ISSN 2616-5902 Vol. 6, Issue 9: 228-233, DOI: 10.25236/AJBM.2024.060931

Research on the Financial Synergy Effect of Mergers and Acquisitions of Heavy Industry Enterprises in Liaoning Province—Take Dalian Heavy Industry's Acquisition of Jiangsu Lingang Company as an Example

Yuhan Ji*

Faculty of Accountancy, Liaoning University of International Business and Economics, Dalian, Liaoning, China
1020447941@qq.com
**Corresponding author*

Abstract: *This paper aims to provide a comprehensive analysis of the financial synergies inherent in the process of mergers and acquisitions of heavy industry enterprises in Liaoning Province. In addition, it seeks to evaluate the impact of Dalian Heavy Industry's acquisition of Jiangsu Lingang Company on the long-term development and profitability of enterprises prior to and following the merger and acquisition. Due to the deepening of the market economy and the acceleration of industrial structure adjustment, Liaoning Province, which constitutes an important part of the old industrial base in Northeast China, has become increasingly involved in the mergers and acquisitions and restructuring activities of its heavy industrial enterprises. It aims at optimizing the allocation of enterprise resources, assisting enterprises in expanding the market and contributing to the revitalization of Northeast China. This paper will present a theoretical analysis, a current situation analysis, a case study and improvement suggestions. It will also analysis the operating results of Dalian Heavy Industry before and after the merger, and study whether financial synergies have been achieved before and after the merger.*

Keywords: *Dalian Heavy Industry, M&A, financial synergies*

1. Introduction

Mergers and acquisitions represent a significant means of enterprise expansion and strategic adjustment, facilitating industrial upgrading and optimizing resource allocation. Liaoning heavy industry has a solid industrial base and resource endowment, so there is considerable room for expansion through mergers and acquisitions. This paper focuses on the financial synergy effect and discusses its application and practice in the mergers and acquisitions of heavy industry enterprises in Liaoning Province. As an established industrial center in the northeast of China, Liaoning Province is endowed with a wealth of mineral resources and a comprehensive industrial infrastructure. However, it has historically grappled with structural imbalances, including a narrow industrial base, excess capacity, and a lack of innovation. In order to achieve transformation, upgrading and sustainable development, the Liaoning Provincial Government is actively promoting mergers and acquisitions of heavy industry enterprises with the objective of optimizing resource allocation and enhancing industrial competitiveness [1].

2. Theoretical Basis

2.1. The Concept and Type of M&A and Reorganization

Mergers and acquisitions (M&A) and corporate reorganization represented a process through which assets and businesses were recombined through a series of transactions, including mergers, acquisitions, divisions, and other forms of reorganization. The objective of this process was to achieve an optimal allocation of resources and enhance competitiveness. M&A can be classified in a number of ways,

ISSN 2616-5902 Vol. 6, Issue 9: 228-233, DOI: 10.25236/AJBM.2024.060931

including as horizontal mergers and acquisitions, vertical mergers and acquisitions, and hybrid mergers and acquisitions [2].

2.2. Definition of Financial Synergies

Financial synergy can be defined as the improvement of financial performance that occurred due to the integration and reallocation of various resources following mergers and acquisitions. The main performance outcomes included the integration of resources, which enabled the acquired enterprise to have the cash flow to invest and invest funds in projects with higher returns. This formed a virtuous circle, thereby enhancing the enterprise's internal cash flow. Additionally, the enhanced financing capacity facilitated the acquisition of external financing, which can be used to further expand the enterprise's scale and improved its credit rating. Following a merger, the enterprise will experience an expansion in scale and an improvement in credit rating. This will facilitate the acquisition of low-cost financing and the reduction of financial risks. Furthermore, the avoidance of unreasonable tax liabilities may be achieved through the offsetting of profits and losses, in addition to the pre-tax deductions for M&A expenses [3].

3. Case Studies

3.1. Introduction of the Merger and Acquisition Enterprise

Dalian Heavy Industry Co., Ltd. is headquartered in Dalian City, Liaoning Province. It was established in 1993 and listed on the Shenzhen Stock Exchange in 2008 (stock code: 002204). It is one of the 520 key enterprises in the country. Its primary business activities are metallurgy, new energy, marine equipment and parts development, research and sales. It possesses a significant number of specialized technologies and is the leading enterprise in the domestic heavy equipment industry. The acquired company is Sinovel Wind Power Technology (Jiangsu) Lingang Co., Ltd., which was established in 2010. The company's primary business activities include the sales, leasing and maintenance of electrical machinery and equipment, among other things, in order to meet the needs of land and equipment and facilities for high-end manufacturing bases and accelerate the construction of the company's southern manufacturing service base. Dalian Heavy Industry has decided to acquire its controlling shareholder, Dalian Heavy Industry · Lifting Group Co., Ltd. (Heavy Industry Lifting Group) is a wholly owned subsidiary of Sinovel Wind Power Technology (Jiangsu) Lingang Co., Ltd. (Jiangsu Lingang Company). The M&A was concluded in 2021 (as shown in Figure 1).

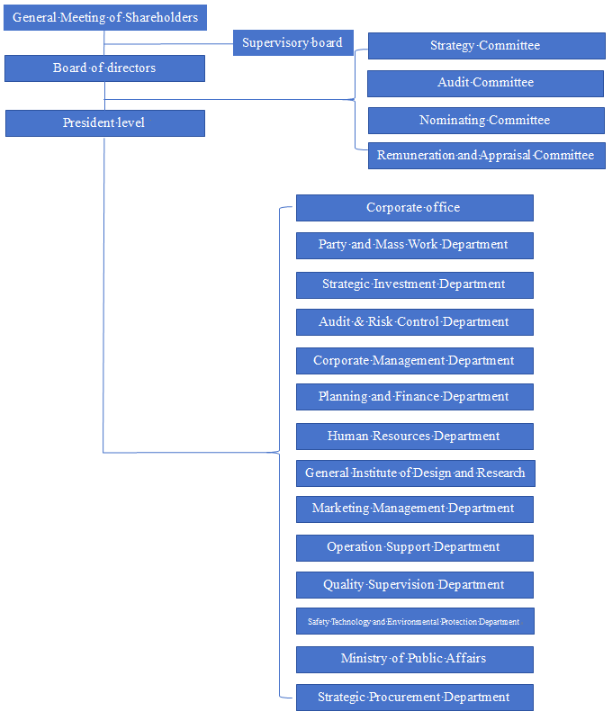

Figure 1: Organizational chart of Dalian Heavy Industry

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3.2. An Overview of the M&A Process

In order to further optimize the industrial layout, Dalian Huarui Heavy Industry Group Co., Ltd. (hereinafter referred to as "Dalian Heavy Industry") decided to incorporate the wind power equipment industry into its business scope through mergers and acquisitions. Sinovel Wind Power Technology (Jiangsu) Lingang Co., Ltd. (hereinafter referred to as "Jiangsu Lingang Company"), a company with considerable expertise in the field of wind power equipment, has become an attractive target for mergers and acquisitions due to the high degree of alignment between its business and the strategic planning of Dalian Heavy Industry [4].

A notice of the meeting was issued by Dalian Heavy Industry Co., Ltd. on 6 August 2021. This was delivered in writing and by email. The 16th meeting of the fifth board of directors was held on 11 August. On 11 August 2021, Dalian Heavy Industry Co., Ltd. and Heavy Industry Lifting Group entered into an equity transfer agreement. In accordance with the terms of the agreement, Dalian Heavy Industry will proceed to acquire 100% of the equity of Jiangsu Lingang Company, a wholly owned subsidiary of Heavy Industry Lifting Group, utilizing its own financial resources. The meeting proceeded to deliberate and subsequently passed the "Proposal on the Acquisition of 100% Equity of the wholly owned Subsidiary of the Controlling Shareholder and Related Party Transactions". The transaction amount is 307.2861 million yuan, which will be paid by Dalian Heavy Industry with its own funds. Upon completion of the transaction, Jiangsu Lingang Company will become a wholly owned subsidiary of Dalian Heavy Industry, thereby further enhancing and expanding the wind power equipment business segment of Dalian Heavy Industry. The optimization of industrial layout is a key objective. The acquisition of Jiangsu Lingang Company has enabled Dalian Heavy Industry to further optimize its industrial layout, thereby enhancing its competitiveness and market position in the field of wind power equipment [5-6].

Upon completion of the merger, Dalian Heavy Industry will leverage the technology, resources, and market channels of Jiangsu Lingang Company to achieve resource integration and synergy. It is anticipated that the acquisition will have a beneficial impact on the performance growth of Dalian Heavy Industries, thereby enhancing its overall profitability and market competitiveness [7].

4. Analysis of Financial Synergies

4.1. Profitability Analysis

Table 1: Profitability analysis indicators

Project	In 2019	In 2020	In 2021	In 2022	In 2023
Net profit margin on sales	0.50%	0.46%	1.08%	2.75%	3.03%
Net profit margin on total assets	0.25%	0.33%	0.60%	1.64%	1.82%
Gross margin on sales	23.84%	23.73%	21.51%	20.09%	20.65%

Source: Company annual report

Table 1 illustrates that the sales net profit margin of Dalian Heavy Industry exhibited a growth trend from 2019 to 2023. The merger and acquisition in 2021 resulted in a sales net profit margin growth rate of 154.63%, reaching the highest level observed in the two years preceding and succeeding the merger. This suggests that the company's operational conditions were beneficial following the completion of the merger, with both the net profit and operating income demonstrating an upward trajectory. Notably, the net profit exhibited a more pronounced increase. The net profit margin of total assets has exhibited a year-on-year increase, with a projected growth rate of 173.33% in 2022 following the conclusion of the merger and acquisition. This represents the highest growth rate observed over the past five years. Conversely, the sales gross profit margin indicator has demonstrated a downward trajectory from 2019 to 2023, although it has remained relatively stable.

As evidenced in the company's annual report, there has been a year-on-year increase in both operating income and net profit margin, particularly following the completion of the merger and acquisition. This upward trajectory is more pronounced, suggesting that the merger and acquisition of Jiangsu Lingang Company has had a beneficial impact on the enterprise. In particular, with the country's focus on new energy, environmental protection and other areas, as well as the recovery of the global economy, the industry in which Dalian Heavy Industry operates has witnessed the advent of new development opportunities. The market demand for environmentally friendly intelligent coke oven machinery products, calcium carbide furnace products and new energy equipment products continued

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to grow, thereby driving a steady increase in the company's operating income.

Nevertheless, an examination of the sales gross margin and the company's annual report reveals that, concurrently with the growth of sales revenue, the cost of sales is also increasing year by year, and the proportion of sales revenue is increasing year by year. For instance, the price of key components such as chips has risen sharply, which may result in a constrained supply of electrical components and an increase in procurement costs, which will affect the gross profit margin of sales. In particular, following the merger and acquisition, the scale of the enterprise has increased, and it is therefore necessary to devote greater attention to the management of cost control [8-9].

4.2. Operational Capability Analysis

Table 2: Operational capacity analysis indicators

Project	In 2019	In 2020	In 2021	In 2022	In 2023
Total Asset Turnover	0.45	0.48	0.49	0.50	0.52
Accounts receivable turnover ratio	1.064	1.256	1.500	1.629	1.728
Inventory turnover	1.542	1.610	1.446	1.308	1.371

Source: Company annual report

Table 2 indicates that the total asset turnover rate and the accounts receivable turnover rate will increase on an annual basis from 2019 to 2023. However, the total asset turnover rate remains relatively low, suggesting that the utilization efficiency of assets is low. Nevertheless, when compared with the metallurgy, mining and chemical equipment industry, the total asset turnover rate is deemed to be satisfactory, exhibiting a slight increase above the industry level. The accounts receivable turnover rate for Dalian Heavy Industry has increased on an annual basis from 2019 to 2023, indicating a notable acceleration in the recovery of accounts receivable and a concomitant reduction in the occupation of funds.

However, the inventory turnover rate initially exhibited a decline, followed by an uptick after the merger and acquisition. This suggests that the inventory was overstocked, that inventory management efficiency was suboptimal, and that inventory sales were not accurately predicted. Nevertheless, in comparison to the pre- and post-merger analysis indicators of operating capacity, the merger and acquisition has facilitated the expansion of sales channels and enhanced the company's productivity.

4.3. Developmental Capacity Analysis

Table 3: Indicators for the analysis of developmental capacity

Project	In 2019	In 2020	In 2021	In 2022	In 2023
Growth rate of operating income	9.72%	13.28%	11.52%	13.71%	15.89%
Net profit growth rate	222.41%	-2.99%	139.69%	149.74%	26.00%
Total asset growth rate	8.25%	0.98%	14.49%	9.78%	12.03%

Source: Company annual report

Table 3 reveals that the operating income has exhibited a year-on-year increase. However, the growth rate experienced a notable surge from 2019 to 2020. In 2021, the growth of operating income decelerated, and a gradual ascendance commenced in 2022, continuing until 2023. This period coincides with the conclusion of mergers and acquisitions. In comparison to the industry average, these companies are situated at the upper end of the industry and demonstrate superior performance.

The growth rate of total assets decreased in 2020 and rose sharply in 2021 due to the company's involvement in mergers and acquisitions. The mergers and acquisitions of enterprises resulted in an increase in total assets, leading to a significant rise in the growth rate of total assets. However, this declined again in 2022 due to the company's simultaneous implementation of asset restructuring alongside mergers and acquisitions. On 15 November 2022, Dalian Heavy Industry further classified and packaged 422 of its 426 pieces of equipment (the remaining equipment was retained by the company) into 49 targets. The company was subsequently listed and transferred again on the Dalian Equity Exchange. It is anticipated that the disposal of this equipment will result in a notable increase in net profit for the company, although this is likely to be accompanied by a reduction in the growth rate of total assets [10].

The acquisition of Jiangsu Lingang Company's equity and the subsequent listing and transfer of idle

ISSN 2616-5902 Vol. 6, Issue 9: 228-233, DOI: 10.25236/AJBM.2024.060931

and scrapped equipment have not only reinforced the company's own position but have also enhanced the efficiency of its asset operations, thus establishing a robust foundation for its long-term development. Furthermore, these mergers and acquisitions, in addition to the restructuring activities, demonstrate the flexibility and strategic vision of Dalian Heavy Industry in the context of the market environment.

4.4. Solvency Analysis

Table 4: Solvency analysis indicators

Project	In 2019	In 2020	In 2021	In 2022	In 2023
Liquidity ratio	1.375	1.342	1.262	1.275	1.191
Debt-to-asset ratio	60.62%	60.41%	67.21%	69.24%	71.26%

Source: Company annual report

As illustrated in Table 4, the analysis of solvency indicators reveals a declining trajectory in the current ratio from 2019 to 2021, followed by a modest uptick in 2022 and a subsequent decline in 2023. The asset-liability ratio of enterprises is increasing on an annual basis, with the proportion of liabilities rising above the industry average.

The asset-liability ratio is increasing year on year, while the current ratio is declining year on year. This may be explained by the fact that Dalian Heavy Industry's revenue has continued to grow in recent years, with this revenue growth often accompanied by an increase in project investment. This includes new energy equipment, EPC projects and so on, which require a large amount of financial support. This may lead to an increase in liabilities. In order to expand its market share and competitiveness, Dalian Heavy Industry has pursued a strategy of market expansion and mergers and acquisitions. These initiatives have required a substantial amount of financial support, which has in turn led to an increase in the company's debt level. Furthermore, the subsidiaries of Dalian Heavy Industry, such as Dalian Heavy Industry Mechanical and Electrical Equipment Co., Ltd., exhibit a considerable asset-liability ratio. To illustrate, the debt-to-asset ratio of the entire group of companies reached 97.29%, a figure that remained elevated despite a reduction following the capital increase. The debt status of these subsidiaries has a direct impact on the asset-liability ratio of Dalian Heavy Industry as a whole.

The increase in the asset-liability ratio of Dalian Heavy Industry can be attributed to a mass of factors, including business expansion and capital demand, the impact of high debt of subsidiaries, financing structure and cost, operational management and market environment. In order to reduce the debt-to-asset ratio and enhance financial stability, Dalian Heavy Industry must implement a series of measures to optimize its capital structure, enhance the management of its subsidiaries, improve operational efficiency and proactively respond to changes in the market environment.

5. Conclusions

The mergers and acquisitions (M&A) of Jiangsu Lingang Company has a positive impact on the enterprise in general, which enhances the profitability and management ability of the enterprise. However, at the same time, the company's solvency performance is poor. Nevertheless, the mergers and acquisitions of heavy industry enterprises in Liaoning Province represent a significant avenue for achieving transformation, upgrading and sustainable development. It is not only Dalian Heavy Industry that must fully utilize financial synergies; numerous other enterprises must also do so in order to achieve the optimal allocation of resources, cost reduction, market expansion and other goals, and thus enhance their overall competitiveness.

Nevertheless, the process of mergers and acquisitions is not without its challenges and inherent risks. For instance, the integration of mergers and acquisitions is often challenging. The dissimilarities in culture, management, technology, and other domains between disparate enterprises can give rise to conflicts during the integration process. The potential for significant financial loss is a significant risk factor. The influx of capital associated with M&A can potentially lead to a constrained or even disrupted capital chain. The current legislative framework is imperfect. The legislative and regulatory framework governing mergers and acquisitions is imperfect, exposing enterprises to legal risks. Consequently, it is imperative for enterprises to enhance pre-M&A due diligence and risk assessment, to prioritize post-M&A integration management, to diversify financing channels and to mitigate financial risks, and to refine the legal and regulatory system to guarantee the fruitful implementation of M&A and restructuring and to maximize financial synergies.

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