

M&a Market Performance from The Perspective of Performance Commitment

-- Taking CDXJ's Acquisition of XiangJiang Technology as an Example

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Abstract: In recent years, under the influence of the epidemic environment, the growth rate of the total output value of the construction industry and the IDC industry has gradually declined. M&a is an important means to realize the transformation and upgrading of enterprises and integrate high-quality resources. In M&A cases, there are many cases of signing performance commitments, which shows the confidence of the target party and can appropriately avoid the risks of the M&A party. By analyzing the case of Shanghai CDXJ Digital Technology Co.,LTD.'s acquisition of Xiangjiang Science and Technology Ltd., this paper uses the event study method and Tobin's Q value method to discuss the changes in the market performance of the acquirer under the condition of signing performance commitments, and draws the following conclusions: In terms of short-term market performance, signing performance commitments and releasing announcements upon completion of performance commitments will release positive signals to the market, which will have a positive impact on the short-term market performance of the acquirer. In terms of long-term market performance, investors are optimistic about the development of enterprises during the performance commitment period, but after the expiration of the performance of enterprises, investors have doubts about the development of enterprises, long-term market performance is poor, showing a downward trend.

Keywords: Mergers and Acquisitions(M&A); Performance Commitment; Market Performance.

1. Industry Situation of Both Sides of The Merger

The main subsidiary CDXJ was named Shanghai City Construction Co., Ltd. before the merger, and its main industry was construction, while the target party Xiangjiang Science and Technology Ltd. was in the IDC industry before the merger. After the merger and acquisition, the industry in which CDXJ is located has been refined into subdivided industries under the construction industry - foundation and basic engineering industry and IDC industry. Since the foundation and basic engineering industry still belongs to the construction industry, and the foundation and basic engineering industry is too detailed, it is difficult to query relevant data, so this paper adopts the form of analysis of the construction industry to reflect the development of the foundation and basic engineering industry. Next, this paper will analyze the status quo of the construction industry and IDC industry.

1.1. Construction industry

One of the industries in which CDXJ operates is construction. During the "13th Five-Year Plan" period, the reform and development of China's construction industry has achieved remarkable results, accounting for more than 6.9% of GDP. The construction industry has played a pillar role in China's national economy for many years, and has made important contributions to promoting social and economic growth, alleviating the pressure on social employment, promoting the construction of new urbanization, and ensuring and improving people's lives. The real estate industry is the main application field of the construction industry, so the development of the real estate industry is closely related to

the development of the construction industry. The following is the growth of the total output value of the construction industry in China from 2005 to 2021 and the total operating income of the real estate industry.

As can be seen from the two figures, the development trend of China's construction industry and real estate industry has slowed down in recent years, and the growth trend is similar. The total output value of the construction industry has decreased to less than 10% since 2015, while the growth rate of the real estate industry's operating income has also declined sharply since 2014. By 2021, the year-on-year growth rate of operating income has only reached 5%. Under the policy background of "three red lines deleveraging", the real estate industry is currently in a period of structural transformation, and the overall industry is in a stage of consolidation and adjustment, reflecting that the future development of the upstream construction industry is not optimistic, and the construction industry is in urgent need of transformation and upgrading; The "14th Five-Year Plan" construction industry development plan proposes: to promote the high-quality development of the construction industry as the theme, to promote the coordinated development of intelligent construction and new building industrialization as the driving force, accelerate the transformation and upgrading of the construction industry, achieve green and low-carbon development, and effectively improve the quality and efficiency of development. In the future, the market demand for the construction industry will also change, mainly reflected in the increased demand for green buildings. The construction industry will develop in the direction of more environmentally friendly and sustainable green buildings, which will make the demand for green construction technology and green building materials and products increase rapidly; Second, the demand for digital, information

and intelligent buildings increases, and the future demand for digital, intelligent, easy and controllable, information technology in the construction field will become more and more intense; In order to adapt to the new changes and new

trends, the future of the building will be more multi-functional direction, a variety of creative, novel design, functional diversification of the building will become the new darling of the market.

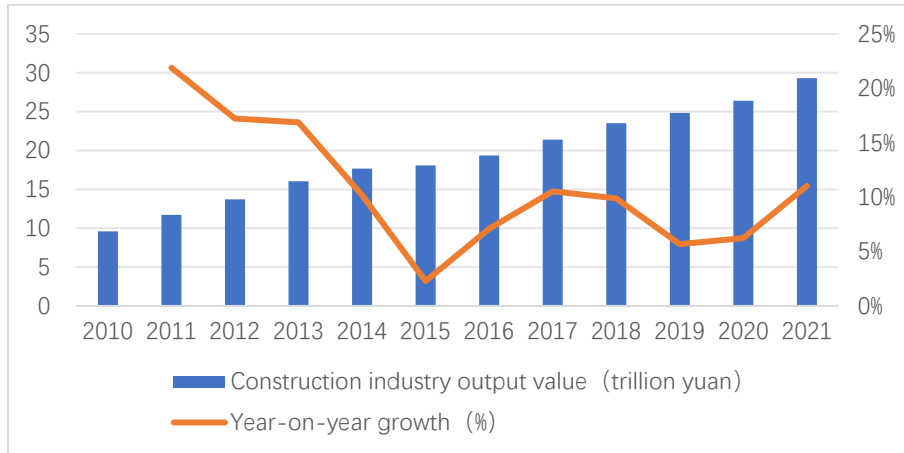


Figure 1. Growth of the total output value of China's construction industry from 2010 to 2021

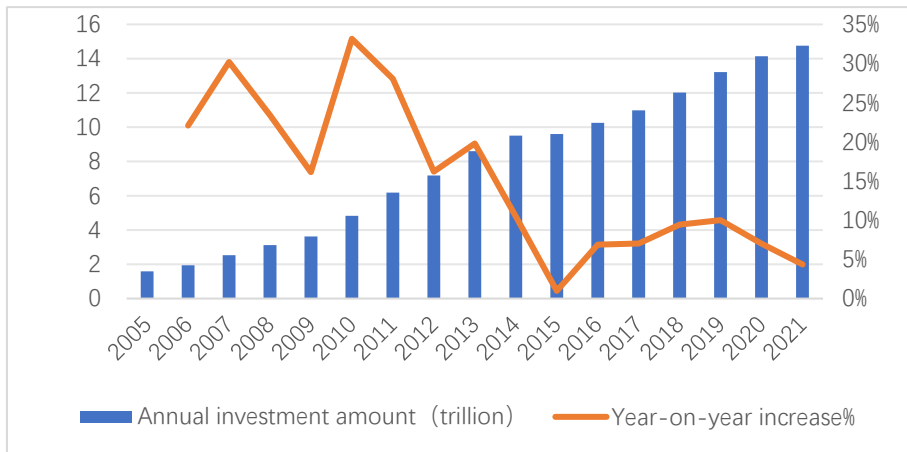


Figure 2. Total operating income of China's real estate industry from 2005 to 2021

1.2. IDC industry

IDC stands for Internet Data Center, also known as Internet data center, is a combination of traditional data centers and the Internet. With the accelerated transformation of digital technologies such as artificial intelligence, cloud computing,

big data, Internet of Things, and 5G, the digital economy has become the main engine of global economic growth, and the digital economy has promoted the sustained rapid growth of data centers. The following chart shows the market size growth of China's IDC industry from 2015 to 2022.

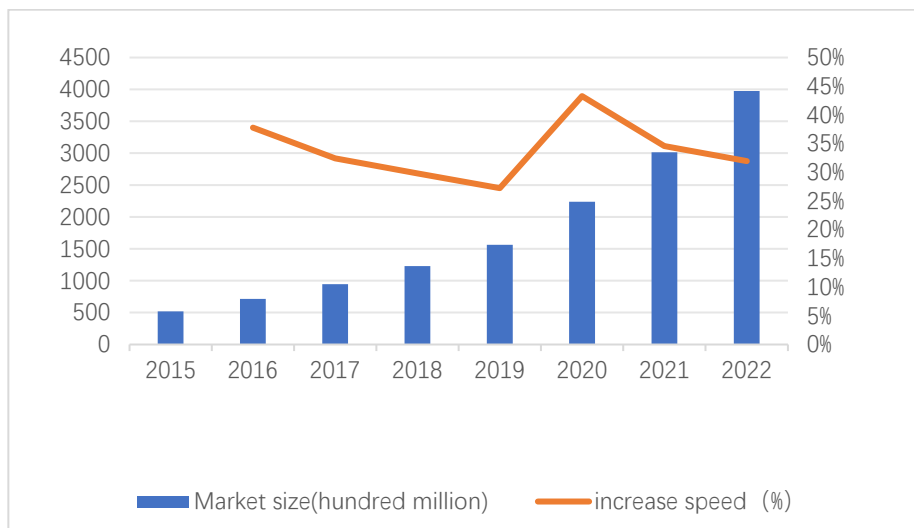


Figure 3. Market size growth of China's IDC industry from 2015 to 2022

In recent years, the market size of the IDC industry has expanded rapidly, and by 2022, the overall market size of China's IDC business has reached 397.56 billion yuan, an increase of 31.96%. Compared with 2021, the macroeconomic downturn in 2022, the business expansion and growth of industry customers are limited, and the growth rate of IDC demand is declining, resulting in a slowdown in the overall market size. It is expected that in the next few years, China's IDC market will gradually pick up, driven by industry application demand, the market has good prospects for development. The main changes are as follows: First, although the consumer Internet is affected by the number of users and policies, the demand for business development and data accumulation is still increasing steadily. Meanwhile, the application of technologies such as AI big data drives the demand for computing power, and innovative businesses such as live streaming e-commerce and metacom will also bring new demand growth to the IDC industry. Second, in terms of public cloud industry demand, with the optimization of public cloud industry customer structure and the emergence of more enterprises serving traditional industries, the public cloud market is still expected to develop rapidly in the future; Third: in traditional industries, its digital transformation is accelerating, emerging technologies such as 5G and AI are applied to traditional fields, and business scenarios such as financial technology, smart government affairs, smart medical treatment, and smart manufacturing are applied on a scale. The demand for data centers in traditional industries will be gradually released in the next few years, and the development trend of IDC industry is improving.

2. Introduction of the Merger Parties

2.1. Acquirer profile

Shanghai Shanghai CDXJ Digital Technology Co.,LTD. Data Technology Co., LTD. (hereinafter referred to as: Shanghai CDXJ Digital Technology Co.,LTD.), founded in 1997, registered address is No. 518 Lane Hengyong Road, Jiading District, Shanghai 502-1, listed on the Shanghai Stock Exchange in October 2016, stock code: 603887. The main business of the group includes cloud infrastructure industry, cloud data service industry and geotechnical engineering industry, and the multi-wheel drive development of the three major sector.

According to the annual report disclosed by the company, the total assets of the company from 2018 to 2022 are 1.684 billion yuan, 6.346 billion yuan, 8.586 billion yuan, 7.711 billion yuan and 8.465 billion yuan respectively. The net profit from 2018 to 2022 was 72 million yuan, 331 million yuan, 393 million yuan, -605 million yuan and 0.03 million yuan, respectively. It can be seen that the merger and acquisition greatly improved corporate performance in the short term, but in 2021, that is, after the performance commitment expires, the net profit showed a cliff-like decline. From the perspective of industry classification, after the merger and acquisition, IDC business gradually became the main business of CDXJ, from 2019 to 2022, the operating income of IDC business increased from 49.6% to 65.4%, and the operating income of construction industry decreased from 49.6% to 34.5%. It can be speculated that IDC business will become the core business of CDXJ in the future.

Table 1. Main financial indicators of CDXJ from 2017 to 2022 (unit: 100 million)

index	2017	2018	2019	2020	2021	2022
total assets	12.3	16.8	63.5	85.9	77.1	84.7
operation revenue	8.1	12.6	29.2	39.3	29.1	26.8
net profits	0.7	0.7	3.3	3.9	-6.1	0

Table 2. Revenue of various types of business and their proportion in Shanghai CDXJ Digital Technology Co.,LTD. from 2019 to 2022 (Unit: 10,000)

index	2019		2020		2021		2022	
construction industry	144554	49.6%	182002	46.4%	153618	53.1%	92422	34.5%
service industry	338	0.1%	533	0.1%	443	0.2%	298	0.1%
IDC service	146635	50.3%	209807	53.5%	135376	46.8%	175026	65.4%

2.2. Subject profile

The subject of the transaction, named Xiangjiang Science and Technology Ltd. Co., LTD. (referred to as: Xiangjiang Science and Technology Ltd.), was established in July 2006 in Xiangjiang, Suzhou, with a registered capital of 133,513,300 yuan. The company covers an area of more than 300 mu and employs more than 600 people. It is a domestic cloud infrastructure service provider, headquartered in Zhenjiang New District, a national development zone. Its main business is positioned as an overall solution service provider for the data center industry, with products covering intelligent electrical, access network, green energy saving and many other fields, mainly engaged in the production and sales of IDC equipment, IDC system integration, IDC data center operation management and value-added services, and is a long-term partner of the three major operators and Baidu, Alibaba, Jingdong and other enterprises. Over the years, the

company has been committed to providing green power and overall solutions for IDC. After more than ten years of unremitting struggle, it has developed into a comprehensive enterprise with planning and design, system integration and investment operation in the field of IDC room. The sales model of Xiangjiang Science and Technology Ltd. Co., Ltd. is domestic sales. The total assets of the company from January to June of 2016, 2017 and 2018 are 1.432 billion yuan, 1.676 billion yuan and 1.855 billion yuan respectively, and the operating income is 490 million yuan, 891 million yuan and 499 million yuan respectively. In 2018, the company realized asset reorganization with the main board listed company (City), relying on strong capital strength, quickly opened up the whole industry chain of IDC industry from the equipment end to the operation end, providing services and implementation operations from information infrastructure to digital city overall solution, further enhancing the systematic

and comprehensive competitive strength of the IDC industry chain upstream and downstream. Become a well-known

enterprise in IDC industry.

Table 3. Financial situation of Xiangjiang Science and Technology Ltd. from 2016 to June 2018 (unit: 100 million yuan)

	December 31, 2016	December 31, 2017	June 30, 2018
total assets	14.32	16.76	18.55
Total liabilities	9.62	11.25	12.26
gross revenue	4.90	8.91	4.99
net profits	0.36	0.81	0.78

3. Merger and Acquisition Process

3.1. Trading scheme

On April 24, 2018, CDXJ held the 17th meeting of the second board of directors to review and approve the merger and reorganization plan for the acquisition of Xiangjiang Science and Technology Ltd., and issued the relevant documents such as the Plan to issue shares and Pay cash to purchase Assets and raise matching funds and related Transactions on April 25, 2018, which pointed out that: Shanghai CDXJ Digital Technology Co.,LTD. intends to purchase 100% shares of Xiangjiang Science and Technology Ltd. held by 15 counterparties such as Sha Zhengyong and Xie Xiaodong by issuing shares and paying cash. The transaction price is initially determined to be 2.333 billion yuan, of which the share consideration is 1.951 billion yuan (the number of issued shares is 113,090894 shares, and the issue price per share is 17.25 yuan). The type of shares is restricted to tradable shares), and the cash consideration is 382 million yuan. In the audited consolidated statement, the owner's equity attributable to the parent company of Xiangjiang Science and Technology Ltd. is 562 million yuan, and the appraised value of the underlying assets is 2.333 billion yuan, with a total appraised value of 1.771 billion yuan, and the appraised value rate of 314.78%.

3.2. Performance commitment content

According to the "Profit Compensation Agreement" signed by CDXJ and Xiangjiang Science and Technology Ltd., the agreement stipulates that the actual net profit attributable to the shareholders of the parent company after deducting non-recurring gains and losses achieved by Xiangjiang Science and Technology Ltd. in 2018, 2019 and 2020 shall be no less than RMB 180 million, RMB 248 million and RMB 272 million respectively. If the commitment period expires and the commitment target is not completed, the target company shall pay cash and stock compensation to the acquirer; If the

total net profit achieved by the target company exceeds the promised amount, the acquirer will reward the main management personnel and core technical personnel of the target company. The formula for calculating the amount of compensation in cash and shares and the amount of award after overcompletion is as follows:

① Uncompleted amount of compensation payable for the current period = (cumulative committed net profit as at the end of the current period - cumulative actual net profit as at the end of the current period) ÷ Total committed net profit for each year of the performance commitment period × total transaction amount of Cityland shares to purchase the underlying assets - accumulated compensated amount as at the end of the current period;

② Number of uncompleted shares to be compensated for the current period = amount to be compensated for the current period ÷ the issue price of shares under the purchase of assets issued by the listed company in this transaction;

③ Excess reward amount = (Total net profit accumulated by Xiangjiang Science and Technology Ltd. during the performance commitment period - cumulative net profit committed during the performance commitment period) × 50%.

3.3. Performance performance

According to the announcement on the completion of performance commitments issued by CDXJ, the net profit attributable to the owner of the parent company of Xiangjiang Science and Technology Ltd. in 2018, 2019 and 2020 after deducting non-recurring gains and losses was 182,668,200 yuan, 259,258,900 yuan and 275,849,400 yuan respectively. The performance commitment completion ratio is 101.42%, the performance commitment is completed accurately, and the performance commitment period ends here without performance compensation. As shown in the table, the setting and realization of the performance commitment of Xiangjiang Science and Technology Ltd.

Table 4. Xiangjiang Science and Technology Ltd. Performance commitments and achievements

	2018	2019	2020	accumulative total
Performance commitment amount (ten thousand Yuan)	18000.0	24800.0	27200.0	70000.0
Performance commitment Amount (ten thousand yuan)	18266.8	25925.9	27584.9	71777.7
Balance of performance commitments (ten thousand yuan)	266.8	1125.9	384.9	1777.7
Performance commitment achievement rate %	101.5%	104.5%	101.4%	102.5%

4. Performance Analysis of M&A in CDXJ under Performance Commitment

4.1. Short-term market performance analysis under performance commitment

This paper adopts the event analysis method to study the short-term market performance of Shanghai CDXJ Digital Technology Co.,LTD.. Event analysis is a common method to study the market reaction to corporate mergers and acquisitions in the short term. This method mainly evaluates the short-term performance of a company by studying the impact of an event on the common stock price of an enterprise. In this paper, two time nodes of performance commitment signing and performance commitment expiration are determined as the event occurrence date. Then set the estimation period and the window period, and use the relationship data between the market rate of return and the rate of return of the city to calculate the expected rate of return of the city if there is no performance commitment event. Then in the window period, the actual rate of return of the CDXJ minus the expected rate of return, to calculate the excess rate of return AR, AR sum to calculate the cumulative excess rate of return CAR. Finally, the changing trend chart of AR and CAR is drawn to visually show the market's response to performance commitment events, so as to judge the impact of performance commitment on M&A performance.

4.1.1. Market performance at the time of signing the performance pledge

The shares of the listed company were suspended from trading on January 25, 2018, and the suspension announcement of major matters was issued on January 26, 2018, in which the information of major asset restructuring was disclosed and the restructuring signal was released to the outside world. During the suspension period, the company issued several major asset restructuring suspension progress announcements. The 17th meeting of the second session of the Board of Directors of the listed company held on April 24,

2018 reviewed and approved the restructuring plan and related proposals; On April 25, 2018, relevant documents such as the Plan to issue Shares and Pay cash to Purchase Assets and raise Matching Funds and Related Transactions were released, which explained the relevant matters of performance commitment. On May 21, 2018, the listed company coordinated various intermediaries and relevant parties to complete the reply to the inquiry letter of the Shanghai Stock Exchange, and resumed trading on May 22, 2018. Therefore, this paper takes May 22, 2018 as the date of the event; The 10 trading days before the suspension and the 10 trading days after the resumption shall be the window period of the event; The 11th trading day before trading suspension to the 171st trading day before trading suspension is selected as the estimate period, that is, a total of 160 trading days [-161, -11] are selected as the estimate period for observation and calculation.

First of all, we use Juchao Information network to export the data of the estimated period and window period of urban Xiangjiang, and calculate the actual daily rate of return of individual stocks of Urban Xiangjiang through $R_{it} = (P_t - P_{t-1}) / P_{t-1}$, which is also the normal rate of return not affected by the performance commitment of M&A. Then the data of the Shenzhen component index in the estimation period and the window period are derived, and the actual daily return rate of the Shenzhen component index is calculated through $R_{mt} = (\text{closing index of the day} - \text{Closing index of the previous day}) / \text{closing index of the previous day}$.

After obtaining the daily real rate of return of individual stocks and the daily real rate of return of the market, the market model is adopted to calculate the expected rate of return of Shanghai CDXJ Digital Technology Co.,LTD.. In this paper, 160 data samples in the estimation period are analyzed by linear regression through excel, and the regression parameters of the market model are obtained. The formula for the expected rate of return of Shanghai CDXJ Digital Technology Co.,LTD. is as follows:

$R_{it} = 1.3229R_{mt} - 0.0031$, Where the beta value is 1.3229, Intercept is -0.0031, The linear diagram is as follows:

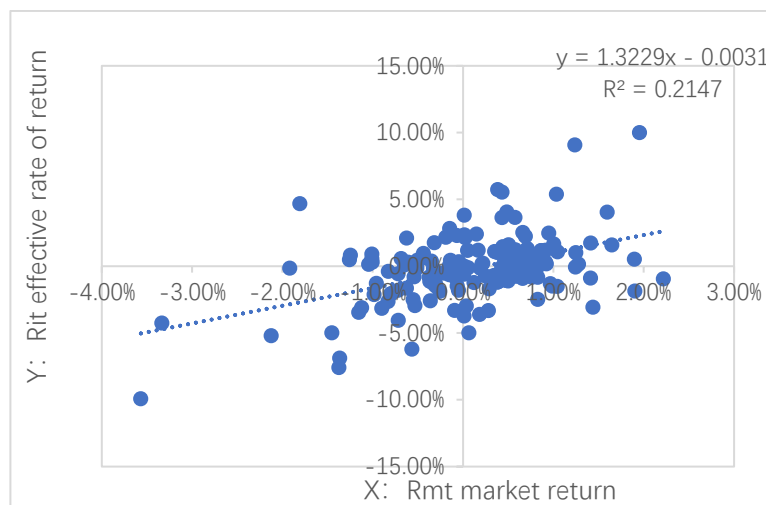


Figure 3. The relationship between individual stock return rate and market return rate

Finally, the daily actual market return R_{mt} during the window period is put into the formula $R_{it} = 1.3229R_{mt} - 0.0031$ to estimate the expected return R_{it}' when no M&A performance commitments occur during the window period.

The formula $AR_{it} = R_{it} - R_{it}'$ and $CAR = \sum AR_{it}$ were used to subtract the actual rate of return R_{it} from the expected rate of return R_{it}' to calculate the excess rate of return AR_{it} of CDXJ during the window period. After summarizing AR_{it} , the

cumulative excess rate of return CAR was obtained, as shown in the figure below:

Table 5. AR it and CAR calculation data table when performance commitment is signed

	Rit	Rmt	Rit'	AR it	CAR
-10	2.22%	0.24%	0.00%	1.98%	2.21%
-9	0.38%	-0.02%	-0.34%	0.40%	2.61%
-8	-2.80%	-1.35%	-2.09%	-1.45%	1.16%
-7	7.95%	0.70%	0.62%	7.25%	8.40%
-6	0.79%	-0.73%	-1.27%	1.52%	9.93%
-5	-0.39%	0.14%	-0.12%	-0.53%	9.39%
-4	0.00%	-0.21%	-0.59%	0.21%	9.60%
-3	3.81%	1.92%	2.23%	1.89%	11.49%
-2	1.14%	0.37%	0.17%	0.78%	12.27%
-1	1.47%	0.45%	0.29%	1.02%	13.29%
0	9.99%	0.00%	-0.31%	9.99%	23.28%
1	-5.80%	-1.25%	-1.96%	-4.55%	18.73%
2	-5.99%	-0.63%	-1.14%	-5.36%	13.37%
3	-1.42%	-1.10%	-1.76%	-0.32%	13.04%
4	2.60%	0.17%	-0.09%	2.44%	15.48%
5	-0.92%	-1.11%	-1.78%	0.19%	15.67%
6	-6.60%	-2.35%	-3.42%	-4.25%	11.41%
7	3.67%	1.88%	2.18%	1.79%	13.20%
8	-1.61%	-1.23%	-1.93%	-0.38%	12.82%
9	1.92%	0.34%	0.14%	1.58%	14.40%
10	1.00%	1.78%	2.04%	-0.78%	13.62%

According to the above data table, excel is used to make the data of AR it and CAR into a trend chart, which can more intuitively reflect the impact of the announcement of M&A

performance commitment on the M&A performance of Shanghai CDXJ Digital Technology Co.,LTD.

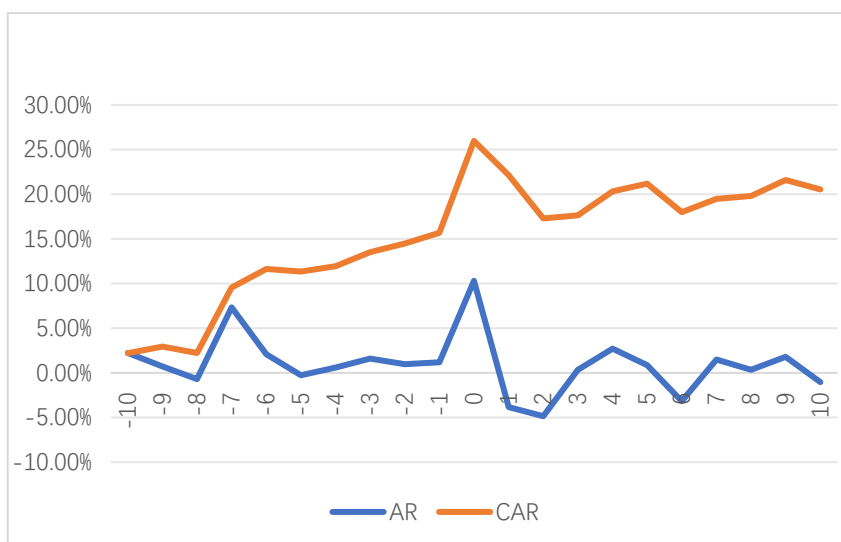


Figure 4. Change trend of daily excess rate of return and cumulative excess rate of return of CDXJ during the window period of resumption day

As can be seen from the figure above, although the excess rate of return of Shanghai CDXJ Digital Technology Co.,LTD. fluctuates during the event window of 21 days, the cumulative excess rate of return has been showing a slow rising trend. It can be seen that the market has always been optimistic about the development of CDXJ, the author analyzed that this is because CDXJ belongs to the industry for foundation and basic engineering services, the business field mainly involves real estate, municipal engineering, etc., and in 2018, China's real estate industry is in a period of rapid expansion, so the market response is better.

In the overall trend of a slow rise in cumulative excess rate of return, there was a significant increase in volatility on the date of the event (resumption date). It can be seen that on the date of the event (resumption date), the excess rate of return of CDXJ increased by 9.12%, and before the resumption,

CDXJ issued a merger and acquisition transaction plan with performance commitment terms on April 25, 2018. It can be seen that this event delivered good news to the market, and the capital market was optimistic about the merger with performance commitment terms, and the stock price rose rapidly in the short term after the resumption, making the excess return rate of Shanghai CDXJ Digital Technology Co.,LTD. significantly increased on the event day. To sum up, from the perspective of short-term market performance, mergers and acquisitions that have signed performance commitments have brought positive impact on the M&A performance of Shanghai CDXJ Digital Technology Co.,LTD.

4.1.2. Market performance at the end of the performance commitment period

On March 31, 2021, CDXJ released the Announcement of

Shanghai CDXJ Data Technology Co., Ltd. on the Realization of the 2020 Annual Performance Commitment of CDXJ Data Technology Co., LTD., which showed that the net profit attributable to the shareholders of the parent company in 2020 after deducting non-recurring gains and losses was 275.8494 million yuan.

The proportion of performance commitments fulfilled was 101.42%. At this time, the three-year performance commitment period has expired. From 2018 to 2020, all performance commitments have reached the standard, 101.48%, 104.54% and 101.42%, respectively. The average

completion rate is 102.48%, and the performance commitments have been overfulfilled. Since this information was received by the market on March 31, 2021, we use that date as the date of the event. The first 10 trading days to the last 10 trading days of the event date are taken as the window period, the first 11 trading days to the first 171 trading days of the event date is taken as the estimate period, and the excess return AR it and the cumulative excess return CAR are calculated using the event analysis method, and the calculation method is the same as above. The following results are obtained:

Table 6. AR it and CAR calculation data table at the end of the performance commitment period

	Rit	Rmt	Rit'	AR it	CAR
-10	-0.27%	1.22%	0.36%	-0.63%	-0.63%
-9	-2.29%	1.12%	0.29%	-2.58%	-3.21%
-8	0.76%	-2.56%	-1.93%	2.69%	-0.52%
-7	1.30%	1.14%	0.31%	0.99%	0.47%
-6	-1.42%	-1.12%	-1.06%	-0.36%	0.11%
-5	0.62%	-1.47%	-1.27%	1.88%	1.99%
-4	-0.14%	0.10%	-0.32%	0.18%	2.17%
-3	-0.20%	2.60%	1.19%	-1.39%	0.78%
-2	-2.12%	0.01%	-0.37%	-1.74%	-0.97%
-1	-0.42%	0.85%	0.13%	-0.55%	-1.52%
0	2.80%	-0.79%	-0.86%	3.66%	2.14%
1	4.29%	1.46%	0.50%	3.79%	5.93%
2	3.72%	1.02%	0.24%	3.48%	9.41%
3	-1.01%	-0.28%	-0.55%	-0.46%	8.95%
4	1.59%	-0.74%	-0.83%	2.42%	11.37%
5	-2.32%	0.08%	-0.33%	-1.98%	9.39%
6	-0.83%	-1.26%	-1.14%	0.31%	9.70%
7	-2.52%	-2.30%	-1.77%	-0.75%	8.95%
8	-1.06%	0.24%	-0.23%	-0.83%	8.12%
9	0.60%	1.55%	0.56%	0.05%	8.17%
10	-2.33%	-0.42%	-0.63%	-1.70%	6.47%

According to the above data table, excel is used to make the data of AR it and CAR into a trend chart, which can more intuitively reflect the impact of the announcement of M&A

performance commitment on the M&A performance of Shanghai CDXJ Digital Technology Co.,LTD.

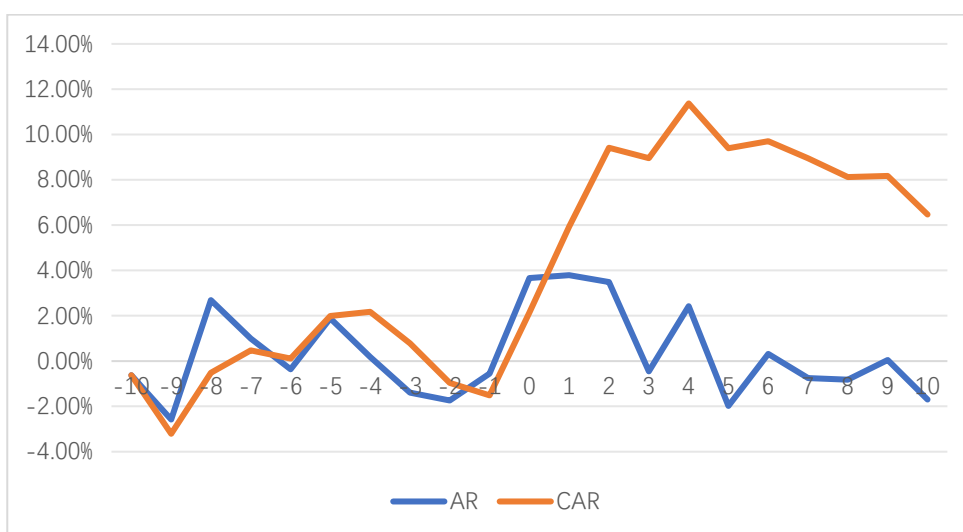


Figure 5. Change trend of CDXJ daily excess rate of return and cumulative excess rate of return at the end of the performance commitment period

As can be seen from the figure above, in the 10 days before the announcement of the completion of performance commitments, the excess rate of return and cumulative excess rate of return of Shanghai CDXJ Digital Technology Co.,LTD.

showed a certain fluctuation around 0%, and the fluctuation range was not more than 2.7%, which was very small and the trend chart tended to be flat, indicating that there was no significant change in the stock price of Shanghai CDXJ

Digital Technology Co.,LTD. before the announcement of the completion of performance commitments. However, in just five days after the event, the cumulative excess return rose to 11.37%, showing a clear upward trend. It shows that this event has brought a certain degree of excess returns to investors, and the completion of performance commitments has conveyed a positive signal to investors, and investors have obvious reactions, and are generally more optimistic. Therefore, when the term of performance commitment expires, the over-fulfillment of performance commitment has a positive impact on the short-term market performance of Shanghai CDXJ Digital Technology Co.,LTD.

4.2. Long-term market performance analysis under performance commitment

Tobin's Q is a measure of the current value of a firm by the ratio of its market value to its replacement cost of capital. Compared with financial indicators, which are the analysis of historical data, Tobin's Q value is more forward-looking, showing a significant positive correlation with the performance of listed companies, and is often used to evaluate the long-term performance of enterprises in domestic and foreign literatures. According to Tobin's Q value theory, if Q value is greater than 1, it indicates that the price of capital per share is greater than the actual cost of capital, and the investment is effective. If the Q value is <1, it indicates that the price of capital per share is less than the actual cost of capital, which can be inferred that the market is not optimistic

about the development of the company, and investors will reduce investment. This paper uses the analysis of Tobin's Q value of each year to judge the long-term market performance of enterprises.

4.2.1. Tobin Q value parameter selection

Tobin's Q value is calculated by the following formula: firm market value/firm replacement cost of capital. This paper uses the method adopted by Chen Haifang (2006) for reference to calculate Q value, and the market value is expressed as the sum of the total liabilities of the company + the market value of the tradable shares + the market value of the non-tradable shares. The replacement cost of capital is difficult to calculate in practice, and the total assets are used as an approximate substitute. The specific formula is as follows:

$$\text{Tobin's Q} = (\text{DEBT} + \text{PS} + \text{MVE}) / \text{TA}$$

DEBT—Total liabilities (total assets - shareholders' equity);

PS—Value of Company's non-tradable shares (PS= Number of non-tradable shares * Net asset value per share).

MVE—Market value of company's outstanding shares (MVE= Number of outstanding shares * Stock price 25);

TA—Book value of total assets of the company;

4.2.2. Results of Tobin's Q value analysis

Since Shanghai CDXJ Digital Technology Co.,LTD. made performance commitments from 2018 to 2020, this paper chose the middle of 2017 to 2023 for the analysis of Tobin's Q value. The calculation results are as follows:

Table 7. CDXJ Calculation table of Tobin's Q values for 2017-2023

	MVE	PS	DEBT	TA	Tobin's Q value
2017/12/30	146097.7	33097.7	47658.0	123066.0	1.84
2018/12/30	116319.1	36536.9	82343.3	168384.9	1.40
2019/12/30	350344.9	156842.0	302927.7	634620.6	1.28
2020/12/30	503330.2	96061.4	302927.7	634620.6	1.42
2021/12/30	287415.8	73245.3	302927.7	634620.6	1.05
2022/12/30	309668.3	0.0	302927.7	634620.6	0.97
2023/06/30	393.1	0.0	473558.7	815871.1	0.58

From the data calculated in the above table, we can see that the Tobin Q value of Shanghai CDXJ Digital Technology Co.,LTD. from 2017 to 2020 is 1.84, 1.4, 1.28 and 1.42 respectively, and the four values are much higher than 1, indicating that the value generated by the enterprise exceeds the cost of producing these assets before and within the performance commitment period, and the enterprise is optimistic by investors.

In 2021, the Q value is close to 1, and after 2022, the Q value is less than 1, and it shows a downward trend year by year. The year 2021 is the time for the expiration of the performance commitment, and since then Tobin's Q value has declined year by year, which indicates that the market is skeptical of the development of the city after the expiration of the performance commitment. The reason for this phenomenon is that the performance of the City after the expiration of the promise has changed dramatically. Many aspects of the data have changed, there is suspicion that the company has carried out earnings management during the commitment period, the value generated by the company is lower than the cost of producing these assets, and investors have doubts about the future development of the city.

5. Conclusion and Suggestion

With the development of capital market, the number of M&A transactions has increased rapidly in recent years, and performance commitment has become one of the ways for M&A parties to avoid M&A risks. In the case of this paper, CDXJ originally belongs to the construction industry, and Xiangjiang Science and Technology Ltd. belongs to the IDC industry. This is a cross-border merger and acquisition, through which the merger and acquisition party can quickly break the industry barriers, enter the IDC industry, and realize the industry upgrading and transformation. The author applies the event research method and Tobin's Q value analysis method to study and analyze the long-term and short-term market performance of the acquirer. It can be seen that in terms of short-term market performance, the stock price of the acquirer fluctuates in an upward trend during the two time nodes of signing and fulfilling performance commitments, and the accumulated and excess cumulative return rate increases to a certain extent. Therefore, performance commitment has a positive impact on the short-term performance of the acquirer. However, in terms of long-term performance, there are different performances. During the performance commitment period, the acquirer's Tobin Q

value is all greater than 1, and it shows a downward trend after the expiration. Until June 30, 2023, Tobin Q value drops to 0.58, which can be seen that market investors gradually lose confidence in enterprises. According to the annual report disclosed by CDXJ, the annual net profit from 2018 to 2022 was 72 million yuan, 331 million yuan, 393 million yuan, -605 million yuan, and 0.03 million yuan, which is an important reason for the decline in long-term market performance. Through the above case analysis, the author puts forward the following suggestions.

First: reasonable valuation of the underlying assets and reasonable setting of performance commitments. In the audited consolidated statement, the owner's equity attributable to the parent company of Xiangjiang Science and Technology Ltd. is 562 million yuan, and the appraised value of the underlying assets is 2.333 billion yuan, with a total appraised value of 1.771 billion yuan, and the appraised value rate is as high as 314.78%. Excessive valuation of the underlying assets will generate a large amount of goodwill, while excessive performance commitments will cause the management of the underlying party to carry out earnings management in order to avoid punishment. After the end of the performance commitment period, the earnings management behavior will gradually relax, and the financial data will also decline, followed by goodwill impairment, resulting in a decline in market performance. Therefore, both parties should reasonably value the underlying assets and set appropriate performance commitments during the merger and acquisition.

Second: Implement diversified profit assessment indicators. In this transaction case, the performance commitment assessment index is a single profit assessment index, and the net profit assessed by the single profit assessment index is relatively easy to be manipulated. If other financial and non-financial indicators are added to the assessment index, such as: Accounts receivable indicators, R & D investment indicators, core technology indicators, key customer indicators, etc., can be more comprehensive and objective to assess the performance of the target party. Third: strengthen post-merger integration. In the process of merger and acquisition, performance evaluation is not only in the performance commitment period, but in the long term. In the process of late integration, enterprises should strengthen

corresponding communication and promote mutual understanding and trust, so as to reach strategic agreement. The enterprise shall strengthen the supervision over the operation and management of the target enterprise in order to detect and stop the short-sighted behavior of the target party in a timely manner.

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