Financing Strategies of New Energy Giants: A Case Study on the Capital Structure of Ningde Era

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Abstract. With the advancement of the global "dual carbon" goal, the power battery industry is experiencing rapid development. As the industry leader, CATL's financing strategy and capital structure adjustment have important research value. This study takes Ningde Times as a case, adopts methods including case analysis and dynamic balance model testing, and deeply analyzes its financing strategies and dynamic capital structure adjustment path to verify the applicability of classical financial theories. This study finds that CATL has optimized its capital structure through diversified financing tools, such as equity financing, green bond issuance, and syndicated loans, effectively balancing equity dilution and debt constraints. At the same time, strategic investments such as joint ventures with automakers and vertical integration of the industrial chain have enhanced market competitiveness and financial stability. The research reveals the capital structure optimization path of Ningde Era under the background of technology iteration and capacity expansion and provides a reference for new energy enterprises to formulate financing strategies, which has important theoretical and practical significance.

Keywords: Contemporary Amperex Technology Co.Ltd, Financing Strategy, Capital Structure, Equity Financing, Debt Financing.

1 Introduction

Driven by the global "dual carbon" goal, the power battery industry has become the focus of competition among countries. The compound annual growth rate of global new energy vehicle sales from 2018 to 2024 reached as high as 48%, driving the installed capacity of power batteries to increase from 97 GWH in 2018 to 1100 GWH in 2024. China, with its complete industrial chain and scale advantage, contributed 63% of the global installed capacity in 2024, with CATL accounting for 37%, ranking first in the world for seven consecutive years. However, power batteries belong to heavy asset and high iteration industries, requiring an average investment of 350-450 million yuan in fixed assets per GWH of production capacity. Faced with the expansion window of the TWH era, the company must make optimal financing decisions between equity dilution, debt constraints, and strategic synergy to avoid excessive leverage or missing out on technological iteration dividends.

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The classical corporate finance theory has different views in explaining the capital structure of high-growth and heavy asset manufacturing industries. Based on the basic view of trade-off theory, the asset liability ratio of Ningde Era in 2024 was 58.7%, down from 68.5% in 2018. As a result, the company still needs to find a balance between increasing debt to obtain tax income and controlling financial risks [1]. The pecking order theory points out that enterprise financing gives priority to the use of internal funds, followed by debt financing, and finally equity financing [2]. However, the study found that when facing the window of technological transition, enterprises often “counter-trend” additional issuance at optimal market timing to seize strategic resources, deviating from the predictions of the pecking order theory [3]. In the new energy industry, the uncertainty of technological route and the declining pace of policy subsidies have amplified the external financing demand, and enterprises are more inclined to lock in equity capital in advance. When Ningde Era’s book cash was 178 billion yuan in 2022, it still started private placement of 45 billion yuan, which was the performance of “counter trend” additional issuance to seize strategic resources, which was inconsistent with the prediction of the priority financing theory [4]. The agency cost theory holds that the agency relationship between enterprise owners and managers affects financing decisions [5]. CATL has optimized its corporate governance structure by introducing independent directors to establish a power check-and-balance and supervision mechanism, and implementing a management shareholding plan to align the interests of managers and shareholders. These measures reduce managerial moral hazard and agency costs, thereby optimizing financing decisions.

In recent years, the literature on corporate financing decisions and capital structure is relatively rich. The theory of control rights focuses on the impact of corporate financing decisions on control rights [6]. Ningde Times reasonably arranges the proportion of debt financing and introduces strategic investors, which can maintain the relative control of the family over the enterprise while ensuring the capital demand. The signaling theory holds that the financing decision of an enterprise will send a signal about the value of the enterprise to the market [7]. Through multiple equity financing rounds, Ningde Times has conveyed its confidence in future development to the market and improved the market’s recognition of its long-term value. These documents provide a rich perspective for understanding the financing strategy and capital structure adjustment in Ningde Era. However, the existing research has not yet systematically answered: how to dynamically balance the tension among equity dilution, debt constraint, and strategic synergy in the context of technology iteration, policy fluctuation, and capacity competition.

Although the existing literature has analyzed the financing strategy and capital structure from many aspects, there is still a blank in the specific field of new energy high-growth enterprises, especially in the complex situation of technology iteration, policy fluctuation, and capacity expansion. This paper takes Ningde Era as an example, through in-depth analysis of its financing strategy and capital structure adjustment path, verifies the application value of priority financing theory and trade-off theory, enriches the theoretical situation of dynamic adjustment of capital structure, reveals the capital structure optimization path of Ningde Era in TWH expansion cycle, and tests the applicable boundary of trade-off theory and priority financing theory in emerging manufacturing scenarios. At the same time, the research results of this paper provide a reference operation path for new energy enterprises to formulate financing strategies and optimize capital structure, which has important theoretical and practical significance.

2 Case Study

Ningde Times New Energy Technology Co., Ltd., founded in 2011, was listed in June 2018 with the stock code of 300750. The company's business is mainly concentrated in the fields of power battery systems, energy storage systems, battery materials, and recycling, among which the power battery system is the main source of revenue, accounting for 71% of the revenue in 2023. In recent years, Ningde Times has made remarkable achievements in business expansion. In 2021, its total operating revenue was 130.4 billion yuan, a year-on-year increase of 159%, and its net profit was 15.9 billion yuan, a year-on-year increase of 185%; In 2023, the annual revenue was 400.9 billion yuan, a year-on-year increase of 22%, and the net profit was 44.1 billion yuan, a year-on-year increase of 44%; In 2024, the revenue was 362billion yuan, and the net profit was 50.7 billion yuan, a year-on-year increase of 15%. In 2024, CATL's power battery system sales reached 381 GWh, accounting for 42% of the global market and ranking first globally for seven consecutive years; its energy storage battery sales reached 93 GWh, accounting for 37% of the global market and topping the global ranking for three consecutive years. In addition, the company has also actively expanded its overseas market, with overseas revenue accounting for 30% in 2024. At the same time, Ningde Times maintained a stable financial position. In 2021, the net cash flow from operating activities increased by 24.5 billion yuan, or 133%, compared with the previous year; It will further increase to 97billion yuan in 2024. The gross profit margin and net profit margin of the company continued to increase. In 2024, the gross profit margin reached 19% and the net profit margin was 14%. At the same time, the company's R&D investment has also continued to increase, with a total R&D investment of more than 70billion yuan and more than 20000 R&D personnel in the past decade, which provides strong support for the company's technological innovation and product competitiveness. By the end of 2024, the company will have set up 13 production bases in Fujian, Jiangsu, Sichuan, Guangdong, Erfurt, Germany, and Debrecen, Hungary. Among these 13 production bases, domestic bases focus on achieving economies of scale, while overseas bases are close to European automakers. This proximity reduces logistics costs and trade barriers, supporting the growth of overseas revenue.

In terms of industry characteristics, the power battery industry has the "three highs" characteristics of high capital investment, high-tech iteration, and high customer concentration. For every 1GWh of new capacity, the investment in fixed assets is 350-450 million yuan, and the depreciation period of equipment is only 5-7 years. In addition, the technical routes of lithium iron phosphate and ternary are parallel, and enterprises need to continue to invest in research and development to maintain competitiveness. The concentration of downstream vehicle manufacturers is high. In 2024, the procurement volume of the world's top ten vehicle enterprises accounted for 74% of the shipment volume of Ningde Times, and customers have strong bargaining power. These industry characteristics make it necessary for Ningde Times to maintain sufficient cash reserves and flexible financing channels to hedge the double uncertainty caused by the switching of technical routes and the fluctuation of customer demand. In terms of financing demand, according to the company's capacity planning from 2025 to 2027, it is estimated that capital expenditure will remain at an annual high of 60-70billion yuan, and diversified financing schemes are urgently needed to reduce the weighted average cost of capital.

3 Analysis of Financing Strategy

3.1 Equity Financing: Multiple Private Placements and Hong Kong Stock Listing

From 2018 to 2023, Ningde Times raised a total of 70billion yuan through three fixed increases of shares: 5.4 billion yuan was raised through IPO in 2018; In 2020, the non-public offering raised 19.6 billion yuan; In 2022, a fixed increase of 45billion yuan will be completed, with an issue price of 410 yuan/share. The funds will be used for five major battery projects and technology R&D centers in Huxi, Zhaoqing, Jining, and Luoyang. In May 2025, the company will further land on the Hong Kong stock exchange, raising a total of HK$41 $41billion for Hungarian projects, European R&D centers, and overseas working capital.

As shown in Fig. 1, the total financing reached a peak of nearly 45 billion yuan in the third quarter of 2022, which is related to a large-scale fixed increase completed by the company in that period. The asset liability ratio remained relatively stable and fluctuated slightly over the whole time period, but the overall trend was downward. It was 59% at the end of 2024, down nearly 10% from 2018. This trend helps to prove that Ningde Era has achieved an effective financing strategy through capital structure optimization in the TWH expansion cycle. Through large-scale equity financing, the company not only meets the capital demand for expansion, but also optimizes the shareholder structure and reduces the asset liability ratio by introducing international long-term funds. This indicates that CATL can flexibly adjust its financing strategies and achieve dynamic optimization of its capital structure based on market conditions and corporate development needs. This strategy not only supports the rapid expansion of the company but also enhances its financial stability of the company.

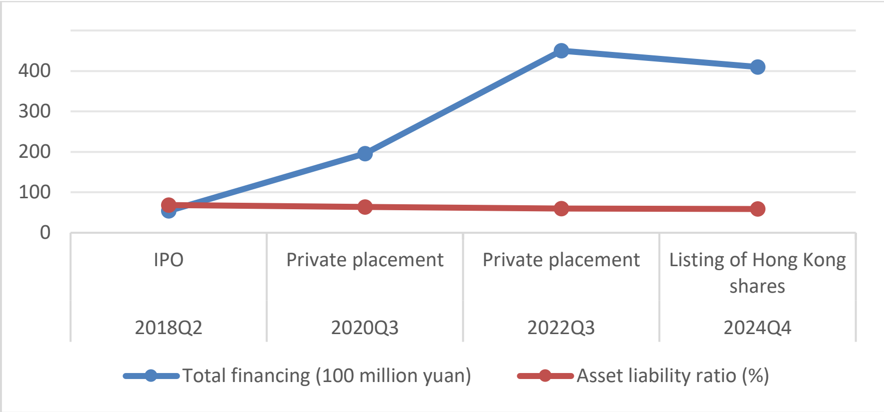

Fig. 1. Total financing and asset liability ratio of Ningde Times from 2018 to 2024.

Data source: Ningde Times' 2018-2024 annual report and announcements of listed companies.

3.2 Debt Financing: Green Bonds and Syndicated Loans

Ningde Times made full use of its ESG advantages and issued 15billion yuan of green corporate bonds from 2021 to 2024, with a coupon rate of 2.9% -3.4%, which was 30-50 basis points lower than that of AAA corporate bonds in the same period; At the same time, it obtained a multi-currency syndicated loan of US $12 billion from CDB, ICBC, CCB, etc., with a term of 5-7 years and a comprehensive cost of SOFR+120bp. As shown in Table 1, the financing cost obtained by Ningde Times through green bonds and syndicated loans is significantly lower than the industry average, and the interest margin is about -80 basis points. This shows that the company has successfully raised funds at a low interest rate by taking advantage of its ESG advantages, which reflects the financing advantages of Ningde Era relative to the average level of the industry, and also shows the competitiveness of the company in the debt market. This low-cost financing strategy not only reduces the financial cost and debt servicing pressure, but also locks in the long-term source of funds, which is in line with the best advantage of the trade-off theory of "tax income of debt interest - financial distress cost".

Table 1. Debt financing costs.

Debt instruments	Issue time	Issuing interest rate(%)	Industry average in the same period(%)	Interest margin(bp)
Green corporate bonds	2021	3.1	3.9	-80
Green corporate bonds	2022	2.9	3.7	-80
Green corporate bonds	2023	3	3.8	-80
Syndicated loan	2023	SOFR+120	LPR+200	-70

Data source: Annual report of Ningde Times from 2021 to 2023 and announcements of listed companies.

This trend helps to prove that the debt financing strategy of Ningde Era is successful. By issuing green bonds and syndicated loans, the company not only reduced the financing cost but also optimized the capital structure. Based on the cumulative 15-billion-yuan green bond financing scale from 2021 to 2024, CATL saves approximately 120 million yuan in annual interest expenses (calculated based on an 80-basis-point interest rate advantage over the industry average). This further confirms the existence of debt tax shield benefits as predicted by the trade-off theory. In addition, this low-cost financing strategy also meets the company's capital needs in terms of expansion and technology research and development, and supports the company's long-term development strategy. Therefore, these data also support the research purpose of this paper, that is, to reveal the capital structure optimization path of Ningde Era in the TWH expansion cycle, and to test the applicability of trade-off theory and priority financing theory in emerging manufacturing scenarios. Through these practical cases, this paper shows how Ningde Era can achieve the dynamic optimization of capital structure through effective financing strategies, so as to provide a reference operation path for similar enterprises.

3.3 Strategic Investment and Cooperation: Joint Venture with Automobile Enterprises and Vertical Integration of the Industrial Chain

Ningde Times has deepened the cooperative relationship by establishing joint ventures with a number of automobile enterprises. For example, Ningde Times has established joint ventures with Geely, GAC, SAIC, Dongfeng, FAW, and other auto companies to jointly build battery factories and improve production capacity. At the same time, Ningde Times actively distributes upstream resources and participates in the development of lithium, nickel, cobalt, phosphorus, and other mineral resources through investment, equity participation, and other ways to ensure the stability of raw material supply.

The vertical integration of the industrial chain not only reduces the transaction cost, but also improves the flexibility of the company in the selection of technical routes, reflecting the priority of "internal capital debt equity" in the priority theory, that is, to achieve the effect of "quasi-internal capital" through strategic alliance and reduce the cost of information asymmetry. The vertical integration of the industrial chain also brings other advantages, such as improving production efficiency and product quality, as well as speeding up the R&D and listing of new products. By establishing joint-venture factories with car companies, Ningde Times can cooperate more closely with customers, better understand customer needs, and provide more customized products and services.

4 Capital Structure Change and Financial Performance Analysis

4.1 Changes in Capital Structure

The capital structure optimization process of Ningde Era in the past five years is a concentrated display of its strategic layout and financial management wisdom. As shown in Table 2, from 2020 to 2024, the company's total assets increased significantly, from about 150 billion yuan to more than 700 billion yuan. At the same time, the company's total liabilities also increased from about 100 billion yuan in 2020 to about 520 billion yuan in 2024. Although the debt scale increased, the company effectively controlled the financing cost by issuing green bonds and syndicated loans. In terms of owner's equity, it has increased from about 70 billion yuan in 2020 to about 280billion yuan in 2024, which reflects that the company has successfully raised a large amount of capital through equity financing. The gradual increase in the equity ratio from 2022 to 2024 indicates that CATL's solvency is gradually improving, as a higher equity ratio reduces its reliance on debt financing and lowers default risks.

Table 2. Capital structure of Ningde Times from 2020 to 2024.

Year	Total Assets (100 million yuan)	Total liabilities (100 million yuan)	Owner's equity (100 million yuan)	Asset liability ratio	Equity ratio
2020	1566	874	692	56%	44%
2021	3077	2150	926	70%	30%
2022	6010	4240	1769	71%	29%
2023	7172	4973	2199	69%	31%
2024	7867	5132	2735	59%	35%

Data source: annual report of Ningde Times from 2020 to 2024 and announcement of listed companies.

4.2 Financial Performance Analysis

As a new energy enterprise with heavy assets and high growth, Ningde Era's solvency is directly related to the financial stability and sustainable development ability of the enterprise. From 2020 to 2024, the overall current ratio of Ningde Era remained at a high level, and reached a high point of 2.05 in 2020, indicating that the company had sufficient current assets to cover its current liabilities during that period, and its short-term solvency was very strong. Although the current ratio decreased to 1.19 in 2021, it gradually rebounded and reached 1.61 in 2024, indicating that after a short-term liquidity adjustment, the company has re-enhanced its short-term solvency through effective asset management and capital operation. In addition, through the analysis of the dynamic balance model, the company reduced the asset liability ratio through equity financing, while maintaining appropriate debt leverage to obtain tax shield income, which effectively optimized the capital structure [8].

The profitability of Ningde Era not only reflects its market competitiveness in the field of new energy power batteries, but also reflects the positive impact of its capital structure optimization on profitability. The return on net assets of Ningde Times reached a high of 23% in 2022, indicating that the company had strong asset utilization efficiency and profitability in that year. Although the return on net assets declined slightly in 2023 and 2024, it remained above 20%, indicating that the overall profitability of the company is still strong and relatively stable. According to DuPont's analysis, the high return on net assets of Ningde Era is mainly due to the high net interest rate on sales and asset turnover, while the low equity multiplier (moderate financial leverage) is also one of the key factors. The low equity multiplier indicates that the company is more cautious in using debt financing, avoiding the financial risk caused by excessive leverage, and ensuring the stability and sustainability of profits [9].

The rate of return on total assets is an important indicator to measure the ability of enterprises to use all assets to obtain profits. The higher the rate of return on total assets, the higher the utilization efficiency of enterprise assets. As shown in Table 3, the return on total assets of Ningde Era has an overall upward trend from 2020 to 2024, with a return on total assets of 7.1% in 2024, indicating that the utilization efficiency of the company's assets is high. Although the return on total assets in 2024 was slightly lower than that in 2023, it was still higher than the industry average, which was mainly due to the company's continuous optimization in asset management and operational efficiency.

Table 3. Return on total assets from 2021 to 2024.

Year	Ningde Era(%)	Industry average(%)
2021	6.8	4.2
2022	7.5	4.8
2023	7.8	5.1
2024	7.1	4.9

Data source: annual report of Ningde Times from 2021 to 2024 and announcements of listed companies.

5 Enlightenment and Suggestions

From the perspective of enterprises, they should adopt diversified financing strategies and supply chain financial innovation to deal with the risks of technology substitution, raw material price fluctuations, and unstable supply, optimize the capital structure, and improve financial stability and market competitiveness. First, enterprises need to combine equity financing and debt financing to balance technology investment and capital structure. Equity financing can support technology research and development, avoid financial risks caused by excessive reliance on debt financing, and achieve long-term sustainable development [10]. Secondly, enterprises should explore supply chain financial innovation, cooperate with suppliers and financial institutions, optimize capital flow, reduce operating costs, and improve supply chain stability and efficiency [11].

From the perspective of investors, they should pay close attention to the industrial technology iteration, enterprise capital structure, and policy dynamics, and evaluate the enterprise's R&D investment in new technologies, financial health, and coping strategies for policy changes. Strategic investors can be introduced under appropriate conditions. First of all, investors need to pay attention to the speed and direction of industrial technology iteration, because technology substitution may lead to the rapid obsolescence of existing products or technologies of enterprises, affecting their market competitiveness and profitability. Investors should evaluate the R&D investment and adaptability of enterprises to new technologies to make more intelligent investment decisions. Secondly, a reasonable capital structure is the key to the stable development of enterprises. Investors should analyze the asset liability ratio, current ratio, and other indicators of the enterprise to assess its financial health. Moreover, due to the high dependence of the new energy industry on policies, investors need to assess the sensitivity of enterprises to policy changes. The policy adjustment may affect the market demand, subsidy income, and financing environment of enterprises. Therefore, investors should pay attention to the policy dynamics and analyze the response strategies of enterprises to policy changes [12].

From the perspective of regulators, they should improve green financial instruments, strengthen information disclosure requirements, and promote orderly competition in the new energy industry through policy guidance and market regulation. First of all, improving green financial instruments such as green bonds and credit can help enterprises finance at a lower cost and promote sustainable development. The successful case of Ningde Era has proved its effectivenes. Secondly, strengthening information disclosure requirements, especially in terms of financial status, technological progress, and policy impact, will help investors make more accurate judgments and improve market transparency and efficiency [13]. Finally, regulators should avoid excessive competition and waste of resources in the industry through policy guidance and market supervision, such as formulating industry standards and norms, encouraging technological innovation and industrial upgrading of enterprises, and promoting the healthy development of the new energy industry.

6 Conclusion

Taking Ningde Era as a case, this paper deeply analyzes its financing strategy and capital structure adjustment path against the background of the rapid development of the new energy industry. The study found that Ningde Times successfully optimized the capital structure and achieved the balance between equity dilution and debt constraint by flexibly using diversified financing means such as equity financing, green bond issuance, and syndicated loans. At the same time, through strategic investments such as joint venture construction with automobile enterprises and vertical integration of the industrial chain, Ningde Era has not only enhanced its market competitiveness but also improved its financial stability. The implementation of these strategies not only supports the rapid expansion of the company, but also maintains a low financial risk for the company in the background of technology iteration and capacity expansion. The results show that the financing strategy and capital structure adjustment path in Ningde Era provide an important reference for the development of new energy enterprises in high-growth and heavy asset industries, and reveal the effective path for enterprises to achieve sustainable development in complex situations.

This paper systematically analyzes how to optimize the capital structure through diversified financing strategies in the background of the rapid development of the new energy industry in Ningde Era. This study not only provides rich empirical evidence for understanding the financing decisions of new energy enterprises but also verifies the applicability of classical financial theories in emerging manufacturing industries—especially amid the complexity of technological iteration, policy fluctuations, and capacity expansion. In addition, the successful experience of Ningde Era also provides an operable path for other new energy enterprises to formulate financing strategies and optimize capital structure, which has important theoretical and practical significance. However, the current research also has some shortcomings. For example, the research mainly focuses on the financing strategy and capital structure adjustment path in the Ningde Era, and its applicability to other new energy enterprises needs to be further verified. Future research can further expand the scope of research, compare and analyze the financing strategies of different new energy enterprises, and explore their applicability in different development stages.

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