Rural will gradually increase its shareholding in Green Water Source through private placement and other means. In September 2021, after Green Water Source is approved by the CSRC to issue shares for certain purposes, China Urban and Rural will carry out

mergers and acquisitions according to the established plan and successfully hold 790,375,092 shares (21.75%), becoming the largest controlling shareholder of Green Water Source.

3.2.3. Increased Shareholding

On 27 July 2022, China Urban and Rural officially made an offer to acquire Green Water Source. Upon completion of the acquisition, the total number of shares in Green Water Source held by China Urban and Rural and their concerted actors increased to 1,210,485,927 shares, representing 33.40% of the total share capital of Green Water Source.

4. Analysis of Merger and Acquisition Motivation

4.1. Responding to National Policies

State-owned enterprises play an important role in achieving the goal of carbon peak and carbon neutrality. Through the reform of mixed ownership and the introduction of non-state-owned capital, the internal governance structure of enterprises can be optimised, the efficiency of resource and energy use can be improved, and enterprises can realise green and low-carbon transformation [6]. Through green mergers and acquisitions, China Urban and Rural, on the one hand, responded to the country's call for mixed ownership reform, on the other hand, helped the merging and acquisition parties to fully realise energy saving, carbon reduction and low-carbon development, and responded to the "double carbon" goal.

4.2. Leverage Synergy Effects

Through the green mergers and acquisitions of Green Water Source in China Urban and Rural, both sides of the mergers and acquisitions have played a significant synergy effect, promoting the green development of enterprises and the innovation and application of environmental protection technology. First of all, in terms of strategic goals, China Urban and Rural and Green Water Source have achieved integration strategic goals and jointly defined the development direction of world-class water enterprises led by membrane technology. The two sides have made great efforts in the fields of sewage resource recycling, high quality drinking water, seawater desalination and other business fields, providing technical and industrial support to solve the problems of urban and rural water environment, water resources and water ecology. Secondly, in terms of business development, Green Water Source has achieved coordination with China Urban and Rural in six aspects, including management, market, operation, design, procurement and finance, which has improved the quality and efficiency of operation, enhanced the business capacity and optimised the management system. Finally, in terms of corporate internal governance, both parties can share the experience and resources of corporate risk management, establish a more effective risk control mechanism, and reduce the operational risks of the company.

4.3. Promoting Diversified Development

Green Water Source has leading membrane technology that can treat wastewater into high-quality recycled water, and independent intellectual property rights in membrane material production technology. On the one hand, the merger and acquisition of China Urban and Rural can help to combine these technological advantages with their project resources, improve the project execution efficiency and market expansion ability, and promote the diversified development of the enterprises. On the other hand, the background and resources of China Urban and Rural will help Green Water Source to explore new markets and business opportunities to realise the diversified

development of Green Water Source Company.

5. Merger and Acquisition Performance Analysis

5.1. Financial Performance Analysis

In the evaluation of financial performance, this paper starts from the perspective of profitability, solvency and operational capacity, and evaluates the influence of merger and acquisition on the financial performance of China Urban and Rural by analysing the relevant financial indicators before and after the merger and acquisition of China Urban and Rural.

5.1.1. Profitability

Profitability serves as a crucial index to measure the operational efficiency of a company. Therefore, this paper selects corporate net profit, net profit margin on sales, operating profit ratio and return on equity to reflect the profitability of China Urban and Rural. The indicators before and after the integration of China Urban and Rural are shown in the table 1:

Table 1: Profitability indicators

	2018	2019	2020	2021
Net Profit(million)	0.27	2.38	14.69	6.04
Net Profit Margin on Sales	1.61%	7.84%	15.02%	4.38%
Operating Profit Ratio	2.80%	8.46%	15.21%	5.47%
Return on Equity	1.88%	5.67%	7.53%	1.83%

As can be seen from the table above, in the initial stage of China Urban and Rural's merger, namely from 2019 to 2020, China Urban and Rural's net profit, net profit margin on sales, operating profit ratio and return on equity all increased significantly, and in 2020, when China Urban and Rural became the largest shareholder of Green Water Source, each indicator reached its highest point. In 2021, China Urban and Rural completed the merger and acquisition of Green Water Source, and Green Water Source became a major part of China Urban and Rural. Since 2018, Green Water Source has started to develop the PPP model and significantly increased the PPP project engineering business, which directly affects the cash flow and net profit of Green Water Source, as PPP projects involve large capital investment and face a long payback period. The deterioration in the company's profitability not only affected its financial health, but also affected the long-term profitability and market competitiveness of China Urban and Rural, resulting in a decline in its net profit, net profit margin on sales, operating profit ratio and return on equity in 2021.

5.1.2. Solvency

Solvency reflects the level of debt management of enterprises, and proper control of debt is crucial to exercising financial leverage and maintaining financial stability. The current ratio and quick ratio can reflect the short-term solvency of enterprises, and the debt to asset ratio can reflect the long-term solvency of enterprises. This paper selects three indicators of current ratio, quick ratio and debt to asset ratio to analyse solvency. The indicators before and after the merger of China Urban and Rural are shown in the table 2:

The debt to asset ratio, current ratio, and quick ratio of China Urban and Rural in 2019 decreased significantly compared to 2018, indicating that China Urban and Rural also faces the financial risk of increasing debt while expanding. In order to complete mergers and acquisitions, companies not

only invested a lot of cash, but also expanded the size of liabilities, resulting in a significant increase in accounts payable. In 2020, China Urban and Rural becomes the largest shareholder of Green Water Source, so the indicators in 2021 have recovered compared to those in 2020, indicating that the successful merger and acquisition of Green Water Source by China Urban and Rural has improved the solvency of China Urban and Rural.

Table 2: Solvency indicators

	2018	2019	2020	2021
Debt to Asset Ratio	48.25%	46.79%	61.91%	63.71%
Current Ratio	181.71%	127.52%	107.12%	107.96%
Quick Ratio	111.76%	58.37%	66.37%	66.62%

5.1.3. Operational Capacity

Operational capacity is a company's ability to manage and use resources effectively. In this paper, asset turnover, inventory turnover and accounts receivable turnover are selected to reflect the operational capacity of enterprises. The indicators before and after the merger of China Urban and Rural are shown in the table 3:

Table 3: Operational capacity indicators

	2018	2019	2020	2021
Asset Turnover	0.52	0.38	0.20	0.16
Inventory Turnover	2.61	1.38	2.35	2.78
Accounts Receivable Turnover	7.09	9.40	2.34	1.51

As can be seen from the above table, the asset turnover of China Urban and Rural was always low and started to decline year by year after the merger and acquisition, indicating that the ability of China Urban and Rural to use its assets to generate sales revenue is declining and the company's assets are not fully utilised. Inventory turnover fell to 1.38 in 2019. It rebounded in 2020 and 2021, indicating that after the successful acquisition of Green Water Source, China Urban and Rural has realised business expansion and enterprise scale expansion due to the merger with Green Water Source, and the inventory turnover rate has started to increase. After the merger and acquisition of Green Water Source by China Urban and Rural, the turnover of accounts receivable decreased significantly. The reason is that under the influence of macro policies, China Urban and Rural's accounts receivable started to increase year by year. However, due to the improper management of accounts receivable in China Urban and Rural, the accounts receivable in China Urban and Rural began to decrease significantly.

5.2. Analysis of Environmental Performance

5.2.1. Integrating and Innovating Green Technology

In the field of water treatment, Green Water Source has a number of independent innovative technologies, such as "MBR+DF" membrane bioreactor technology and double membrane method (ultrafiltration + reverse osmosis) advanced treatment technology, which have significant advantages in improving water quality, reducing energy consumption and reducing sludge generation. Through the merger and acquisition of Green Water Source, China Urban and Rural has incorporated these technologies into its technical system and promoted and applied them nationwide, greatly enhancing its technical strength in the field of environmental protection. At the same time,

based on technology integration, China Urban and Rural and Green Water Source have jointly increased their investment in environmental protection technology research and development, and are committed to developing new technologies, new processes and new equipment that are more efficient, energy-saving and environmentally friendly. These new technologies can not only achieve significant results in improving water quality and reducing energy consumption, but also promote scientific and technological progress and industrial upgrading of the entire environmental protection industry.

5.2.2. Developing and Implementing Green Projects

After the merger of Green Water Source into China Urban and Rural, based on its advanced membrane bioreactor (MBR) technology, China Urban and Rural accelerated the construction of wastewater treatment projects, effectively alleviating water shortage and water pollution problems. In addition, as an important part of green projects, ecological restoration occupies an important position in China Urban and Rural's business. The acquisition of Green Water Source has brought rich experience and technical support in the implementation of ecological restoration projects to China Urban and Rural, enabling China Urban and Rural to smoothly carry out a series of ecological restoration projects, such as ecological management of rivers and lakes, wetland protection and restoration, and urban green space construction.

5.2.3. Improving Resource Utilising Efficiency

China Urban and Rural has achieved remarkable results in improving the efficiency of resource use through green mergers and acquisitions. In terms of water resource utilisation, China Urban and Rural have jointly promoted a series of water resource recycling projects, such as the reuse of urban reclaimed water and zero discharge of industrial wastewater, successfully realising the maximum utilisation of water resources. In terms of energy management, China Urban and Rural gives full play to the synergistic effect of the Green Water Source and effectively reduces the project's operational energy consumption by introducing energy-saving equipment, optimising process flow, strengthening energy management and other measures. At the same time, China Urban and Rural also actively promotes the application of green energy, such as solar photovoltaic power generation, wind power generation, etc., to provide clean and sustainable energy support for environmental protection projects; in terms of materials and land resources, China Urban and Rural has realised the economical use of materials and land resources by adopting environmentally friendly materials, optimising design schemes and raising construction standards.

6. Conclusion and Enlightenment

6.1. Research Conclusion

This paper takes the merger and acquisition of China Urban and Rural Green Water Source as an example to explore its merger motivation and performance changes. It is found that the motivation for merger and acquisition mainly includes responding to national policies, leverage synergy effects and promoting diversified development of enterprises. In terms of performance changes, this paper starts with financial performance and environmental performance. In terms of financial performance, after the merger and acquisition, China Urban and Rural's profitability has decreased, its long-term and short-term solvency has weakened, and its operational capacity has decreased. In terms of environmental performance, China Urban and Rural through the successful merger and acquisition of Green Water Source, the introduction of advanced technology of Green Water Source, accelerated the construction of green projects and improved the efficiency of resource utilization.

6.2. Finding and Suggestions

First, strengthen due diligence. Before the merger and acquisition, the company should conduct a comprehensive due diligence of the target company, including but not limited to financial status, market prospects, technical strength, legal compliance, etc.. At the same time, understand the target company's core competitiveness, market position and potential risks to ensure the feasibility and long-term value of the merger.

Second, establish a risk monitoring and response mechanism. The core of this mechanism is to establish a comprehensive and multi-level risk monitoring system that can detect and deeply analyse the hidden market, financial, legal and operational risks at all stages of the merger and integration in real time. By implementing regular risk assessment and reporting processes, companies can accurately identify risk trends, warn of potential threats in a timely manner, and then take targeted action to respond effectively, ensuring that merger and integration activities proceed smoothly in a stable environment to achieve the set strategic goals.

Finally, focus on resource integration and optimisation. Enterprises should comprehensively examine the internal and external resources of both parties, including human resources, financial management, technical strength, market layout and other core areas. On this basis, according to the overall strategic planning and market demand of the enterprise, the rational allocation and efficient optimisation of resources are implemented to promote the high-quality development of the enterprise.

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