ISSN 2616-5902 Vol. 6, Issue 10: 19-24, DOI: 10.25236/AJBM.2024.061004

Analysis of Financing Issues and Strategies for BYD New Energy Vehicle Company

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Abstract: *In recent years, as energy shortages have intensified and environmental awareness has increased, the automotive industry has shifted towards reducing energy use and pursuing green, low-carbon transformation. With the support of various government subsidy and tax reduction policies, the new energy vehicle industry in China has developed rapidly. However, after 2020, as China's new energy vehicle industry transitioned into the "post-subsidy era", subsidies have gradually decreased, and issues such as financing difficulties, intense market competition, and declining sales have become urgent problems to be addressed in the industry. BYD New Energy Vehicle Company, a leading enterprise in the field, is facing financing challenges on different levels. This paper focuses on BYD Company to analyze its financing needs, financing channels, and financing costs, and proposes strategies to optimize its financing structure, reduce financing costs, and diversify financing channels. These measures are intended to help BYD overcome its current financing difficulties, and also provide references for the development of other new energy enterprises.*

Keywords: *BYD Company; New energy; Financing*

1. Introduction

New energy vehicles were born against the backdrop of energy crises and heightened environmental consciousness, becoming symbols of clean transportation due to their eco-friendly, efficient, and low-carbon advantages. Since 2014, China's government has launched a series of favorable policies, such as tax benefits and exemption from vehicle purchase tax for new energy vehicles, effectively boosting sales and accelerating industry growth. However, relying solely on government subsidies is insufficient for long-term healthy enterprise development. BYD, which entered the automobile manufacturing sector in 2003, quickly rose to prominence as one of the leading global producers of new energy vehicles, leveraging its unique technology and cost-control capabilities. Given the capital and technology-intensive nature of the new energy vehicle industry, companies like BYD need continuous investment to expand production and operations. Subject to changing financing environments and fierce market competition, BYD is confronted with challenges such as rising financing costs and limited access to channels. To secure a stable and efficient capital flow, it is imperative for BYD to take measures to reduce financing costs, optimize its financing structure, and broaden financing channels. Exploring these issues and proposing solutions not only helps BYD tackle current financing barriers and foster innovation but also serves as valuable insights for other companies in the new energy vehicle field.

2. Literature Review

As the new energy vehicle industry garners increasing attention and investment, scholars like Zhang J(2023) believe that blockchain technology and supply chain finance will play a significant role in propelling the industry's development[1]. Overseas new energy vehicle enterprises utilize various innovative financing methods including green bonds, crowdfunding, private equity, and venture capital. In markets such as Europe and the USA, green bonds are highly recognized for exclusively funding eco-friendly projects. Researchers such as Ruixin G(2021) have adopted both qualitative and quantitative methods to delve deep into the financial efficiency issues of Chinese new energy vehicle companies. Their studies reveal a "first rise then decline" trend in overall financing support efficiency for publicly listed new energy vehicle enterprises. Comparing equity financing and debt financing, the

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marginal coefficients of equity financing are lower than those of debt financing, indicating greater efficiency in debt financing[2]. Mo Li(2021)utilized the DEA evaluation model to compare the equity financing efficiency between Chinese and American listed new energy vehicle companies, offering a comprehensive evaluation of their effectiveness[3].

The new energy industry is a key strategically emerging sector in China, and national policy support provides a favorable external financing environment for companies like BYD. However, researchers have found that new energy vehicle companies are facing severe financing difficulties due to the gradual reduction of government subsidies and intensified market competition, revealing multiple issues in their existing financing models. Consequently, Mingming Z (2023) analyzed the feasibility of asset-backed securitization financing from the perspectives of typical financing challenges faced by renewable energy enterprises, the underlying assets that can be securitized, the legal and policy foundations for financing, and the historical and current status of domestic and international practices. The study proposed that to ensure adequate revenue for renewable energy projects and to reduce risks and costs, the Chinese government should promote the securitization of patents and improve the basic institutions and mechanisms for securitization[4]. Chen Weimei(2019) proposed a series of solutions aimed at resolving the financing predicaments faced by BYD, including adjusting dividend distribution policies and strengthening capital management[5]. Cheng Jiarui(2022) points out that financing issues are an urgent problem for companies to resolve. His research on BYD's overall financing situation revealed a strong internal financing capacity but a heavy dependency on subsidies, leading to significant risks[6]. Guo Rujie(2023) also recognizes the difficulty in financing as a crucial restraining factor. Through analyzing BYD's financial data and financing structure, she discovered issues like high asset-liability ratios and a single financing model, which resulted in poor financing outcomes. To address these, she suggested enhancing internal financing capacity, appropriately reducing the asset-liability ratio, and strengthening equity financing among other optimization strategies and protective measures[7]. Shi Miaomiao (2023) considers supply chain financing an important means for new energy vehicle enterprises to develop in the Industry 4.0 era[8]. Xie Dongyou(2023) analyzing from the current green technology innovation context, found that government subsidy measures can enhance creditors' and investors' trust, boosting enterprises' financing capacities while external financing can effectively ease the pressure of R&D funds[9]. Liu Fei (2022) analyzed 57 listed new energy vehicle companies and found significant impacts of technical level and government subsidies on financing efficiency[10]. Qu Yunhui (2022)using a novel two-stage chained super-efficiency SBM-DEA model, analyzed the financing efficiency of listed new energy vehicle companies, showing that while the overall financing efficiency level of China's new energy vehicle industry has not reached full effectiveness, it is relatively high and the number of effective financed enterprises is on the rise each year[11]. Based on the literature review, it is evident that the overall financing efficiency of the new energy vehicle industry is steadily improving, but leading companies including BYD still face financing challenges. To promote the sustainable development of new energy vehicles, increasing research efforts and optimizing existing financing strategies are necessary.

3. Overview and Current Status of BYD New Energy Vehicle Company

BYD New Energy Vehicle Company was established in 1995 and is one of the largest new energy vehicle manufacturers in China. The company initially focused on the research and development and production of batteries and battery management systems, later dedicating itself to the development of renewable energy vehicles like hybrid cars incorporating high efficiency and environmental protection. By 2023, BYD has nine major new energy vehicle production bases across China, with the largest in Shenzhen fully equipped with advanced production lines capable of mass production. Additionally, to better meet the broad market demand, new production bases have been constructed in several cities across the country. In terms of international expansion, BYD operates in over 50 countries and more than 200 cities around the world, realizing its strategic deployment across all six continents, thereby effectively strengthening its global market influence.

As of January 2, 2024, BYD announced its new energy vehicle sales data for December 2023, which showed a monthly sales volume of 341,000 units, representing a year-on-year increase of 45%; the cumulative annual sales volume of 3 million units in 2023 also set a record for Chinese automotive sales, reaching 3.024 million units, a landmark in the global new energy vehicle market. This achievement was mainly due to strong performance in the passenger car market, especially with pure electric and plug-in hybrid models, which saw growth rates of 73.32% and 51.40%, respectively. Additionally, BYD has made significant progress in the commercial vehicle market, with sales increasing by 80% year-on-year. Despite a decline in bus sales, the overall market still achieved a

ISSN 2616-5902 Vol. 6, Issue 10: 19-24, DOI: 10.25236/AJBM.2024.061004

five-fold increase in volume. This reflects the success of BYD's diversified product strategy. Overall, BYD's vehicle lineup shows a steady growth trend across different sectors, underscoring its leadership position in the market.

4. Analysis of Financing Issues for New Energy Vehicles

4.1 Analysis of Financing Needs

As a leading enterprise in the industry, BYD faces multiple financing needs in its strategic planning. First, BYD needs substantial funds to meet consumers' expectations for high-quality, high-performance new energy vehicles and to develop and produce new products to enhance its core competitiveness. Second, as BYD's market share grows domestically and internationally, expanding production scale becomes imperative, requiring not only improvements in production efficiency and product quality but also additional investments in equipment renewal and upgrades. Third, technological innovation is key to maintaining BYD's long-term competitive advantage, especially in terms of battery technology and the development of intelligent systems, all of which require significant financial support. Additionally, market expansion and brand building are equally important. Whether in domestic or international markets, activities such as market research, channel construction, and brand promotion are essential and all these require substantial financial backing. Therefore, BYD must explore diverse financing avenues and devise reasonable financing strategies to ensure sufficient funding to drive business development.

4.2 Analysis of Financing Channels

Financing channels are crucial for enterprises as they determine the scale, risk, and strategy of financing, directly affecting business development. Bank loans are one of the most common financing methods for companies in China. According to statistics, BYD's total loans amounted to 15.087 billion yuan in 2012. As the company's business scale continued to expand, this figure peaked at 52.28 billion yuan in 2019 and then gradually decreased to 12.747 billion yuan by 2022. The continuous increase from 2012 to 2019 reflects BYD's need for substantial funds to support its rapid expansion strategy. During this period, short-term loans increased from 8.418 billion yuan to 40.332 billion yuan, a 379% increase, indicating BYD's reliance on a significant amount of short-term loans to meet immediate financial needs. Although the asset-liability ratio during this period remained at a relatively low-risk level of 60%-70%, the high proportion of short-term liabilities brought considerable financial risks. After 2020, changes in the external environment prompted BYD to adjust its loan structure. Total loans dropped to 12.747 billion yuan (as of 2022), and short-term loans were significantly reduced to around 10 billion yuan. This change not only alleviated repayment pressures but also signified a shift in the company's financial management strategy towards more stable long-term financing.

Bond financing is another important method for enterprises, reflecting their funding requirements. Compared to issuing stocks, bond financing involves simpler procedures and can reduce costs through tax deductions on interest expenses, optimizing the capital structure. BYD, with a 3A international credit rating, issued ten bonds from 2012 to 2023, totaling 19.6 billion yuan, with interest rates ranging between 3.56% to 6.35%, and maturity dates spread from September 2018 to April 2025. Between 2012 and 2017, BYD's bond financing was relatively conservative, totaling 4.5 billion yuan, an annual average of 750 million yuan. This indicates that the company was in the early stages of growth during this period, with relatively stable funding needs, focusing on product line optimization and market positioning, and not yet undergoing large-scale expansion. From 2018 to 2019, bond financing surged to 11.6 billion yuan, nearly 2.6 times the previous period, including the issuance of green bonds. This not only shows an increase in financing scale and diversification of channels but also reflects the company's commitment to sustainable development. In 2020, BYD issued only one bond, with a financing amount of 2 billion yuan at an historically low interest rate of 3.56%, demonstrating market confidence in BYD and a reduction in its financing costs.

Government subsidies are also a significant source of financing for BYD, which do not incur financing costs or dilute equity, positively impacting operational activities. To nurture strategic emerging industries and strengthen energy conservation and emissions reduction efforts, the state began subsidizing new energy vehicles in 2010. From 2013 to 2022, the government subsidies received by BYD showed fluctuating growth, with subsidy amounts representing a large proportion of BYD's net profit in certain years, particularly in 2014 and 2018, when they accounted for 107.8% and 58.3% of

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net profits respectively. This underscores the crucial role of government subsidies in the company's financial stability and profitability. In 2016, as the government began adjusting its subsidy policies for new energy vehicles, gradually reducing the subsidy intensity to encourage the industry to focus on technological innovation rather than relying on government support, other new energy vehicle companies faced challenges due to limited self-research capabilities and lack of innovation, resulting in reduced subsidies. However, BYD, due to its continued investment in research and development, achieved reverse growth in subsidy amounts. In 2019, with further subsidy reductions, BYD also faced financial risks associated with decreased subsidy amounts, which persisted until 2020. As the economy rebounded and BYD persisted in research and innovation, its dependence on government subsidies decreased, with subsidy amounts dropping from 70% to 27.9%. In 2021, although BYD's net profit declined, subsidy amounts continued to grow, primarily due to market changes caused by the pandemic impacts. The government, aiming to help enterprises weather the economic downturn and maintain stable development in the new energy market, extended subsidy policies until the end of 2022. In the year 2022, BYD received 3.98 billion yuan in government subsidies, reaching a ten-year high. Although net profits declined to 1.771 billion yuan that year, the proportion of subsidies in net profits surged to 224.7%, highlighting the significant impact of government subsidies on BYD's financial health.

4.3 Analysis of Financing Costs

Financing cost is one of the crucial indicators of enterprise financing activities, and analyzing it is essential for effectively managing funds and reducing financial risks. BYD's primary financing costs include interest on loans, costs associated with bond issuance, fees for equity financing, and expenses related to other financing activities. The level of loan interest directly influences the financing cost; whereas bond and equity financing involve issuance fees, rating fees, intermediary processing fees, and interest expenses, indirectly affecting the company's credit rating and subsequently increasing future financing costs. The company's financing costs also involve calculating the cost of capital, which can be assessed by calculating the weighted average cost of capital (WACC). While calculating WACC, it is necessary to consider the proportion of different financing channels and their corresponding costs. BYD evaluates the risks and returns of various financing channels to ultimately determine the optimal financing combination to reduce financing costs. External factors like the macroeconomic environment and industry competition levels also impact financing costs. Thus, BYD must closely monitor macroeconomic and industry dynamics, adjusting financing strategies in a timely manner to minimize overall financing costs.

5. Financing Strategies for BYD New Energy Vehicle Company

5.1 Optimize Financing Structure

The previous analysis of BYD's financing issues provides a basis for proposing an optimized financing structure to better meet the company's strategic development needs. Considering the past capital structure and the funding requirements for 2024, which include daily operations, new energy project R&D investments, and automobile production and sales, BYD has historically relied on bank loans, debt financing, and government subsidies to meet its funding needs. Over-reliance on these traditional financing methods may continuously expand the company's debt risk and gradually form a financing dependency. Facing an unbalanced and irrational financing structure, BYD should first continue to maintain a financing strategy of internal financing growth, lowering the dividend payout ratio, and accumulating retained earnings to increase the proportion of internal financing. Second, with growing income and profits, gradually increase the proportion of long-term loans to provide stable financial support for long-term development. The company should also actively explore and attempt other financing avenues, such as asset securitization or crowdfunding, to diversify sources of financing. In the process of realizing asset securitization, BYD could sell assets to special institutions (SPVs) to manage assets in a securitized manner, thus better enhancing asset liquidity, adjusting asset structures to reduce expenditure costs, and lowering debt risks. Additionally, utilizing internet crowdfunding could provide relatively small amounts of funds but help expand financing sources, increase market influence, and attract potential capital attention. Finally, optimizing and improving the existing financing structure can help BYD effectively control its capital layout and distribution ratio, laying a solid foundation for future development.

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5.2 Reduce Financing Costs

Reducing financing costs is crucial for BYD New Energy Vehicle Company, directly affecting its financial health and development potential. Although the company has secured a significant amount of short-term loans based on its good reputation, fulfilling short-term financial needs, it also increases financial risks. Therefore, BYD needs to adjust its debt financing scale, balancing fund utilization rates and financial risks. To meet long-term development needs and financial reserve requirements, the company could consider equity financing to raise funds, enhancing financial flexibility. Although this may lead to equity dilution in the short term, it can help reduce financial leverage and debt financing costs in the long run, thereby lowering overall financing costs. Improving the transparency of financial reports can enhance investor confidence and reduce the costs of equity and debt financing. Moreover, strengthening brand building and product competitiveness, expanding market share and profitability, can also attract more investments, enhancing the willingness of banks and other creditors to lend, further reducing financing costs. The company can also flexibly adjust financing strategies according to market conditions, using low-interest loans and green bonds as tools to effectively reduce financing costs. Lastly, innovation remains the primary driver of development, and continuous technological innovation and product upgrades will consolidate BYD's competitiveness in the new energy vehicle market, attracting more funds while continuously reducing financing costs.

5.3 Diversify Financing Channels

Diversifying financing channels can effectively reduce a company's reliance on a single financing method, enhancing financing flexibility and success rate. For BYD, diversifying financing not only alleviates financing pressures but also provides more options for its future development. However, BYD still heavily relies on traditional bank loans, which somewhat restricts the expansion of its new energy vehicle business. Given the characteristics of the new energy vehicle industry, BYD requires substantial long-term capital investments in production line construction, new product development, and battery technology research. Therefore, in addition to traditional bank credit, diverse financing methods such as equity pledging and asset mortgaging should be considered. Equity pledge financing allows shareholders to use their company shares as collateral to borrow from financial institutions. This method can quickly and cost-efficiently obtain funds when capital market conditions are favorable but risks affecting shareholder rights due to stock price fluctuations. Asset mortgage financing involves using the company's fixed assets, such as factories, equipment, or intellectual property, as collateral to obtain working capital. This method helps optimize the debt structure and enhance financial stability, but may reduce the company's flexibility in using key assets. In summary, by reasonably utilizing various financing tools, BYD can not only achieve sustained growth in capital use but also flexibly adjust financing strategies according to different development stage needs. Continually innovating and expanding diversified financing avenues is key to enhancing BYD's competitiveness and core capabilities.

6. Summary

As a key industry in China's economy and society, the importance of financing is self-evident. In recent years, with the rapid growth of the economy, market competition and competition between enterprises have become increasingly fierce. At the same time, the state's government subsidies and preferential tax policies for new energy vehicle companies have been gradually tightened, which has increased the demand for funds for new energy vehicle companies, and the difficulty of financing has also increased. Therefore, it has become particularly urgent to study the financing of new energy vehicle enterprises. This article takes BYD as an example to analyze its financing problems in the field of new energy vehicles. In the problem analysis part, the article first describes BYD's current financing situation, clarifies the company's capital needs, and points out the problems encountered by BYD in the financing process. The focus of the article is to explore BYD's current available financing channels, including bank loans, bond financing, and government subsidies. Based on these financing channels, this paper further proposes corresponding strategies to optimize the company's financing structure, reduce financing costs and broaden financing channels. It is hoped that this article can provide some suggestions and methods for BYD to solve its financing problems, and promote its sustainable development and competitiveness in the new energy vehicle industry.

ISSN 2616-5902 Vol. 6, Issue 10: 19-24, DOI: 10.25236/AJBM.2024.061004

Acknowledgements

This work was supported by the Fund project, 1) The 2021 Guangdong Province Higher Education Teaching Reform Project “Exploration of the OBE (Outcomes-Based Education) Model for Cultivating Applied Economic Talents at Private Universities under the Background of New Business Disciplines”,(2021JXGG01); 2) Guangzhou College of Commerce's 2020 First-Class Course Construction Project “Corporate Finance”,(2020XJYLKC11); 3) Guangzhou College of Commerce's 2022 University-Level Quality Engineering Project “Corporate Finance Course Research and Teaching Office”,(2022ZLGC09).

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