Research on Causes and Risks of High Premium Mergers and Acquisitions  
--Take BY-HEALTH's acquisition of LSG as an example

Yufei Gao  
School of Finance and Taxation, Capital University of Economics and Business, Beijing 100071, China.  
15011111705@163.com

Abstract. In recent years, the rapid development of the capital market has pushed the cross-border mergers and acquisitions of Chinese enterprises to a climax, and witnessed the emergence of a large number of high-premium mergers and acquisitions. However, there are inevitably risks behind it, which has threatened the operation of the enterprise itself and the capital market as well. This paper, with BY-HEALTH's acquisition of LSG as an example, analyzes the causes and risks of high-premium mergers and acquisitions, and puts forward relevant suggestions to prevent the formation of high-premium mergers and acquisitions using the method of case study. The study results show that the formation of high-premium mergers and acquisitions is attributed to the high expectations of the acquirer's synergy effect and the inaccurate assessment. High-premium mergers and acquisitions will expose enterprises to goodwill impairment and financial risks, resulting in serious economic consequences. This paper expands the research results of the causes and risk analysis of high-premium mergers and acquisitions, and provides experience and enlightenment for the future mergers and acquisitions of Chinese enterprises.

Key words: mergers and acquisitions; high premium; risk; goodwill impairment.

1. Introduction

With the rapid development of China's market economy, an increasing number of enterprises have begun to be exposed to the urgent pressure of structural adjustment and transformation and upgrading. Mergers and acquisitions have become a rigid need for optimizing the industrial structure and improving the developing quality and efficiency. In 2014, the State Council issued the Opinions on Further Optimizing the Market Environment for Mergers and Acquisitions, which further optimizes the M&A process and creates a better market environment for M&A companies. Driven by changes in the market environment and policies, the number of cross-border M&A transactions in China has increased significantly. However, with the continuous increase of its scale, high premium mergers and acquisitions have also begun to occur frequently, and there are many risks hidden behind, bringing great harm to the operation of both the enterprise itself and the capital market.

In recent years, with the economic growth and continuous strengthening of people's health awareness in China, people's demand for health care products is increasing day by day. From 2013 to 2020, the scale of China's health care products market increased from 99.3 billion yuan to 250.3 billion yuan, and was expected to continue to increase in the future[1]. At the same time, the state has also launched a series of policies to support the development of nutritious and health food, and expand the scale of China's health industry. In December 2011, the National Development and Reform Commission and the Ministry of Industry and Information Technology jointly issued the Twelfth Five-Year" Development Plan for the Food Industry, with the nutrition and health food manufacturing industry included in the national development plan. The favorable health policy promotes the continuous development of the health care products industry. Under this developing trend, the number of mergers and acquisitions in China's health care product industry has also continued to surge. In 2021, the scale of mergers and acquisitions in the medical and health care sector has reached 13.505 billion US dollars, and there are many cases of high premium mergers and acquisitions[2].
Therefore, this paper focuses on the health care product industry, selects a typical high-premium cross-border M&A case in China's health-care product industry - BY-HEALTH M&A with LSG to conduct research, analyzes the causes and risks of high-premium mergers and acquisitions, puts forward risk prevention suggestions, and provides experiences and inspiration for future M&A transactions of enterprises.

2. Literature Review

Cross-border M&A is an important channel to increase resource base, expand competitive advantage and enhance corporate value (Ma Jincheng, Jiao Guannan, Ma Mengxiao, 2014)[3]. Companies getting through cross-border mergers and acquisitions cannot only improve their own management innovation capabilities by absorbing the advanced concepts of the other party, but also expand their overseas markets faster and increase the market share, thereby achieving substantial growth in corporate value (Xu Weili, 2022; Sun Huapeng, Su Jingqin, Cui Miao, 2022; Xu & Li, 2021)[4][5][6]. To this end, more and more companies choose to implement their overseas M&A strategies.

However, cross-border mergers and acquisitions tent to result in higher premiums, i.e., the price paid by the acquirer in excess of the intrinsic value of the company[7]. In the existing literature, reasons for the formation of the M&A premium of multinational companies are analyzed from the national level, the industry level, the corporate strategy level and the asset evaluation process.

From the national level, there are often differences in language, culture, institutional policies, etc. between the two mergers and acquisitions parties, which make the companies only recognized for high premium mergers and acquisitions. At present, the target companies of China's mergers and acquisitions are mainly concentrated in the western developed countries with a capitalist system, and the target industries of mergers and acquisitions sometimes involve the advanced technology industries or key industries of the target countries. Therefore, the scrutiny of Chinese companies has gradually increased in recent years. Largely, only a high premium can contribute to better completing mergers and acquisitions (Qiu Yonghui, 2017[8]; Ren Jetta, 2021[9]). The empirical analysis of cross-border mergers and acquisitions of Chinese enterprises also shows that greater cultural differences and comprehensive country differences between the two parties usually indicate a higher probability of the premium achieving successful acquisition.

From an industry perspective, current cross-border M&A of Chinese enterprises is mainly concentrated in the resource technology field with huge development potential[10]. A good industry outlook tends to herald a prosperous future with greater attractiveness, and therefore high premium mergers and acquisitions [11][12]. Given the country's vigorous support for the development of high-tech industries, its huge potential value has resulted in a high M&A premium rate in technology-intensive industries such as biopharmaceuticals and information technology (Zeng Guirong, 2018) [13]. With the help of environmental protection trends, new energy companies continuing to heat up are also experiencing high premium mergers and acquisitions (Luo Xin, 2020) [14].

From the perspective of corporate strategy, the main motivation for corporate mergers and acquisitions is the pursuit of post-merger synergies. The synergy effect is a kind of "1+1>2" effect proposed by German physicist Hermann Haken, which can enhance enterprise competitiveness after mergers and acquisitions, contributing to improved cash flow or operating performance[15]. The development of synergies enables enterprises to reduce the cost of sales (Junming, Hsiao, & Chi, 2021)[16], and have access to a wider market and diversified products (Diaz & Azofra, 2009)[17]. Both parties can complement each other's resource advantages and shoulder the risks jointly (Li Yuan, 2017)[18]. The many benefits of post-M&A synergies attract enterprises to have high expectations for synergies, and make them willing to acquire at high premiums (Olante, 2013; Yang Liu, 2018)[19][20]. Besides, Antoniou, Arbour, and Zhao (2008)[21] conducted empirical research and found that the greater the synergistic benefit is expected by the acquirer, the higher the premium level will be.
From the perspective of evaluation, asset evaluation itself is provided with the characteristics of complexity and professionalism, so the incorrect selection of evaluation factors such as M&A market factors, insufficient data and incorrect methods will endow the final evaluation result with a subjective color in a premium assessment (Zhang Xiaohui, 2016; Zhou Junru, 2013; Lin Ying, Chen Zuying, 2022)[22][23][24]. At the same time, China's asset appraisal industry started late, the quality control system is still imperfect, and appraisers have not formed an obvious quality control concept in the practice, also indirectly leading to appraisal premium (Feng Xiaoming, 2014)[25].

Most scholars believe that high premium mergers and acquisitions will exert a negative impact on enterprises, which has been analyzed from the following two aspects in existing research.

First, high-premium mergers and acquisitions will bring about the risks of goodwill impairment to enterprises. As stipulated in China New Accounting Standard No. 20 Business Combination, "the purchaser shall recognize the difference between the cost of the merger and the fair value of the identifiable net assets of the acquiree in the merger as goodwill". Therefore, goodwill is essentially the product of a premium merger, and reflects the acquirer's expectation of the excess profitability after the merger (Liu Li, 2021; Lu Yang, Qi Xiaoyan, Gu Chengwei, 2021) [26][27]. However, high-premium mergers and acquisitions may also lead to severe goodwill impairments to the company[28]. Impairment of goodwill means that the corresponding impairment loss is confirmed after the goodwill formed in the merger is tested for impairment. From the perspective of company performance, although high-value acquisitions will attract the attention of investors in the short term[29]. The acquired company suffering from a decline in performance or failing to fulfill performance commitments Once is subject to huge goodwill impairments (Yao Bo, 2022; Yuan, Gao, & Shi, 2020)[30][31]. From the perspective of enterprise type, asset-light enterprises are faced with more uncertainties than asset-heavy enterprises, and the evaluation of high premium will cause huge impairment of goodwill due to the performance decline (Wu Shan, 2022)[32].

Goodwill impairment is a bad signal to the market and a leading indicator of future profitability decline (Li et al., 2011)[33]. When this kind of negative information flows into the market, investors will sell many of their stocks due to the goodwill impairment, which will cause fluctuations in the company's stock price and rapid evaporation of the market value (Han Hongwen, Tang Qingquan, Li Wenfei, 2019; Li, 2021)[34][35], and companies suffering from goodwill impairment tend to have lower credit ratings, which will have a certain impact on the company’s future financing and transactions (Sun & Zhang, 2017)[36].

Second, high premium mergers and acquisitions will also expose enterprises to financial risks. Financial risk is a financial activity in which the company suffers losses due to various uncertainties, which may ultimately lead to a significant difference between the company's actual earnings and expected earnings[37]. From small payment difficulties to large financial crisis, it will lead to serious economic consequences to enterprises. When a company has a high premium merger, it requires the company itself to raise more funds to pay high costs and integrate. No matter which way the enterprise chooses to raise funds, it will face the expansion of debt scale, Wand thus fall into the dilemma of capital turnover (Sun Dandan, 2021; Li Bin, 2015)[38][39]. After the merger, if the high-quality assets of the merged enterprise cannot be fully utilized and driven, it will also cause losses and the enterprise will still face financial pressure (Zhang Fahong, 2017)[40].

It can be observed by sorting out the above literature that domestic and foreign scholars have achieved certain research results in the causes and risk analysis of high-premium mergers and acquisitions of enterprises, but they mainly focus on the common problems of enterprises, and their research still lacks applicability. Therefore, this paper analyzes the case of BY-HEALTH’s high-premium merger and acquisition of LSG, and conducts an in-depth analysis of the causes and risks of its high-premium merger and acquisition, focusing on the health care product industry, which further enriches the relevant research on high-premium mergers and acquisitions of Chinese enterprises.
3. Case Introduction

3.1 Introduction of both parties to the transaction

3.1.1 BY-HEALTH

BY-HEALTH, founded in October 1995, fully integrates resources such as authoritative nutrition and health research institutions at home and abroad, focuses on "new functions, new raw materials, and new technologies" for innovative research and development, and establishes a comprehensive scientific system of dietary nutritional supplements. It systematically introduced dietary supplements into the non-direct sales field in China in 2002, was listed on the Shenzhen Stock Exchange Growth Enterprise Market on December 15, 2010, and has rapidly grown into a leading brand and benchmarking enterprise of dietary supplements in China.

Chronic disease nutrition intervention research has been conducted and is committed to creating the ultimate scientific nutrition products, including protein, vitamins, minerals, and other functional dietary supplements.

3.1.2 LSG

Life-Space Group Pty Ltd (LSG for short), founded in 1993, is a professional probiotic brand in Australia, also one of the largest companies in the probiotics market in Australia, and has become Australia's leading broad-spectrum probiotics brand, whose main business is the research and development, production and sales of comprehensive health products based on probiotic health food. The main brand is Life-Space, covering 26 kinds of probiotics.

LSG’s products cover all age groups and can help people build a balanced micro-ecosystem in the body.

3.2 Merger and acquisition process

More than a year after BY-HEALTH initiated its plan to suspend trading in January 2018, it officially completed the acquisition of LSG, since when, LSG products have begun to flood into the Chinese market. The specific M&A process and the specific equity control relationship of LSG is shown in Table 1, and Fig. 1, respectively.

Table 1. BY-HEALTH M&A process of LSG

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018.1</td>
<td>• Formal suspension of trading, planning to acquire LSG's major asset restructuring.</td>
</tr>
<tr>
<td>2018.2</td>
<td>• By-Health, together with Zhongping Guojing, Jiaxing Zhongping, Xinde Houxia and Xinde Aodong, jointly established a special M&amp;A fund, Tomson Baisheng, with Tomson By-Health holding 51.67%.</td>
</tr>
<tr>
<td>2018.5</td>
<td>• By-Health increased its capital contribution, holding 53.33% of the shares, occupying an absolute advantage. At the same time, Tomson Baisheng used the overseas grandchild company Australia Baisheng as the acquisition entity of LSG, negotiated with the Australian counterpart LSG, and acquired LSG in full for 3.514 billion yuan.</td>
</tr>
<tr>
<td>2019.6</td>
<td>• By-Health acquired the minority stakes of Tomson Baisheng held by four private equity funds, namely Zhongping Guojing, Jiaxing Zhongping, Xinde Aodong and Shun Xinde Houxia, thus achieving wholly-owned control of Tomson Baisheng and 100% control of LSG.</td>
</tr>
</tbody>
</table>
Fig. 1 LSG equity control relationship

4. Case Analysis

4.1 Analysis of the causes of high premium mergers and acquisitions

4.1.1 High expected synergy effect

As early as 2015, BY-HEALTH's biggest competitor, Biostime, acquired an 83% of stake in Swisse, a well-known Australian company whose vitamin and mineral health products have entered the Chinese market on a large scale, enriching Biostime's product line, with its sales growing significantly.

The good growth momentum of competitors has brought tremendous pressure to BY-HEALTH. Since BY-HEALTH went public in 2010, its development has been relatively slow, making the acquisition of LSG a key to breaking the predicament. It intends to form complementary advantages and enhance market competitiveness by virtue of post-integration synergies. Therefore, management with high expectations for synergies is willing to pay a high premium for acquiring LSG. The specific synergy effect is reflected in the following aspects.

4.1.1.1 Product and market synergy

With the increase of the country's per capita disposable income and the improvement of public health awareness, domestic consumer groups are paying more attention to their physical health, bringing about a huge market demand for health.

In recent years, dietary supplement (VDS) products, as one of the leading sub-sectors of health food, are developing rapidly in domestic and foreign markets. According to research from Euromonitor International, global health food sales grew by $51 billion from 2011 to 2016, with nearly half of that growth coming from a surge in sales of VDS products[41]. China's VDS market is also developing rapidly, and achieved about 46.1 billion yuan in 2006, which increased to 167.33 billion yuan in 2017, 3.6 times the market size in 2006 12.4%[42].

From the perspective of market segments, probiotics are the fastest growing field. According to GIA, an industry analysis company, the growth rate of the global probiotic product market has reached about 10%-15% since 2005[43], with a rapid development momentum.

The acquisition target company, LSG, is one of the largest companies in the probiotics market in Australia, enjoying a high reputation in the international market. According to the data from IRI-Aztec Australia, the compound annual growth rate of LSG's market share was as high as 224% from 2015 to 2017[44]. In the future, with the continuous maturity of technology in the probiotics field and the continuous improvement of China's national economic income, LSG will be endowed with broader development prospects.

BY-HEALTH is a benchmark industry of domestic health care products, offering products including protein, vitamins, minerals, natural animal and plant extracts and other functional dietary

---

---

---
supplements. The promising acquisition of LSG will complement the company's layout in the probiotic product line, not only enriching the company's existing product line and gaining greater profits in the promising probiotic field, but also filling the supply gap in the domestic probiotic industry and rapidly increasing the market share. Therefore, BY-HEALTH is willing to implement high premium mergers and acquisitions to quickly seize the probiotics market.

4.1.1.2 Channel coordination

After the acquisition, BY-HEALTH will introduce LSG’s products to more e-commerce platforms and offline physical stores. Australia's health care products are included in the drug management under strict supervision. In addition, LSG is a well-known brand in Australia, whose addition can drive the sales of BY-HEALTH in the Chinese health care market, thereby promoting performance growth; at the same time, the sales scale in Australia is relatively high. Big LSG will also help BY-HEALTH establish an overseas foothold, and take this opportunity to conduct global business expansion and accomplish more overseas mergers and acquisitions.

Such a synergy of sales channels can give full play to the advantages of both parties in mergers and acquisitions, achieve channel optimization, and increase corporate sales revenue.

4.1.2 Valuations of appraisal institutions on the high side

The assessment agency assesses LSG using the market approach. The comparable listed company method and the comparable transaction case method are mainly applied to the evaluation process. The multiple of EV/EBITDA calculated using the comparable listed company method is 22.39 times, corresponding to the total equity value of LSG shareholders of RMB 4,132,358,000; the multiple of EV/EBITDA calculated using the comparable transaction case method is 14.71 times, corresponding to the entire equity of LSG shareholders of RMB 2,707,683,900. Considering that the comparable company data obtained using the listed company comparison method is relatively comprehensive, the weighting process is finally carried out. The weight of the application of the listed company comparison method is 60%, while that of the transaction case comparison method is 40%. The weighted average calculation of the total equity value of LSG shareholders is RMB 3,562,488,400. However, there are still problems existing during the valuation process, which lead to the high valuation.

<table>
<thead>
<tr>
<th></th>
<th>EV / EBITDA</th>
<th>Corresponding to the total equity value of LSG shareholders</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparable Public Company Law</td>
<td>22.39</td>
<td>4,132,358,000 yuan</td>
<td>60%</td>
</tr>
<tr>
<td>Comparable Transactions Case Law</td>
<td>14.71</td>
<td>2,707,683,900 yuan</td>
<td>40%</td>
</tr>
</tbody>
</table>


4.1.2.1 Improper selection of comparable companies in comparable company law

The comparable listed company law is a method to determine the appraisal value through the correction and adjustment of the value ratio by selecting a comparable company with the same or similar factors as the business structure, business model and other factors of the appraised unit in an open and active market[45].

In this case, the evaluators first selected Blackmores, a nutritional company, and two dairy companies, A2 Milk and Bellamy, for comparison. These three companies are mainly concentrated in China and Australia from the perspective of sales market; all of them belong to the fast-moving consumer goods category from the perspective of industry classification; and from the perspective of business model and sales model, they all purchase raw materials and sell them in the local Australian market and overseas Chinese. Purchasing is the main sales channel. They are therefore considered the most appropriate comparable companies.

However, although these three companies belong to the health food industry, there are still differences in their product types. Blackmores mainly sells vitamins, herbs, mineral supplements, and
natural skin and hair care products; while A2 Milk and Bellamy mainly focus on dairy products, quite different from LSG's probiotic products. In addition, LSG and Blackmores have rich product types, covering almost all age groups, while A2 Milk and Bellamy's products mainly focus on infant formula, and the target group is the younger generation of parents.

There are differences in the audience groups and environments faced by different segments, and the core competitiveness is different, so the future growth rate will be different. The product factors have not been revised in the evaluation process, and the comparability is questionable.

In July 2018, the Shenzhen Stock Exchange questioned the high valuation of the merger and acquisition of China United Assets Appraisal Company and sent an inquiry letter, which specifically pointed out the problem of poor selection of comparable companies. Although China United Assets Appraisal Company made a series of replies in response to the Shenzhen Stock Exchange's query in August 2018, there are still disputes over this high valuation in the market.

4.1.2.2 Doubtful multiple determination in the case law of comparable transactions

Comparable transaction case method refers to the evaluation method to determine the value of the appraised unit by comparing the appraised unit with comparable listed companies or comparable transaction cases [46].

In the case method of comparable transactions, China United Assets Appraisal Group selected two transaction cases, i.e., the acquisition of an 83% stake in Swisse Wellness by Biostime and the acquisition of Vitaco by Shanghai Pharmaceuticals, in which a Chinese company acquired an Australian health care product company within the past three years from the valuation benchmark date.

Biostime's main products are infant formula milk powder and nutritional products. In 2015, it acquired an 83% stake in Swisse Wellness, who mainly sells vitamins, herbs, and mineral supplements. The main business of Shanghai Pharmaceuticals covers the entire industry chain of pharmaceutical R&D and manufacturing, distribution, and retail. In 2016, it acquired 100% of the health care products company Vitaco. The acquisition targets in the case are all Australian health care products companies resembling LSG, guaranteeing the comparability.

However, the EV/EBITDA multiple of LSG obtained by the appraisal agency directly taking the average is 14.71 times after determining the transaction case. It can be seen from the transaction price that there is a big difference between the scale of BY-HEALTH's acquisition of LSG of A$800 million either in Biostime's acquisition of Swisse Wellness or in Shanghai Pharma's acquisition of Vitaco, and the asset appraisal agency reached the assessment conclusion without adjusting the different indicators in the case, thus resulting in a high premium assessment.

<table>
<thead>
<tr>
<th>Number</th>
<th>Transaction case</th>
<th>Transaction price (million Australian dollars)</th>
<th>EV / EBITDA</th>
<th>Average EV/EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Biostime acquires Swisse Wellness</td>
<td>138,600</td>
<td>14.71</td>
<td>14.71</td>
</tr>
<tr>
<td>2</td>
<td>Shanghai Pharma acquires Vitaco</td>
<td>31,300</td>
<td>14.70</td>
<td></td>
</tr>
</tbody>
</table>

Data source: BY-HEALTH Co., Ltd.'s major asset purchase report (2018)

4.1.2.3 Valuation advantage of LSG of the opposite party brought by information asymmetry in the game

As a non-listed company in Australia, LSG itself has less public information, and the acquirer Tomson BY-HEALTH is therefore placed at an information disadvantage. When assessing assets, in addition to data based on industry and national policy development, the asset appraisal agency mainly relied on the 2016-2017 financial data released by LSG, which cannot be tracked and observed for a long time, bringing difficulties to the assessment. As an information superior, LSG may intervene in the judgment by releasing signals of good future development to appraisers, which leads to the formation of high premium appraisals.
4.2 Risk analysis of high premium mergers and acquisitions

4.2.1 Risk of goodwill impairment

Enterprises or assets acquired by enterprises through high premiums may create greater value for the enterprise in the future, but it may also fail to create as much value as originally expected due to substandard performance. The asset needs to be written down if the value created turns out not to be as high as expected. After the acquisition of LSG, BY-HEALTH has been exposed to up to 1.009 billion yuan of goodwill impairment, which has attracted great attention from the capital market. The causes and consequences are analyzed as follows.

4.2.1.1 Causes of huge goodwill impairment

4.2.1.1.1 Performance decline

Since BY-HEALTH went public in 2010, its revenue has grown continuously. However, the outbreak of the Quanjian event and the introduction of the e-commerce law have exercised a huge impact on BY-HEALTH. In 2019, BY-HEALTH lost 356 million yuan in net profit, a decline of 135.51% year-on-year, the biggest loss since its listing. The sharp decline in performance has made BY-HEALTH’s provision for goodwill impairment formed by the acquisition of LSG as high as 1.009 billion yuan.

![Fig. 2 2016-2019 Net profit trend of BY-HEALTH](image)

4.2.1.1.1 Promulgation of the E-commerce Law hindering the purchasing model

After LSG was acquired by BY-HEALTH, its main revenue channels can be divided into two parts. One is LSG's original business in Australia, which is divided into offline sales in pharmacies in Australia and New Zealand, cross-border e-commerce, export distribution and OEM business, among which, the main customer groups are daigou merchants among the export distribution channels, who enter China's Taobao and other e-commerce platforms through daigou. The other is the offline business which BY-HEALTH helps LSG to carry out in China.

As can be seen from Fig. 3, in addition to the local business in Australia and New Zealand, the largest source of its sales revenue among LSG’s original business in Australia is the export distribution mainly based on purchasing agents.

![Fig. 3 LSG business composition](image)

Data source: BY-HEALTH Co., Ltd. Announcement on Reply to the Letter of Concern of Shenzhen Stock Exchange (2020)
However, in early 2019, in order to rectify the chaotic daigou market, China promulgated the new law and regulation, E-Commerce Law, aiming at promoting the long-term, healthy, and green development of e-commerce in China. The new E-Commerce Law strictly stipulates that daigou on all e-commerce platforms need to be supervised, which exercises the following impacts on Tomson BY-HEALTH who has just acquired LSG.

First, the operational risk increases. Before the implementation of the E-commerce Law, the profit point of daigou lies in the exemption of customs duties, consumption tax, etc., and the business model of some small and medium-sized daigou merchants to advertise and sell products on their platforms or WeChat is not fully within the scope of supervision, which is quite different from previous law enforcement. The basis is not clear enough and the level of law enforcement is not in place. However, after the E-commerce Law clearly stipulates that purchasing agents should handle subject registration and taxation issues, resulting in their increased operating costs and reduced profits. LSG’s export and distribution business mainly come from purchasing agents, which exerts a lot of pressure on Tomson BY-HEALTH who has just paid a high premium to acquire it.

Second, the number of purchasing agents has declined. On the one hand, after implementing the E-commerce Law, some goods failing to meet the requirements will cease their regular operation. China's private warehouses for purchasing agents are banned, the time for consumers to receive mail is delayed, and the long wait period shifts customers to other local health care products, thereby reducing the consumer demand for purchasing agents. On the other hand, under the influence of the E-commerce Law, LSG’s purchasing business has become more difficult to operate, and many small and medium-sized purchasing agents have withdrawn from the market one after another, resulting in the loss of consumers in this part of the channel, making it necessary to re-integrate the channel to establish end-consumer reach again. In its reply announcement to the Shenzhen Stock Exchange's letter of concern, BY-HEALTH stated that the re-integration of channels and the restructuring of the price system have had a great impact on the daigou business.

It can be seen from the changes in the revenue of LSG channels in Table 4 that the export distribution revenue in 2019 fell by 68.5% year-on-year, and according to the company's internal estimates, the proportion of purchasing on behalf of buyers was about 40% in 2018 in the Australian and New Zealand market channels, and the proportion dropped to less than 20% in 2019. Additionally, IRI Scan Sales data, Pharmacy statistics show[47] that most of the well-known products favored by daigou dropped by 15%-30% or more, indicating that the promulgation of the E-commerce Law has hindered LSG's purchasing channels and resulted in a sharp decline in performance.

<table>
<thead>
<tr>
<th>channel</th>
<th>2019</th>
<th>2018</th>
<th>year-on-year change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia and New Zealand market</td>
<td>29,431</td>
<td>69,891</td>
<td>-57.9%</td>
</tr>
<tr>
<td>Cross-border e-commerce</td>
<td>33,697</td>
<td>19,438</td>
<td>73.4%</td>
</tr>
<tr>
<td>export distribution</td>
<td>15,650</td>
<td>49,737</td>
<td>-68.5%</td>
</tr>
<tr>
<td>OEM business</td>
<td>4,755</td>
<td>6,480</td>
<td>-26.6%</td>
</tr>
<tr>
<td>total</td>
<td>83,533</td>
<td>145,546</td>
<td>-42.6%</td>
</tr>
</tbody>
</table>

Data source: BY-HEALTH Co., Ltd. Announcement on Reply to the Letter of Concern of Shenzhen Stock Exchange (2020)

4.2.1.1.2 Intensified supervision of the industry leading to a decline in sales

At the end of 2018, Quanjian, a direct selling company, got into trouble in face of many problems such as false propaganda and pyramid schemes, which brought the market chaos in the health food industry to the public, and directly triggered a large-scale rectification at the national level. In 2019, the State Administration for Market Regulation and multiple departments jointly launched a "100-day campaign" to rectify the chaos in the health care product market for 100 days, and severely crack down on illegal activities such as false propaganda, false advertising, and the production and sale of
fake and shoddy products, with as high as 58,000 violation cases investigated and settled by the end of 2019[48].

The outbreak of the Quanjian event has greatly reduced consumers’ trust in the health care product industry. According to a survey initiated by the State Administration for Market Regulation and China Consumers Association in 2019, consumers’ satisfaction with the health care industry was 44.17%[49], making it the field with the lowest satisfaction in the year, and more than 70% of the respondents expressed their skepticism about health care products.

The Quanjian event brought the entire health care product industry in trouble, and even BY-HEALTH was also investigated for false propaganda and other issues[50], imposing a terrible impact on its business.

At the same time, in order to combat the phenomenon of "cash out of medical insurance" in 2018, the National Medical Security Administration issued the Interim Measures for Reporting Rewards for Fraudulently Obtaining Medical Insurance Funds, and explicitly prohibited the use of medical insurance cards to purchase non-medical items such as nutritional health food.

Some BY-HEALTH products used to support paying with medical insurance cards. The release of the Measures has dealt a huge blow to BY-HEALTH who relies much on offline channels. Two days after the introduction of the system, it crashed and fell to the limit[51].

4.2.1.2 The accrual of goodwill is motivated by earnings management

According to the requirements of Accounting Standards for Business Enterprises - Impairment of Assets, an enterprise with its goodwill formed due to business combination should at least conduct an impairment test at the end of each year. In 2018, the China Securities Regulatory Commission issued Accounting Standards for Business Enterprises No.8-Asset Impairment, which further standardized the accounting treatment and information disclosure of goodwill impairment of listed companies, and strengthened the accounting supervision of goodwill impairment. However, compared with the amortization method of the old accounting policy, the management is still left with some room for control. Many companies will use goodwill impairment for earnings management, and then for huge writing off, earnings smoothing and other behaviors[52].

BY-HEALTH has suffered from a huge goodwill impairment after the acquisition of LSG, which has caused many doubts in the market. In response to the inquiry letter from the Shenzhen Stock Exchange, BY-HEALTH issued the BY-HEALTH CO., LTD. Announcement on the Reply to the Letter of Concern of the Shenzhen Stock Exchange on January 3, 2020, and carried out detailed disclosure for the calculation process of goodwill impairment in 2019, but the prediction of LSG China's offline business in the public announcement raised public doubts.

In 2019, BY-HEALTH launched LSG’s offline business in China one after another, and predicted while evaluating the acquisition of LSG that the estimated would reach RMB 104 million. Indeed, the actual revenue in 2019 was RMB 126 million, 21.42% higher than the predicted value at the time of evaluation, with a favorable developing trend and beyond the expectations by a large margin. Though faced with such a good start, BY-HEALTH revised its revenue for the next few years down significantly.

Table 5. 5-HEALTH's assessment of LSG’s offline business in China

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income (thousands of RMB)</td>
<td>126,280</td>
<td>189,419</td>
<td>265,772</td>
<td>327,752</td>
<td>378,058</td>
<td>406,052</td>
</tr>
<tr>
<td>Forecast revenue period growth rate</td>
<td>50.00%</td>
<td>40.31%</td>
<td>23.32%</td>
<td>15.35%</td>
<td>7.40%</td>
<td></td>
</tr>
<tr>
<td>Previous assessment</td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
<td>2022</td>
<td>2023</td>
<td>2024</td>
</tr>
<tr>
<td>Income (thousands of RMB)</td>
<td>104,000</td>
<td>267,200</td>
<td>444,364</td>
<td>615,892</td>
<td>739,079</td>
<td>816,299</td>
</tr>
<tr>
<td>Forecast revenue period growth rate</td>
<td>156.92%</td>
<td>66.30%</td>
<td>38.60%</td>
<td>20.00%</td>
<td>10.45%</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
<td>2022</td>
<td>2023</td>
<td>2024</td>
</tr>
<tr>
<td>Income (thousands of RMB)</td>
<td>22,280</td>
<td>-77,781</td>
<td>-40.19%</td>
<td>-46.78%</td>
<td>-48.85%</td>
<td>-50.26%</td>
</tr>
<tr>
<td>Decrease in income</td>
<td>21.42%</td>
<td>-29.11%</td>
<td>-42.95%</td>
<td>-49.42%</td>
<td>-50.26%</td>
<td></td>
</tr>
</tbody>
</table>

Data source: BY-HEALTH Co., Ltd. Announcement on Reply to the Letter of Concern of Shenzhen Stock Exchange (2020)
According to BY-HEALTH's reply, considering the uncertainty of the industry and policy, the future profit forecast was lowered in the 2019 impairment test assessment. However, in fact, when the impairment test was carried out at the end of the year, it had been a year since the introduction of the E-commerce Law and the Quanjian event, whose impact on BY-HEALTH related businesses had basically appeared. The actual revenue of offline business in 2019 was 21.41% higher than the forecasted acquisition assessment, which could be said to be more positive, but BY-HEALTH sharply lowered its future earnings. The appraisal agency largely relied on the financial data provided by the management of the appraised company while subsequently assessing the goodwill, which led to a relatively high goodwill impairment.

It is true that we cannot rule out the negative impact of future industry policies on BY-HEALTH, but under this favorable developing trend, such a sharp reduction may be attributed to the management's purpose to ease the performance pressure.

This paper simulates the 10-year net profit changes under the straight-line amortization method, and compares it with the net profit under the current goodwill impairment method. It can be clearly seen that under the goodwill impairment method, managers have more room for manipulating and accruing a huge amount of goodwill can leave more profit space in the future, thereby reducing the performance pressure.

At the same time, the Accounting Standards Advisory Committee of the Ministry of Finance issued the recommendations put forward by the Advisory Committee in 2019 for adjusting the accounting treatment of goodwill, from the current impairment test to goodwill amortization. Although it is only a suggestion, it has touched the sensitive nerves of listed companies, and caused a considerable stir among companies with high premium mergers and acquisitions.

Under the straight-line method, the annual amortization of goodwill erodes profits. BY-HEALTH formed a goodwill up to 2.166 billion yuan after acquiring LSG, and will bear at least 100 million of goodwill impairment annually with the change of the accounting policy if no huge impairment is made. It may even go bankrupt and delist if the prescribed amortization period is shorter. Therefore, BY-HEALTH's huge provision may also act as an alternative to ease the pressure caused by changes in future accounting policies.

4.2.1.2 Consequences of goodwill impairment

Affected by high-premium mergers and acquisitions, shareholders can expect to accrue huge goodwill impairment risks in the future, thus triggering large-scale shareholder reductions. According to BY-HEALTH's announcement, the company's shareholders Liang Shuisheng, Tang Hui, Sun Jinyu, and Chen Hong reduced their holdings of the company's shares by a total of 4.9502 million shares in a centralized bidding transaction, accounting for 0.29% of the company's total share capital. The average price of this reduction transaction was 25.99-27.55 yuan per share, and these four shareholders was estimated to have cashed out about 133 million yuan in total.

![Fig. 4 Changes in net profit under different treatment methods of goodwill](image-url)
After the trough period in 2018, the year 2019 ushered in the recovery of the entire industry. BY-HEALTH's share price jumped from 15 yuan in January to more than 23 yuan, and the share price was relatively stable. However, after the reduction of holdings in September, the stock price gradually fell to a minimum of 14.17 yuan.

On December 31, 2019, BY-HEALTH disclosed its 2019 performance forecast, saying that it had conducted a preliminary impairment test on the goodwill formed by the acquisition of LSG, and estimated that the total amount of goodwill and intangible assets impairment reserves would be accrued by about 1.54-1.64 billion yuan in total. As soon as the news came out, the share price of BY-HEALTH fell by 4.73% at the opening of the second day, and the continuous decline in the stock price urged a large number of investors to sell their stocks when the stock price was at a low level.

The sharp drop in goodwill is thought as a bad signal for investors, and will lead to a sharp decline in the stock price. The huge goodwill impairment has also caused severe economic consequences to BY-HEALTH.

### 4.2.2 Financial risk

#### 4.2.2.1 Increased debt repayment burden

| Table 6. Debt service ratio of BY-HEALTH from 2016 to 2020 6 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | 2016            | 2017            | 2018            | 2019            | 2020            |
| current ratio   | 5.33            | 4.45            | 2.75            | 2.17            | 2.17            |
| quick ratio     | 4.77            | 3.98            | 2.3             | 1.74            | 1.78            |
| cash ratio      | 3.32            | 2.91            | 1.22            | 1.04            | 0.82            |
| Assets and liabilities | 11.72 | 16.06 | 29.65 | 28.8 | 27.99 |

According to the financial statements of BY-HEALTH from 2018 to 2020, this paper analyzes the short-term solvency of the company based on the current ratio, quick ratio, and cash ratio, and the asset-liability ratio is selected to reflect the long-term solvency of the company. Current assets and quick assets reflect the company's ability to immediately realize current assets for repayment of current liabilities, while cash ratio represents the company's ability to realize liquidity, and asset-liability ratio is an important indicator for measuring the level of debt and risk of an enterprise.

According to the financial statements of BY-HEALTH, its total liabilities were RMB 981.65 million in 2017, and rose to RMB 2,902.5 million in 2018, with an increase of 195.7%, which may mainly result from the large loan from the Industrial and Commercial Bank of China to acquire LSG and rapidly improve its market competition rate.

As can be seen from Fig. 5, BY-HEALTH’s current ratio, quick ratio and cash ratio all declined to a certain extent after acquiring LSG with high borrowings in 2018, indicating a decrease in the short-term solvency of the company, which would increase its debt repaying pressure and bring more difficulties to its future financing. The asset-liability ratio also jumped from 16.06 in 2017 to 29.65 due to high borrowings, and increased the business risk of the company. In the long run, its capital turnover will also get into trouble.

In the next two years, in order to alleviate the impact of policy restrictions and high-premium mergers and acquisitions, BY-HEALTH issued a capital increase proposal and planned to raise nearly 3.5 billion[53], so as to further improve the layout of its e-commerce channels, accelerate the construction of the company’s consumer-centric full-chain digital system, and build production bases in Zhuhai, Australia and other places, and mobilize its financial leverage to obtain greater profits. However, the further increase of corporate liabilities increases its operating risks, making its overall solvency still subject to a downward trend.

It can therefore be concluded that a high premium acquisition will increase the debt burden of the company and its operating risk as well, thus influencing the company's future development.
4.2.2.2 Declining profitability

The level of return on total assets reflects the competitive strength and development ability of the enterprise with assets, and the return on equity reflects its ability of self-owned capital to obtain net income. The return on total assets and return on net assets of BY-HEALTH showed a downward trend in 2018-2019, and even negative values in 2019, mainly due to the high premium acquisitions. However, affected by the issue of the E-commerce Law, LSG’s overseas performance failed to meet the expectations, and a huge amount of goodwill was accrued, which directly led to the loss of profits.

Since BY-HEALTH went public in 2010, its profits have grown steadily. In 2017, BY-HEALTH, based on the predicted long-term healthy development in the future, adjusted its business structure of some sub-brands, and incorporated the bone health brand, Jianliduo, and the scientific and precious Chinese herbal medicine brand, Infinity, into the Tomson pharmaceutical business segment, forming a business segment, with Tomson included. At the same time, it quickly established a cross-border e-commerce business in China, and officially launched the "big single product +cross-border e-commerce" operation model. The implementation of these important strategies brought BY-HEALTH a net profit exceeding 1 billion yuan in 2018, with an operating income of 4.351 billion yuan, an increase of 39.86% over the same period in 2017, and its profitability continued to rise as well. The high premium acquisition and severe goodwill impairment directly caused a sharp decline in the profitability of the company in 2019, which brought huge operating risks to the company.

BY-HEALTH made positive responses and adjustments in 2020 in the case of the sharp profits drop in 2019. With the gradual weakening of the influence of the E-commerce Law and the Quanjian event, also the gradual recovery of the domestic consumer market, BY-HEALTH launched a full-scale attack with "four single products + two image products + one star product " to activate the market demand; and launched the dealer fission plan to expand sales channels, where the new dealers was mainly fissioned by the original dealers, and a new dealer system was built with prefecture-level cities as units. Therefore, the profitability of BY-HEALTH has recovered gradually after 2019.

Although BY-HEALTH had taken active countermeasures to deal with the risks caused by high premiums, the decline in profits and profitability caused by high premium mergers and acquisitions had worried the investors, leading to widespread stock selling and investors reducing their holdings. situation occurs[54]. Therefore, high-premium mergers and acquisitions are considered to reduce the profitability of the company, resulting in a decline in the value of the company, and bringing uncertainty to the future development of the company.

Table 7. Profit ratio of BY-HEALTH from 2016 to 2020

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROTA</td>
<td>9.92</td>
<td>13.4</td>
<td>11.42</td>
<td>-4.58</td>
<td>17.18</td>
</tr>
<tr>
<td>ROE</td>
<td>11.44</td>
<td>15.02</td>
<td>17.92</td>
<td>-5.94</td>
<td>21.98</td>
</tr>
</tbody>
</table>

Fig. 5 Chart of BY-HEALTH companys debt service ratio trend from 2016 to 2020
5. Conclusions and Recommendations

After the wave of mergers and acquisitions in China, an increasing number of companies choose high-premium mergers and acquisitions to quickly seize their market share. Against such a context, this paper draws the following conclusions after sorting out the acquisition of LSG at a high premium by Thomson BY-HEALTH:

First, the formation of the high premium for corporate mergers and acquisitions results from the fact that companies are optimistic about the future prospects of the acquiree and pursue post-merger synergies to increase its market share on the one hand while on the other, it is also attributed to the improper selection of evaluator data and methods.

Second, considering factors such as industry trends and the pursuit of earnings management, the high-premium merger and acquisition of a company will firstly bring goodwill impairment to the company, which will in turn lead to a reduction in shareholders' holdings and a drop in stock price, and greatly reduce the value of the company. Besides, it will also bring about financial risks. In order to pay the premium, companies often borrow large sums of money, which will not only increase the debt repayment burden of the company, but will also lead to a sharp decline in the profitability of the company and bring the company into financial crisis.

Therefore, measures should be taken to avoid the formation of high premiums.

First, relevant regulatory authorities should strengthen the supervision of corporate mergers and acquisitions. The frequent occurrence of high premium mergers and acquisitions will not only bring financial risks and goodwill impairment to enterprises, but will also disrupt the normal operation of the capital market, causing immeasurable consequences. Therefore, relevant departments are supposed to strengthen the review of mergers and acquisitions, strictly prohibit blind high-premium mergers and acquisitions, and prevent the formation of high-premium mergers and acquisitions from the source.

Second, the financial departments are suggested to further strengthen the information disclosure system for goodwill impairment and standardize subsequent measuring methods. Under the existing accounting standards, the management often manipulates the goodwill of the enterprise because of the motivation of earnings management, such as huge writing off and earnings smoothing. Therefore, stricter regulations should be formulated, the goodwill accrual mode of enterprises after mergers and acquisitions should be standardized, and higher requirements should be imposed on their information disclosure system, so as to avoid easing the performance pressure by accruing huge goodwill impairment.

Third, evaluation associations should strengthen the management of the evaluation process. The current formation of high-premium mergers and acquisitions is largely caused by the overvaluation of appraisers, making it necessarily important for the appraisal association to strengthen the
professional training and assessment of appraisers, further clarify relevant requirements for the data and methods selection in the appraisal process, and avoid the formation of high premiums caused by improper appraisal; at the same time, the quality supervision over evaluation results should also be strengthened, and the proportion of economic penalties can be further increased under the current system[6].

Fourth, enterprises must strengthen their awareness of risk prevention. Before making mergers and acquisitions, given that they are in a state of information disadvantage or that their understanding of the acquired party is not clear enough, enterprises tend to overestimate the synergies after mergers and acquisitions, and carry out high-premium mergers and acquisitions. However, the occurrence of high premiums often brings serious economic consequences to companies. Therefore, enterprises should have a clear understanding of the enterprises to be acquired, and the industries and policies before mergers and acquisitions, and the ability to identify the rationality of the evaluation results, so as to avoid the risks brought by high premium mergers and acquisitions.

Fifth, preventive measures should be initiated after high premium mergers and acquisitions. Enterprises paying a high premium for the acquisition should refine their integration plan for the resources of both parties immediately after the acquisition to ensure the good play of synergy, and adjust the business strategy and take active countermeasures to recover more losses in the case of severe economic consequences.

References

[1] iiMedia Research(2021) "Data Analysis of Health Products Industry".


[49] "2019 Consumer Satisfaction Data Analysis Report".


