



Comparable Analysis in Company Valuation: A case study of BYD's acquisition of Tianqi Lithium

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Abstract. This report performs an in-depth case study of the BYD takeover of Tianqi Lithium using Comparable Company Analysis (CCA) as the key tool for investigating the takeover. The report states specifically the process of CCA methodology from preparing to data gathering all the way to the derivation of the primary valuation multiples as well as how to utilize appropriate calculation methods. By selecting comparable companies such as Ganfeng Lithium and CATL with caution, the report gathers relevant information, makes accurate calculations, and performs an in-depth analysis. The results show that BYD's CCA-derived share price range is between 63.57 RMB and 148.40 RMB. Even though CCA boasts tremendous advantages, such as its convenience and ease of accessing relevant data, it also possesses certain major flaws. These are its vulnerability to changes in business models and its reliance on historical financial performance, which can limit its accuracy in certain cases. Strategically, BYD's takeover of Tianqi Lithium will be capable of generating enormous benefits, including ensuring a stable raw material supply, reducing costs, and promoting an optimal industrial chain structure. However, the takeover process is complex and multifaceted. There are numerous things to be analyzed and a comprehensive analysis with different tools of analysis needs to be conducted. This will enable BYD to make rational, science-driven decisions and become more competitive in the rapidly evolving new energy car industry.

Keywords: Comparable Company Analysis; Merger and Acquisition; Company Valuation; Electric Vehicle Industry; Strategic Synergy

1 Introduction

In the global automotive and energy industries, mergers and acquisitions are an important means for companies to gain competitive advantage. BYD's plan to acquire Tianqi Lithium has attracted much attention from all parties. As demand for electric vehicles continues to rise due to environmental and technological factors, lithium's role in battery production is becoming more critical, and the acquisition is expected to reshape the relevant market landscape. BYD values Tianqi Lithium's lithium reserves and battery technology, and the acquisition will ensure lithium supply, reduce costs, and strengthen its technological advantages [1].

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Comparable Company Analysis (CCA) is an important valuation method that is critical in such a critical acquisition process [2]. This is an important valuation method that evaluates the value of a target company by comparing its financial metrics with that of its industry peers. In this acquisition, CCA can estimate the fair value of Tianqi Lithium, assess the strategic fit of the two parties, and explore potential synergies. This report will provide an in-depth analysis of the acquisition using the CCA, examining the financial status, growth prospects and market positions of BYD, Tianqi Lithium and their comparable companies to reveal the value creation and strategic implications of the acquisition. This not only serves as a reference for investors and stakeholders in decision-making but also provides insight into M&A trends in the electric vehicle and lithium industries [3].

2 Methodology

Comparable Company Analysis (CCA), also known as the "relative valuation method", is a commonly used enterprise valuation method, which is mainly used to evaluate the value or equity value of a target company [4]. The fundamental concept involves assessing a target company's worth by juxtaposing the market worth of similar firms, akin in business, size, model, financial traits, etc., against pertinent financial metrics, premised on the belief that comparable assets possess equivalent value [5].

2.1 Preparation for CCA

The selection of comparable companies is mainly based on three aspects. In terms of business similarity, it is necessary to choose companies in the same industry and operating similar businesses as the target company; In terms of scale comparability, it is necessary to consider scale factors such as revenue, assets, and number of employees, so as to avoid enterprises with large scale gaps, so as to ensure that financial indicators are comparable; In terms of similarity of business environments, it is necessary to choose companies operating in the same or similar macro environment and industry competition pattern [2].

The data collected in CCA is mainly divided into two categories: financial data and market data. In terms of financial data, it is necessary to collect key financial indicators such as operating income, net profit, net assets, gross profit margin, net profit margin, etc. By looking at the annual reports of comparable companies and obtaining the operating income and net profit data of the past three years, we can effectively analyze their profitability trends and levels, and provide a reference for evaluating the profitability of target companies. In terms of market data, it mainly obtains data related to the market value of comparable companies, such as stock prices and market capitalization. For listed companies, stock prices can be obtained from securities trading platforms in real time, while market capitalization is calculated by multiplying the stock price by the total share capital, which can intuitively reflect the value performance of comparable companies in the market, thereby assisting in judging the market value of the target company.

In Comparable Company Analysis, two important valuation multiples are used. The first one is the P/E ratio, calculated as market capitalization divided by net profit, is a frequently employed multiple. It represents the ratio of market value to net profit and intuitively shows the price investors are willing to pay for each dollar of a company's net profit. The other multiple refers to the Enterprise Value Multiple (EV/EBITDA). In this report, enterprise value (EV) represents the total of market capitalization and net debt, while EBITDA denotes earnings prior to interest, taxes, depreciation, and amortization [6]. The enterprise value multiple is particularly useful as it fully considers a company's overall debt position, making it a better indicator of value for capital-intensive companies with significant debt financing.

2.2 The Comparable Company Analysis (CCA) Calculation Method

The Comparable Company Analysis (CCA) is a valuation method that involves several key steps. Firstly, a valuation multiple need to be chosen. This requires determining the key multiples for valuation, such as a P/E ratio and an enterprise value multiple, and selecting the industry median of a specific year as a reference for these multiples [4]. Additionally, there are two methods for determining the stock price. A method involves computing it using the price-to-earnings ratio (P/E) [7]. This is achieved through the calculation of earnings per share (EPS) data of the target company for the current year and multiplying it by the median P/E of the selected P/E, resulting in stock price 1.

$$\text{Price} = \text{Median PE ratio} \times \text{EPS} \quad (1)$$

The other way is to calculate the share price based on the Enterprise Value Multiple (EV/EBITDA). This involves obtaining the target company's EBITDA, multiplying the median of the selected enterprise value multiple by EBITDA to get the enterprise value.

$$\text{EV} = \text{EV} \div \text{EBITDA} \times \text{EBITDA} \quad (2)$$

Then, calculating the Market Cap

$$\text{MV} = \text{EV} - \text{Long Term \& Short Term Debt} + \text{Cash} \quad (3)$$

Finally, calculating the stock price 2

$$\text{Price} = \text{MV} \div \text{Number of shares outstanding} \quad (4)$$

So the stock price range is determined by calculating the stock price based on different valuation multiples, which gives the target company's CCA stock price range.

3 Analysis and Discussion

3.1 Select Comparable Companies

BYD is driven by new energy auto and diversified business power [1]. BYD business involves a chain of large industries such as auto-mobile manufacturing, battery R&D,

and auto electronics, as evident in its 2024 annual report. In the auto-mobile manufacturing industry, BYD has abundant product series such as traditional fuel cars, pure electric cars, and hybrid plug-in cars. To speak anecdotally, BYD new energy vehicle sales continue to expand through 2024 and has been ever more a hot item on the foreign and domestic market as well. BYD is capable in the R&D times of batteries to drive forward high-tech such as lithium iron phosphate batteries and blade batteries. Consequently, its brand influence in the new energy vehicle market has been elevated step by step, and its worldwide market share has risen step by step with better market rivalry and development prospects.

Tianqi Lithium mainly engaged in the mining and processing lithium resource [8]. The company has good lithium resource. The the Greenbush lithium mine Australia, for example, is one of the world's largest and best - quality spodumene mines in the world. In lithium ore processing, Tianqi Lithium can produce different lithium compounds from lithium concentrate to lithium carbonate and lithium hydroxide. It has obvious resource advantages in the lithium industry and has a great impact on the global supply of lithium products.

Following are some of the peer companies with affiliations to Tianqi Lithium:

Ganfeng Lithium is also a well - known producer of lithium compound and supplier of lithium metal in China. Both domestically and internationally, there are abundant high-quality lithium deposits. Advanced technology and consistent product quality are used in the manufacturing of battery-grade lithium carbonate, lithium hydroxide, and other items. In the lithium industry, it competes with Tianqi Lithium. It is also trying to enter downstream markets to gain more market share.

CATL is the world's leading supplier of lithium-ion battery systems [9]. Although it is different from Tianqi Lithium in the lithium mining sector, it is closely related in the industrial chain. CATL has a large share of the global power and energy storage battery market. It needs a lot of lithium resources, so it works a lot with lithium mining companies like Tianqi Lithium Industry [10].

3.2 Calculation

Table 1. BYD's financial data

target company	com- pany	EPS	EBITDA	Shares	EV	Long- debt	Short-term	Cash
BYD		10.32	7,228,000,000	2,911,000,000	513,922,000,000	529,085,557,000		10,851,174.5

Table 2. Comparison of the core financial basic data of the enterprise

company comparisons	price	shares (\$'00,000,000)	Mkt Cap (\$'00,000,000)	EV (\$'00,000,000)
BYD	323	29.11	6500	5139.22
Tianqi Lithium Industries Inc.	55.79	16.41	916	5115.57
Ganfeng Lithium	42.8	20.17	1750	2000
CATL	163.26	24.43	8000	4000

Table 3. CCA comparison data

company comparisons	P/E			EV/EBITDA		
	year 0	year 1	year 2	year 0	year 1	year 2
BYD	238.27	206.87	20.1	77.81	18.33	11.76
Tianqi Lithium Industries Inc.	-787.58	23.46	12.54	64	11	7.5
Ganfeng Lithium	64.84	17.37	7.37	50	16.67	12.5
CATL	137.36	62.12	16.22	46.5	21	8
Mean	-86.777	77.455	14.057	59.577	16.75	9.94
Median	101.1	42.79	14.38	57	17.5	9.88
Min	-787.58	17.37	7.37	46.5	11	7.5
Max	238.27	206.87	20.1	77.81	21	12.5

Beginning with the Year 2 - median P/E of 14.38 and EV/EBITDA of 9.88, when using the Year 0 - median P/E and given BYD's current EPS (Year 2) of 10.32 RMB, multiplying the P/E ratio by the EPS shows that the share price 1 of Cola Plus via CCA would be 148.40 RMB. Regarding the Year 2 - median EV/EBITDA, with BYD's EBITDA (Year 2) at 37,269,000,000 RMB, multiplying by the EV/EBITDA ratio of 9.88 gives an EV (Year 2) of 714,126,400,000. After calculating the MV as 185,051,694,174.5 and knowing BYD has 2,911,000,000 outstanding shares, dividing the MV by the number of outstanding shares reveals that the share price 2 of BYD via CCA is 63.57 RMB. In summary, the CCA share price range for BYD is (63.57 RMB, 148.40 RMB). (Table 1, 2, 3)

4 Conclusion

Comparable company analysis (CCA) does have some merits. The approach is simple to implement, and through a comparison of the financial ratios between similar companies within the same industry, it can be utilized to provide a market reference point for BYD's acquisition of Tianqi Lithium and help investors to understand the relative performance of the target company. Furthermore, the fiscal information are available and simple to obtain, and thus easy to analyze. Despite, there are some drawbacks with this method. Differences in business models, strategies, and market positions among companies can cause differences in fiscal performances and might not best represent the strengths of the original company. Timing of financial reports differs and might not be up-to-date in nature. The approach also has a drawback where it takes into account past fiscal performances in using this approach. Estimation of potential of the future or even current is very difficult using this formula.

From the perspective of strategic rationality, BYD's acquisition of tianchi lithium resources industry can guarantee the supply of raw materials, reduce the cost, raise the voice, mitigate the risk of price fluctuations, improve the layout of the industrial chain and have synergistic effect. However, in valuation analysis, a number of factors need to be taken into account and comparable corporate data should be used with caution. In terms of financing and issuance structure, choose the appropriate financing method,

weigh the advantages and disadvantages of stocks and cash, and determine the credit-worthiness of debt. In the course M&A execution, stakeholders such as shareholders and suppliers may face potential problems such as long integration cycle.

Comparable company analysis provides an effective evaluation perspective for BYD's vertical acquisition of Tianqi Lithium, but its limitations need to be further understood. Mergers are strategically sound, but risks and issues need to be taken fully into account in their implementation. Comprehensive use of a variety of analytical methods, the value and impact of mergers and acquisitions comprehensive assessment, will help BYD scientific decision-making, achieve the strategic objectives of industry chain integration, enhance the company's competitiveness in the new energy vehicle industry.

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