

Research on the Influencing Factors of M&A

——Taking Gree's Acquisition of Yinlong as an Example

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Abstract: The current market competition is becoming increasingly fierce, and enterprises are seeking diversified development paths to better develop. With the continuous expansion of the company's scale, mergers and acquisitions are inevitable. However, the decision to acquire a company carries significant risks and will have a significant impact on the company's development. This article uses data such as stock prices, net profits, and leverage of listed companies to analyze acquisition risks using the VAR model. At the same time, the F-score model is used to compare and analyze the impact of company mergers and acquisitions before and after the acquisition, providing reasonable suggestions and methodological guidance for enterprise acquisitions.

Keywords: mergers and acquisitions, risk, VAR model, F-score model

1. Introduction

Mergers and Acquisitions (M&A) refers to the acquisition of property rights from other legal entities through certain economic methods based on equality, voluntariness, equal price, and remuneration. It is the main form of capital operation and management for enterprises. Enterprises choose mergers and acquisitions mainly to obtain more profits. In this process, it is mainly approved through a series of legal procedures such as the board of directors and shareholders' meeting before completion. The completion of mergers and acquisitions usually brings certain economic scale effects and market-leading effects, achieving optimal allocation of resources and low-cost diversified development.

The reasons why a company acquires another company often need to be examined in terms of its financial situation, the prospects for future earnings of the acquired company, the cross-cutting nature of its business scope, and especially the impact of managerial preferences on diversification strategies and corporate value [1]. The success or failure of the acquired company can be reflected in the subsequent governance decisions of investors and the current state of affairs, especially in terms of share price and shareholders' equity [2].

Of course, there are also certain risks in the process of mergers and acquisitions. This article takes the failure of Gree's acquisition of Yinlong as an example to guide enterprise mergers and acquisitions.

Gree is a leading home appliance company that specializes in air conditioning manufacturing and enjoys a good reputation. Yinlong is engaged in the operation of the new energy industry and holds a leading position in the new energy vehicle and energy storage system industries. On August 18,

2016, Gree acquired Yinlong through targeted issuance but ultimately failed. On August 31, 2021, 30.47% of Yinlong's equity was successfully auctioned through judicial auction, with a transaction price of 1.828 billion yuan. In addition, Gree Chairman Dong Mingzhu entrusted the voting rights of his 17.46% stake in Yinlong to Gree Electric Appliances, making Yinlong the controlling subsidiary of Gree Electric Appliances.

Firstly, we analyze the investment motivations of Gree Company. Second, we conducted a risk assessment before the acquisition of Gree Company. Third, we use financial indicators and models to analyze the factors that affect the company's merger and acquisition decisions and their pros and cons. Finally, we propose rationalization suggestions, which have reference value for subsequent business decisions of enterprises.

2. Investment Motivations

2.1. Profit Motivation

2.1.1. Motivation for Revenue

The fundamental purpose of investor investment is to pursue profit maximization. Dong Mingzhu values the future profitability of Yinlong. This article will conduct a detailed analysis of the financial statements of the enterprise in subsequent paragraphs.

2.1.2. Motivation for Market Acquisition

Motivation for Market acquisition refers to the motivation to capture market share. Through Figure 1, it can be seen that the sales and sales volume of new energy vehicles generally show an upward trend, and the industry has the advantages of policy support, technological advances, market demand, industrial layout environmental benefits, and so on. Therefore, the development prospects of this industry are broad. As an emerging industry with good prospects, grabbing market share is undoubtedly the motivation for investors to invest. Gree used to specialize only in home appliances, especially in the air conditioning industry, but considering the huge advantages brought by diversification, which can extend the maturity period of the enterprise, Dong Mingzhu discovered a business opportunity to acquire Yinlong.

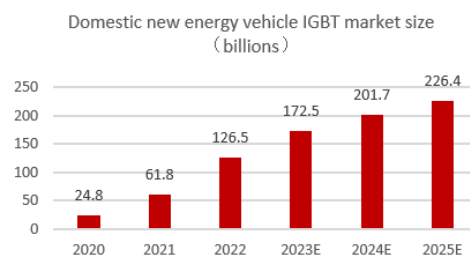


Figure 1: Domestic new energy vehicle IGBT market size (The data Source: Tibco Consulting, Donghai Securities Research Institute)

2.2. Nonprofit Motivation

2.2.1. Motivation for Controlling Core Technology

Gree's acquisition of Yinlong focuses on the core technology mastered by Yinlong - lithium titanate materials, which will complement the products currently developed by Gree. This technology has overcome the five globally recognized challenges of "safety", "consistency", "fast charging and

discharging", "lifespan", and "industrialization" in the industry. Its battery products have 6 minutes of fast charging and discharging, wide temperature resistance (-50 °C~+60 °C), a 30-year cycle service life, and high safety without fire or explosion [3].

2.2.2. Motivation for Social Responsibility

The motivation for social responsibility refers to the motivation to obtain social benefits. The country vigorously advocates mass innovation and entrepreneurship. Innovation is the soul of a nation's progress and the inexhaustible driving force for a country's prosperity and development. Therefore, many relevant support policies have been introduced. As a representative enterprise of innovative spirit, Gree actively responds to the national call and assumes corresponding social responsibility for the needs of environmental protection and the requirements of national energy security policies. As Zhang Ying mentioned, "The acquisition of Yinlong and its entry into new energy is just one step in Gree's path to building enterprise innovation. Behind this is the determination of Chinese entrepreneurs to show the world "Made in China " [4].

3. Risk Analysis

To analyze risks, we use the VAR model. The VAR model refers to the value at risk, which refers to the maximum loss that a financial instrument or combination of financial instruments will face in the face of future asset price fluctuations at a certain confidence level and holding period. It is used to measure future risk models. The following formula is used for VAR:

$$R \sim N(0, \sigma) \quad (1)$$

$$VAR = \omega_0[\mu - (\mu - \alpha\sigma)] = \omega_0\alpha\sigma \quad (2)$$

$$Probability(\Delta V < -VaR) = 1 - C\% \quad (3)$$

The VAR model follows a normal distribution, where R represents earnings per share, σ Represents stock price volatility, C% represents confidence, ΔV represents the change in consolidated value.

The results obtained from the analysis of the VAR model (see Table 1) indicate that the maximum loss of earnings per share under the 99 percent confidence interval is 1.28 and 1.29, which are values that indicate a higher risk of future losses, it would not be wise to acquire at this time

Table 1: The results of analyzing risks with the VAR model

Date	earnings per share	stock price volatility	VAR(N0=30 days C%=99%)
June 30, 2020	1.92	1.5%	0.36
June 30, 2021	1.94	1.5%	0.37

4. Performance Analysis

4.1. Financial Analysis

4.1.1. Theory Basis of the F-score Model

The F-score model is a scoring model used to measure the performance of a company, proposed by Piotroski, and developed to identify the companies that have achieved the most significant improvement in their overall financial condition and the lowest level of financial performance in the previous fiscal year. It considers the company's operating status from multiple financial indicators, mainly including profitability, financial leverage (liquidity), and operational efficiency, with a total of 9 financial signals for evaluation. At the same time, the scoring form (see Table 2) is used to simplify the presentation of the results. Finally, the cumulative value of the scores is used to judge the performance of a company. The higher the score, the better the company's operating status. By analyzing the potential risks of the company through the incomplete sub-items, we can provide reasonable suggestions for investors, and help decision-makers formulate corresponding management policies.

Table 2: F-score metrics and implications

Measurement	Indicators and interpretation	"good" judgments
Profitability	ROA	>0
	Δ ROA	>0
	CFO	>0
	ACCRUAL	>0
Leverage, liquidity, and funding	Δ LEVER	<0
	Δ LIQUID	>0
	new equity issuance	0
Effectivity	Δ MARGIN	>0
	Δ TURN	>0

4.1.2. Results

Table 3: Gree Related Financial Indicators using F-score

Indicators	2022 year	2021 year	2020 year
ROA	7.265	7.703	7.889
Δ ROA	-0.438	-0.186	-1.357
CFO	2866843.59	189436.33	1923863.73
CFO-Net income	416181.21	-41200.91	293647.08
Δ LEVER	5.074	5.828	-2.263
Δ LIQUID	0.033	-0.202	0.09
new equity issuance	0	0	0
Δ MARGIN	1.76	-1.86	1.44
Δ TURN	-0.067	0.029	-0.144
score	6	4	6

The following analysis is based on the data obtained from Table 3. ROA is the return on assets, Δ is the change of the data compared with the previous year, CFO is the cash flow from the operation,

ACCRUAL is debt-to-equity ratio, LIQUID is the current ratio, MARGIN is the Gross profit margin, TURN is the asset turnover.

Return on assets (ROA) is an important indicator used to measure the efficiency of fund use. From 2020 to 2022, the absolute value of ROA declined, but its change value showed a fluctuating trend. In 2020, the economy was mainly affected by COVID-19, and the economy was in a downward state, but it slowed down in 2021, which has a certain relationship with the successful acquisition of Yinlong, making full use of the company's idle funds and improving the efficiency of fund use; In 2022, ROA decreased again, while the net profit margin of affiliated enterprises showed an upward trend, indicating that the company's idle funds were not well utilized, and the principle of capital turnover rate is similar. However, considering a special period, due to the impact of the epidemic and the sluggish economic situation in the industry, leaving a certain amount of idle funds is also beneficial for dealing with unavoidable risks.

From the perspective of the net cash flow generated from operating activities and the trend of the difference between net income and net cash flow, after Gree acquired Yinlong in 2021, the net cash flow from operating activities was positive and the net profit was negative, indicating that the company was insufficient in paying fixed expenses. Although the company can meet the normal funding needs for operating activities, it should improve product profitability, indicating that the economic benefits brought by Yinlong are not high, It did not have a positive impact on the company. In 2022, both indicators showed an increase, indicating that Gree's management has made real-time adjustments to Yinlong and its profitability is continuously improving.

From the perspective of liabilities, the leverage change rate of Gree Company shows an upward trend, indicating an increase in the company's liabilities, which brings huge risks to the company. At the end of 2022, Zhuhai Yinlong suffered a loss of 1.9 billion yuan, with a cumulative loss of nearly 3 billion yuan over three years. The debt-to-equity ratio was as high as 99%, and the net assets on Zhuhai Yinlong's books were only 237 million yuan. Correspondingly, Gree Electric's investment loss of 1.838 billion yuan was 1.755 billion yuan. It can be seen that the acquisition of Yinlong did not have a good impact on Gree.

Finally, for the evaluation of its performance using the F-score model, it scored 6 in 2020 and 2022, which was in the mid-F-score stage but fell into the low F-score stage in 2021, indicating that at this time, the firm experienced profitability, report disappointing earnings, and underground stock. Overall, although managers predict that the acquisition of the company will generate good economic benefits, the positive impact of Gree's decision to acquire Yinlong on the company is rare.

4.2. Non-financial Analysis

For Gree's acquisition of Yinlong, Gree is developing towards a diversified trend, especially in the new energy industry, which has potential development value; In terms of customer satisfaction, Gree ranks first in customer satisfaction and various indicators in the air conditioning industry, and has been ranked first in customer satisfaction for 10 consecutive years (see Figure 2), customers have a strong degree of satisfaction and trust in the Gree brand. Therefore, non-financial indicators indicate that Gree's customers have good reviews and still have a good brand influence before and after the acquisition.



Figure 2: Customer experience satisfaction score in the air conditioning industry (The data Source: Customer Satisfaction Evaluation Center of China Institute of Standardization)

5. Suggestions

When it decides on a company acquisition, many risks need to be faced. Decision makers should conduct investment evaluations from the perspective of the company's long-term development while also estimating the current acquisition risks and other shareholder equity. Just like Gree's decision to acquire Yinlong, the starting point of this decision is good, and the enterprise also assumes corresponding social responsibility. However, due to the high assessment risk, the acquisition of Yinlong has put the company in a difficult position.

5.1. Multi-angle Assessing

Through the case of Gree's acquisition of Yinlong, it can be seen that enterprises need to choose suitable investment targets to carry out investment projects. Especially in terms of industry selection, different market environments have different ways of horizontal and vertical mergers and acquisitions [5]. Enterprises should consider the economic situation at that time and use the Porter Five Forces model to make a reasonable assessment of the risk prediction of investment projects.

5.2. Strategic Integration and Timely Adjusting

After the successful merger and acquisition, the parent company should accelerate the integration of the company's main business and the acquiring company's business, and develop correct management strategies. Yang et al. once mentioned that if the acquired enterprise and the target enterprise cannot match well in development strategy, it will lead to the acquisition of its competitiveness, instead reducing the enterprise's competitiveness and dispersing its strength, which is not worth the loss[6].

6. Conclusion

This article conducts an in-depth analysis of company merger and acquisition activities, mainly using the VAR model to conduct risk assessment for Gree, and the F-score model to analyze the impact of enterprise mergers and acquisitions, providing effective risk avoidance guidance and strategic adjustment and integration suggestions for future enterprise mergers and acquisitions.

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