

The Impact of Corporate Managers' Overconfidence on Corporate Mergers and Acquisitions: A Case Study of Gree's Acquisition of Zhuhai Yinlong

Yuxin Fu^{1,a,*}

¹School of Business, East China University of Science and Technology, Shanghai, 200237, China

a. XIN374XIN@126.com

**corresponding author*

Abstract: There is an important research topic in behavioral finance: overconfidence. This paper studies the relationship between overconfidence and Merger and Acquisition decision-making from the perspective of managers' irrationality. This paper adopts the case study method, selects Dong Mingzhu of Gree Electric Appliances, an enterprise manager with a distinctive personality, and takes Gree's merger and acquisition of Zhuhai Yinlong as an example to explore and analyze how overconfidence affects the enterprise's merger and acquisition behavior and to further explore the reasons behind its merger and acquisition results. From the perspective of overestimating the value of M&A targets and adopting aggressive debt financing strategies, this paper analyzes how overconfident managers make irrational decisions in the M&A process. Finally, through the phenomenon that the actual situation of Zhuhai Yinlong did not reach Dong's valuation and the unfair financing scheme in the acquisition plan, it is concluded that the overconfident managers overestimated the value of the M&A target.

Keywords: CEO, Overconfidence, M&A Decisions, Business Risk

1. Introduction

Larwood and Whittaker, in their 1997 study, identified overconfidence as the tendency of people to believe more in the information they have and to show a "better than average" effect[1]. Domestic scholars are relatively late in the start of related research. Xu Hao in his 2015 study concluded that the causes of managerial overconfidence are control illusion, knowledge illusion and self-attribution[2].

Academic research on how managerial overconfidence affects corporate decision-making has been refined and expanded into different fields, mainly including corporate merger and acquisition decision-making, corporate green innovation, corporate social responsibility, and so on[3-4]. Teng Zhengna's research on corporate green innovation selects A-share listed companies in China's Shanghai and Shenzhen cities from 2009 to 2020 as the research object, and verifies the promotion effect of CEO overconfidence on corporate green innovation through various methods such as environmental protection input effect and media attention. The results of the study provide reference suggestions for enterprises to choose suitable managers for green innovation, and enrich the research on the influencing factors of green innovation[3]. Wang Huan and Zhuang Qian's study of corporate social responsibility (CSR) shows that although CSR helps to enhance market reputation, it

sometimes reflects managers' overconfidence. The results show that the impact of managerial overconfidence on CSR is positively "U-shaped", especially in state-owned enterprises and high social trust areas, while inefficient investment plays a negative moderating role[4].

These studies have made people realize that managers' overconfidence will overestimate their own ability, the operating expectations of the M&A firms; and underestimate the negative impacts such as the debt-service risk of the M&A firms, which will result in the M&A premium.

Mergers and acquisitions (M&A) is the process by which a company integrates its business by purchasing the equity or assets of another company. There are various ways to go about this process, including mergers, acquisitions and equity swaps. With the arrival of the Internet era, the continuous development of the economy and society, enterprises are facing a series of problems of the times, such as transformation. In such a complex background, the home appliance industry is in urgent need of change, and the competition is extremely fierce. Gree under the strong leadership of Dong Mingzhu plans to enter the new energy automobile industry, and the merger and acquisition of Zhuhai Yinlong is a key step in this plan. Taking Gree's acquisition of Zhuhai Yinlong as a case study, this paper applies the overconfidence theory in behavioral finance, combines previous scholars' research on this issue, and analyzes the impact of managers' overconfidence on corporate M&A decisions in a broader context.

This study has two main significance: firstly, most of the studies by domestic and foreign scholars on M&A activities are based on the rational man assumption, but considering the reality that managers have overconfidence. Starting from the concept of irrational economic man, this article explores the negative impact of corporate managers' overconfidence on corporate M&A, which provides a new perspective for in-depth research on the causes of M&A risk. Secondly, the article examines the mechanism by which corporate managers' overconfidence may lead to M&A risks. The article focuses on analyzing the relationship between managers' overconfidence and M&A decision-making, which provides new ideas for analyzing the risks of M&A parties.

2. Theoretical Background

2.1. Conceptualization of Overconfidence among Corporate Managers

Psychological research on probability judgment and calibration in the 1960s gave rise to the concept of overconfidence, and psychologists conducted extensive research on overconfidence in the 1970s and provided four representative definitions. The first definition is that overconfidence is an overestimation of one's own ability and external luck, such as overestimation of one's forecasting ability and control, overestimation of external favorable factors such as opportunities, etc.; the second definition is the psychological state in which people believe that their actual grasp of the information they possess is more accurate than the actual situation of the information itself ; and the third definition of overconfidence is that they underestimate the risk of a project by setting a too narrow confidence interval for predicting the project's return ; the fourth type of overconfidence is defined as people overestimating their own abilities and underestimating the abilities of others [5]. Overconfident people tend to overestimate their own abilities and their control over events and exaggerate their judgment of the outcome of events.

In behavioral finance, an overconfident manager overestimates returns, underestimates risks because of excessive reliance on personal talent or information, and is overly optimistic about the future prospects of the firm. It is in this irrational state of mind that the financial decisions made by managers will show some deviation.

2.2. Definition of the Concept of Mergers and Acquisitions

Enterprise mergers and acquisitions are the combined name of mergers and acquisitions. A merger refers to the merging of two or more independent companies into one company, usually by a dominant company to absorb one or more companies; an acquisition refers to an enterprise with cash, assuming the liabilities or stock, etc., to buy some or all of the assets or equity of other enterprises and obtain control of other enterprises behavior. According to the different ways of transacting, acquisition can be divided into two categories: equity acquisition and asset acquisition. The case of Gree Group's acquisition of Zhuhai Yinlong Company is an equity acquisition case.

2.3. How the Two are Related

This section examines how managerial overconfidence affects firm performance by influencing these M&A behaviors from three perspectives of M&A target selection, value assessment, and financing methods, respectively.

2.3.1. From the Perspective of M&A Target Selection

According to the theory of behavioral finance, managers' psychological factors and behavioral preferences will affect corporate decision-making, and overconfidence, as a common psychological bias among managers, will have an impact on corporate M&A decision-making. First of all, in the choice of M&A target, according to the theory of overconfidence, managers will have knowledge illusion, which makes people think that their rich knowledge and experience can improve their prediction ability, thus generating cognitive overconfidence in the process of investing in the financial market, overestimating their own ability to obtain information and dig for information, and believing that their grasp of the future earnings of the merged enterprise is more accurate than others [6]. This may lead to cognitive overconfidence in the process of investing in the financial market.

2.3.2. From a Value Assessment Perspective

Managerial overconfidence also has a significant impact on the valuation of the acquired company. On the one hand, overconfident managers usually overestimate the future performance of the target company and have too high expectations of the company's operation; on the other hand, out of overconfidence, the company's managers believe that they have excellent management ability and can control all uncertainties in the process of the merger and acquisition of both parties, thus overestimating the synergistic effect of the merger and acquisition of both parties.

2.3.3. From the Perspective of Financing Modalities

Overconfident managers will still follow the preferential financing theory in financing M&A. According to the preferential financing theory, firms will prioritize the lowest-cost internal financing, followed by debt financing, and lastly, they will choose to complete the financing through the issuance of shares [7]. Since overconfident managers overestimate the post-merger earnings and believe that they can recover the principal in a shorter time, i.e., the project has a shorter payback period and can achieve profitability quickly, and due to the underestimation of the risk of debt repayment, they adopt a more aggressive debt financing strategy with a higher ratio of debt. Therefore, managers' overconfidence negatively affects M&A performance through aggressive debt financing strategies [8].

3. Case Description

3.1. Profiles of the Acquiring Parties

Zhuhai Yinlong New Energy Co., Ltd. is one of the large-scale modernized high-tech enterprises in China's new energy industry, with the new energy industry as the core of its operation. Since investing in the implementation of industrialization in 2009, Yinlong New Energy Co., Ltd. has been committed to building a new energy closed loop industrial chain with lithium battery materials as the core. Since 2015, it has continuously introduced strategic investors, and after completing two rounds of equity financing, Zhuhai Yinlong, with its advanced technology and the financial support of strategic investors, has occupied a place in the new energy vehicle as well as the energy storage system industry. Zhuhai Gree Electric Appliances Co., Ltd., founded in 1991, is an international home appliance enterprise integrating R&D, production, sales and service, mainly engaged in household air conditioners, central air conditioners, cell phones, refrigerators and other products. Gree is ranked among the top in the home appliance industry with its globally recognized brand, strong scientific research and innovation capability, "self-built channel" marketing model, continuous innovation of the enterprise product quality system, and other core competitiveness.

Dong Mingzhu entered the Gree as a business manager. For nearly thirty years, she has continuously grown from Gree's grassroots sales staff to the present Gree's chairman and general manager. In October 2019, she was named to the 2019 Forbes list of Outstanding Leaders in Multinational Operations of Chinese Enterprises. In December of the same year, Dong Mingzhu was ranked 44th on the 2019 list of the world's most influential women.

As a well-known strong woman, someone once used the phrase "The road that Sister Dong has traveled, it's hard to grow grass on the road." to comment on Dong's strong-arm tactics. When serving as a sales manager, Dong Mingzhu directly dismissed a large dealer from the Gree distribution network because he came to the Gree factory to ask for special treatment. After being promoted to sales minister, Dong Mingzhu also always followed her own principles, insisting on what she thought was right. She not only insisted on shrinking the marketing team but also gave the money she saved back to the dealers. In 1996, the most difficult year in the air-conditioning industry, Gree's sales grew by 17%, surpassing then-air-conditioning sales giant Chunlan for the first time. At work, Dong Mingzhu believes she has never been wrong. Its strong character, tough work style, and strict requirements for dealers and employees: "If you walk into Gree, you have to work according to my thinking," are often mentioned to this day [9].

3.2. Acquisition Process

3.2.1. First Acquisition

On February 23, 2016, the board of directors of Gree issued a major suspension announcement to the public, disclosing that the company is planning a major asset reorganization transaction and that the temporary suspension of trading is carried out to avoid abnormal fluctuations in the price of the stock. Since then, Gree has begun the mergers and acquisitions that lasted for nearly one year. On August 19, Gree Electric issued the acquisition of matching funds to raise programs, the proposed use of equity acquisitions, and a price of 15.57 yuan (about 0.7 times the share price of Gree Electric at the time) to the top eight shareholders of Gree Electric directed to issue additional shares to raise 9.7 billion yuan.

On October 28, Gree Electric held an interim general meeting to vote on the merger and acquisition program. The acquisition is in the form of a major asset reorganization, which requires the passage of the general meeting of shareholders; however, in the interim general meeting, the small and medium-sized shareholders jointly voted to reject the fund-raising program.

On November 16, 2016, Gree Electric received a written letter from Zhuhai Yinlong informing it that the general meeting of shareholders of Zhuhai Yinlong had failed to pass the newly adjusted acquisition transaction proposal. On the same day, Gree Electric announced the termination of the fundraising acquisition program [10].

3.2.2. Second Acquisition

On December 31, 2016, A-share company Zhongyida disclosed the latest shareholding structure of Yinlong in the Announcement on the Transfer of Equity Interests in Zhuhai Yinlong New Energy Co Ltd Held by Wholly-owned Subsidiary Zhongyida New Energy (Shanghai) Co Ltd, which was published on the Oriental Fortune website. This means that Dong Mingzhu personally invested 1 billion yuan, Wanda Group invested 500 million yuan, and Jingdong Group invested 300 million yuan. Among them, Dong Mingzhu alone invested 1 billion yuan, 82,338,462,000 yuan into paid-in capital, accounting for 7.4627% of Yinlong's registered capital.

Since Yinlong is not a listed company, it is difficult to directly access the company's relevant shareholder information and data such as the annual report. On February 21, 2017, Gree announced the announcement about the company and Yinlong signing the "Cooperation Agreement" and the related transaction announcement, and in the basic situation of the related parties, it disclosed that Dong Mingzhu's shareholding in Yinlong had risen to 10%. This indicates Dong Mingzhu's second capital increase in Yinlong.

As of March 31, 2017, the registration information published by the Zhuhai Bureau of Industry and Commerce showed that Yinlong had a total of 24 shareholders. The second largest shareholder is Dong Mingzhu, with a personal stake of 17.46%. In a month, Dong Mingzhu once again increased her capital in Yinlong, which is enough to show that she wants to cooperate with Yinlong with a strong will [9].

4. The Impact of Corporate Managers' Overconfidence on Acquisition Outcomes

4.1. Overvaluation of Acquired Companies

The psychological factor of overconfidence influences managers' M&A decisions, and Dong Mingzhu is very confident about Zhuhai Yinlong's future earnings, which is one of the reasons that led Dong Mingzhu to overestimate the value of Zhuhai Yinlong's investment. As the head of Gree Electric Appliances, Dong Mingzhu has a wealth of decision-making experience from her experience in the field. Therefore, in the choice of M&A targets, it is very easy to be influenced by the illusion of knowledge, and the market information she grasps makes him very optimistic about the new energy automobile industry, believing that it is in line with the needs of the national development strategy. Dong Mingzhu has repeatedly praised Yinlong on public occasions, believing that the new energy can represent the future development prospects of China's new energy automobile industry, and said that she will continue to maintain cooperation with Yinlong. Dong Mingzhu vigorously promoted the merger and acquisition of Yinlong; she repeatedly said in public that Gree would implement a diversification strategy and make a high-profile announcement of entry into the new energy automobile industry. She was also very optimistic about the industry's market development prospects and that Yinlong is likely to become the second-largest 100 billion-dollar enterprise in Zhuhai [11].

But is Yinlong as perfect as Dong Mingzhu predicted? The answer may not be. First of all, Zhuhai Yinlong is officially positioned as a "global leading new energy enterprise," but strangely, it is not in the 2017 Ministry of Industry and Information Technology (MIIT)'s new energy vehicle recommendation catalog. New energy vehicles are a future industry that is strongly supported by the government, and the companies that appear in the Ministry of Industry and Information Technology's recommended list not only have a good development prospect themselves, but are also the object of

strong government support in the future. From this point of view, Zhuhai Yinlong's industry position needs to be considered. Secondly, the founder of Yinlong Wei Yincang and other people, through frequently connected transactions, misappropriated the company's property. Serious damage to the interests of the company also shows that Dong Mingzhu did not do a good job of due diligence before the injection of capital, so Yinlong exposed a series of problems. According to behavioral finance theory, Dong's overconfidence in the acquisition process led to psychological factors that caused managers to overestimate their information acquisition ability for the M&A target and make irrational decisions on the M&A target to acquire at a premium.

4.2. Adopting a Biased Debt Financing Strategy

Previously, the Gree merger and acquisition of Yinlong transaction program by Dong Mingzhu was rejected in the interim shareholders meeting, and then Dong Mingzhu, in her personal name, joined hands with Wang Jianlin and Liu Qiangdong, a total of five enterprises or individuals, and Yinlong signed a capital increase agreement. According to Gree Electric's capital raising program, Gree Electric intends to issue 834 million shares at \$15.57, priced at \$13 billion to acquire 100% of Zhuhai Yinlong held by 21 counterparties such as Yintong Investment Group, equivalent to a dilution of 13.9% of Gree Electric's current share capital of 6 billion shares. In this employee stock ownership plan, Dong Mingzhu personally wants to contribute 937 million yuan, an additional 60,388,800 shares of Gree Electric, accounting for 39.5% of the employee stock ownership plan [11]. If added to her previous holdings, Dong will increase her stake in Gree by 105 million shares, jumping from the tenth to the fourth largest shareholder. However, the fund-raising program damaged the interests of Gree's small and medium-sized shareholders, whose joint opposition led to the rejection of the merger program.

5. Conclusion

Through the above analysis, whether from the Zhuhai Yinlong itself or the outside world's evaluation, it is difficult to match Dong Mingzhu's super high evaluation. Even though new energy vehicles are an industry strongly supported by the government, Dong Mingzhu is still overconfident in her valuation of the problematic Zhuhai Yinlong as well as in the implementation of a less-than-fair financing plan. According to behavioral finance theory, managers in a state of overconfidence tend to place too much trust in their judgment and place too much importance on the information they have at their disposal, while belittling the objectivity of the information that has been disclosed. The results of the study show that: (1) managers with overconfidence will overestimate the value of the acquired company for two reasons: overestimating the synergies between the two sides of the merger and the future performance of the target company that can be generated by their managerial ability; and (2) managers with overconfidence will adopt an aggressive debt financing strategy for the target company, which will lead to a higher ratio of corporate liabilities, and the chain of funds will become unstable, ultimately leading to a negative impact on the performance of the merger and acquisition of the enterprise. Since this paper is a case study, the analysis and conclusions are based on the relevant circumstances of Gree Electric's merger and acquisition of Zhuhai Yinlong, and the conclusions obtained may be more applicable to companies with similar conditions as Gree Electric and less applicable to other types of companies. In order to enhance the applicability of the findings of this case study to other types of cases, this can be achieved by, firstly, conducting an extensive literature review in the following research phase, including different types of cases in the relevant field.

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