Research on the Influence of M&A Goodwill on Stock Price Fluctuation

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Abstract: ***This paper discusses the relationship between M&A goodwill and short - term stock price fluctuation on the background of M&A market. The research found that: goodwill aggravates the fluctuation range of stock price, and the relationship between the two is mainly derived from the samples with high goodwill, which preliminarily proves that the stock price of companies with high goodwill has a certain degree of bubble. Goodwill boosts corporate performance and investors overreact to mergers and acquisitions, creating bubbles in share prices. The decline of performance after M&A can be regarded as a signal of overvaluation of stock price, and the relationship between goodwill and stock price fluctuation is more obvious at this time. Further analysis shows that the relationship between goodwill and stock price volatility risk is more obvious when investors hold shares for a short period of time, the company is highly valued and the market is good. This paper enriches the research on the economic consequences of mergers and acquisitions of listed companies, reflects the unique nature of mergers and acquisitions in the early stage of development of countries with transitional economies, and has certain enlightenment on reducing stock price fluctuations and maintaining financial market stability.***

Keywords: M & A; Goodwill; Share Price Volatility

1. The Research Background

With the encouragement and opening of policies, more and more listed companies optimize resource allocation and improve corporate performance through M&A and restructuring. However, an interesting phenomenon has emerged. After some mergers and acquisitions of enterprises, not only did not achieve the expected results, but caused the sharp fluctuations in their stock prices; What's more, after the merger, the stock price soared and then collapsed, which brought great losses to investors. Take QtoneEducation Group as an example. When the company resumed trading on January 28, 2015 with the reorganization plan, its share price doubled in just eight trading days. Since then, the stock price has been rising and reached an all-time high on May 18, 2015. After that, the stock has continued to decline, and the stock price has dropped as much as 90% from its 2015 high on May 25, 2017. Apart from the impact of market fluctuations, the main reason for the large fluctuations of stock prices after M&A is that M&A produces a large stock price bubble, which is caused by the fact that the improvement of market performance brought by M&A is greater than that of financial performance. The essence of goodwill is the discounted value of the future expected excess profitability of the acquired enterprise. Therefore, the higher the goodwill, the higher the M&A side thinks that the acquisition can bring them financial performance improvement, the more difficult it is to achieve the expected improvement when the future results are released, and the greater the possibility of stock price bubble. Therefore, this article is trying to validate goodwill, on the basis of impact on stock price fluctuations in different industries characteristics analysis of goodwill threshold, the M&A enterprise goodwill is higher than the threshold, the merger has a high business reputation, the future stock price fluctuations higher, investors are more cautious when investing in the stock; For regulators, in order to maintain the stability of the stock market, there is also a certain reference significance.

2. Concept and Literature Review of Goodwill

2.1 The Concept of Goodwill

In 2007, the ministry of finance of China issued new accounting standards for enterprises. According to the new standards no. 20 enterprise merger, "the difference between the merger cost of the purchaser and the fair value share of the identifiable net assets acquired by the purchaser in the merger shall be recognized as goodwill. "According to the accounting standards for enterprises, the accounting treatment involving enterprise mergers should first distinguish whether the two sides are the same actual controller. Only in the case of an enterprise merger in which both parties do not have the same actual controller, the part of the amount paid by the listed company that exceeds the fair value of the acquired asset is accounted as goodwill. That is to say, the asset injection behavior of major shareholders does not change the goodwill of the company, and only the premium paid by listed companies when they carry out non-correlated marketization mergers and acquisitions is accounted into the goodwill, so the goodwill is equivalent to the premium paid by listed companies in marketization mergers and acquisitions.

2.2 Literature Review

The relationship between stock price and M&A. Currently, there are: in 2003, Shleifer, Vishny, Rhodes-Kropf and Viswanathan put forward the market timing theory of mergers and acquisitions, holding that the overvaluation of stock price is the motivation of mergers and acquisitions, and companies can benefit the shareholders by exchanging the overvalued stocks for the relatively undervalued assets. In 2005, Rhodes-Kropf et al. found that acquirers with relatively overvalued stock prices tend to use stock as the payment method of M&A, and acquirers with relatively overvalued stock prices have a higher degree of overvaluation than cash payers. In China, overvaluation of stock prices not only affects the payment method of M&A

(Li jinglin et al., 2013; Zhao xi and Sun shipan, 2015) also have an important influence on financing methods of mergers and acquisitions (Li jinglin, 2017), that is, companies with overvalued stock prices tend to pay stock and finance stock.

In 2001, Godfrey and Koh studied listed companies in Australia and found that the goodwill of listed companies had a greater impact on corporate value. In particular, the capitalization information of goodwill would attract extensive attention from investors in the capital market. The classification of goodwill types when the listed companies confirm goodwill can also attract the attention of the market, Henning et al. (2000) the goodwill was divided into continuing business goodwill and synergistic goodwill. Taking 1576 listed companies with merger and acquisition activities in the United States from 1990 to 1994 as samples, this paper studied the stock market's reaction to the continuing business goodwill and synergistic goodwill. Further research shows that investors pay more attention to the synergetic goodwill generated by M&A activities rather than the goodwill generated by going concern. In terms of the influence of goodwill on stock price, Wang wenjiao et al. (2017) discussed the role of goodwill in predicting the risk of stock price crash in the future. However, they fully explained the relationship between goodwill and stock price crash from the perspective of accounting information. In 2018, Yang wei use reputation as a corporate M&A behavior such as agent, also joined the behavioral finance theory in the study, the results show that the enterprise M&A goodwill, the higher the more stock price crash risk, fundamental value is difficult to measure accurately, scholars generally afterwards to collapse as a necessary condition for judging share price bubble.

3. Research Hypothesis

Share price performance driven by non-fundamental factors is a common phenomenon in capital markets. As for China's capital market, many studies have shown that when companies carry out major events, investors may overreact in the short term, making the stock price deviate from the company fundamentals in the short term. For example, Han liyan et al. found that investor sentiment is the main reason for the inertia of short-term returns after the IPO, which also leads to long-term stock price reversal. Wang huei et al. found that after the listed companies announced the share transfer, the stock price showed the momentum and reversal effect of merger and acquisition, which was more obvious in ST company. Li xindan et al. found that when listed companies implement stock dividends that have no real impact on the fundamentals of the company (that is, "high transfer to smelting"), investors will show irrational trading behaviors due to the illusion of nominal price. The above research indicates that investors in China's capital market will follow the trend of buying "eye-catching corporate events, making the company's stock price overreact in the short term. Similar to the above events, corporate mergers and acquisitions will also attract investors' attention; However, as an important way for the external growth of the acquirer, M&A is more important because it can improve the fundamental value of the company through synergies. Based on the above analysis, when M&A promotes both accounting performance and market performance, the promotion of market performance may partly reflect the overreaction of investors. Compared with the promotion effect of goodwill on accounting performance, the promotion effect of goodwill on market performance is stronger in the current period. Therefore, companies with high reputation are more likely to have stock price bubbles. When financial information is released on the first annual report day after merger and acquisition, investors can judge the effect of merger and acquisition according to the performance and adjust stock price expectations, which will result in short-term stock price adjustment, increase short-term stock price fluctuation range and reduce the degree of bubble. The hypothesis is made accordingly.

Hypothesis: goodwill and stock price fluctuations are positively correlated

4. Empirical Research

4.1 Data Source

The data of M&A comes from national tai 'an database, and the data of stock price comes from CCER database. This paper takes listed companies in Shanghai and Shenzhen stock markets of China from 2013 to 2017 as research objects, and the data used are all from CSMAR database. In this study, stock price trading data and financial data of the following year should be used. However, no financial data of 2018 annual report has been released yet, so the sample of this paper is up to 2017. The initial data are processed as follows: (1) excluding financial listed companies; (2) delete data missing samples; (3) eliminate the influence of extreme value. According to the above standards, 4,881 observations were finally obtained.

4.2 Variables Design

Explained variable (BETA) :In this paper, the theory part of this article is to explain variables for short-term fluctuations, for eliminating the influence of the market was measured using BETA value share price volatility, with the period before and after the BETA difference Δ BETA to measure the change of short-term fluctuations.

Explanatory variable (SY) :In order to study whether goodwill will affect the short-term stock price volatility; This paper USES goodwill adjusted for total assets as the explanatory variable. At the same time, the classification of goodwill is measured by the adjusted goodwill according to the industry ranking, and the top 50% of the industry belongs to high goodwill.

Control variables: refer to previous literatures (Kim et al., 2011b; Xu nianxing et al., 2012) selected the following control variables: company Size (Size), TobinQ value (total market value/net assets), ROA and Lev. In addition, Year is controlled as a dummy variable.

Table 1: Definition and Description of Main Variables

Variables	Name	Description
Explained variable	ΔBeta	Beta difference before and after the study period
Explanatory variables	SY	The total goodwill divided by the total assets of the company
Control variables	Size	The natural logarithm of the company's total assets at the end of the year
	TobinQ	Market value of total capital/total assets at the end of the period
	LEV	The company's total liabilities divided by its total assets
	ROA	The ratio of net profit to total average assets

4.3 Research Model

Finally, this paper USES the following to test whether M&A goodwill affects stock price volatility:

$$\Delta Beta=\alpha+\beta_1 SY+\beta_2*Controls$$

4.4 The Empirical Results

Table 2: A regression of goodwill to stock price volatility

Variables	Coefficient	t-value	P-value
SY	0.3183	2.18	0.029**
Size	0.0239	3.34	0.012**
TobinQ	0.0139	6.23	0.001**
LEV	0.0284	2.35	0.024**
ROA	0.0325	3.17	0.018**
Year	Control	Control	Control

PS:*、**、*** which means the significance levels of 10%, 5%, and 1%.

Goodwill is shown in table 1 results exacerbate share price volatility, the regression results in table 2 is Δ Beta as the explained variable, the goodwill of regression coefficient is 0.3183, and are at 5% significant level. In terms of economic meaning, when goodwill increases by one standard deviation, the BETA difference of listed enterprises before and after the research period will increase by 0.3183. This indicates that the greater the goodwill of the enterprise's M&A, the greater the volatility of its stock price will be in the future.

5. Conclusion and Enlightenment

5.1 Conclusion

With the rapid development of M&A market, more and more listed companies choose M&A as an extension growth mode. In view of this phenomenon, based on the empirical evidence of Chinese listed companies and taking goodwill as the annual proxy index of corporate M&A, this paper studies the economic consequences of corporate M&A causing large fluctuations in stock prices and discusses its internal mechanism. Research shows that goodwill exacerbates stock price volatility, and the higher the goodwill, the greater the stock price volatility. The explanation of this paper is that investors overreact to mergers and acquisitions, leading to the stock price accumulation of a certain degree of bubble. When the performance declines, investors realize that the stock price is overvalued, and then the bubble cannot continue and the stock price fluctuates greatly. The empirical research of this paper also verifies this point of view.

5.2 Implications and Suggestions

(1) Improve asset pricing efficiency and restrain asset price bubbles. This paper finds that investors will overreact to mergers and acquisitions, which will lead to large fluctuations in stock prices, indicating that the pricing efficiency of China's capital market still needs to be improved. However, this paper also finds that there is a significant relationship between whether the stock price fluctuates significantly after the merger and acquisition and whether the company's performance declines, which indicates that the stock price performance is closely related to the intrinsic fundamental value of the company, and the market can make a roughly accurate judgment of the company's value.

(2) Listed companies should pay attention to the positive role of optimizing resource allocation in the M&A market, rather than using M&A as a capital operation means to boost stock prices. It is found in this paper that the stock price rises significantly after the merger and acquisition, and the scale of management reduction of companies with high goodwill is significantly higher than that of companies with low or no goodwill. Although there is no evidence that the rise in stock prices after M&A is intentional on the part of the management, there is no denying that the management took advantage of the overreaction of investors to M&A to achieve the high level reduction and wealth transfer.

(3) The regulatory layer should further improve the relevant procedures and rules of M&A, so as to promote the healthy development of M&A and restructuring market. Although no clear evidence has been presented, this phenomenon may be related to the pricing rules of M&A of listed companies and the lock-up period of equity financing. Listed companies usually use private placement as the financing method in mergers and acquisitions. The characteristics of this financing method are that the pricing date precedes the implementation date of mergers and acquisitions and the release date of new shares. Once the subscription price of the fund supplier is determined, the relevant stakeholders will have the incentive to stimulate the stock price to rise in various ways, and some investors may also regard the additional price as a "guaranteed" price and aggravate the risk behaviors in the stock trading.

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