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Analysis of Investment Value in China's New Energy Vehicle Industry - Taking BYD Company as an Example

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Abstract

Purpose – In recent years, China's automotive industry has flourished, setting a record for the fastest growth in history. However, this has been accompanied by a continuous thirst and consumption of fossil fuels. China's automobile industry's thirst for fossil energy has far exceeded mining output, so China's investment in new energy automobile industry has reached a height that cannot be ignored. This article takes BYD, a Chinese new energy vehicle company, as an example to analyze its investment value, providing reference and basis for industry development and investment.
Design/Methodology/Approach – This article mainly uses literature analysis and quantitative research methods for the investment analysis of BYD Company. This article provides an in-depth analysis of the investment value of BYD Co., Ltd., a leading enterprise in China's electric vehicle industry. It explores the overall development prospects of China's new energy vehicle industry, sorts out and elaborates on China's policy support in recent years. By comparing and analyzing with new energy vehicle enterprises in countries such as the United States and Japan, its position in the international market is evaluated, and its future development prospects are speculated. Finally, based on the specific situation of BYD, analyze its strengths and weaknesses in development, and provide some suggestions for investors and the development of new energy vehicles.
Findings – In recent years, China's new energy vehicle industry has flourished with the support of national subsidy policies, and well-known enterprises such as BYD have emerged, attracting investor attention. Through the analysis of China's new energy vehicles and BYD Company in this article, conclusions and investment suggestions have been drawn that the new energy vehicle industry has considerable investment value. Effective evaluation conclusions can provide reference for managers in their business decisions, as well as valuable enterprise value for investors.
Research Implications – This article conducts research on the domestic new energy vehicle industry and BYD Co., Ltd., which has the largest asset scale and the most mature electric vehicle technology among new energy vehicle companies. The aim is to analyze the following two issues: 1. The development prospects of the new energy vehicle industry. 2. Investment value analysis of BYD Co.,Ltd.

Keywords: New energy vehicle enterprises; BYD Company; Development prospects; Investment value
JEL Classifications: G31, M21, O33

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Ⅰ. Introduction

In recent years, international oil costs have remained high, and although prices have plummeted internationally recently, oil prices are deeply influenced by the international market. In addition, new energy technology has extremely low pollution and can help countries achieve their annual energy conservation and emission reduction goals. Therefore, countries have increased their investment in new energy technology, and new energy vehicles have emerged as the times require. Analyzing the investment of new energy vehicle enterprises can also provide certain reference significance for industry development and investors.

1. Background of the selected title

According to data released by the China Association of Automobile Manufacturers in early 2024, under the dual effects of government policies and the market, the production and sales of new energy vehicles have maintained a rapid growth trend in 2023, with both production and sales exceeding 9 million units. Among them, the production of new energy vehicles was 9.587 million units, and the sales volume was 9.495 million units, an increase of 35.8% and 37.9% year-on-year, respectively. According to statistics from the China Association of Automobile Manufacturers, in 2023, China's automobile production and sales reached 30.161 million and 30.094 million vehicles, respectively, with a year-on-year increase of 11.6% and 12%. The growth rate of production and sales increased by 8.2 percentage points and 9.9 percentage points compared to the previous year. In terms of new energy vehicles, the production and sales of new energy vehicles in 2023 reached 9.587 million and 9.495 million, respectively, with a year-on-year increase of 35.8% and 37.9%; The sales of new energy vehicles account for 31.6% of the total sales of new vehicles. In December 2023 alone, the production and sales of automobiles reached 3.079 million and 3.156 million, with year-on-year growth of 29.2% and 23.5%, respectively. On June 8, 2023, the General Office of the Ministry of Commerce issued a notice on organizing and carrying out automobile consumption promotion activities, during which it was clearly stated that enterprises should promote new energy vehicle models such as micro trucks, micro trucks, and light trucks with high cost-effectiveness and strong practicality to rural areas, and encourage enterprises to further enrich the supply of new energy vehicle products in rural areas. We also need to strengthen the construction of mobile maintenance stations for new energy vehicles, rural maintenance points, and training for rural maintenance technicians, and continuously improve the after-sales maintenance service network for new energy vehicles in rural areas.

In recent years, China's new energy vehicle industry has flourished with the support of national subsidy policies, and well-known enterprises such as BYD and BAIC New Energy have emerged, attracting investor attention. But from the constantly changing subsidy policies for new energy vehicles in China in recent years, we can see that the support of the national subsidy policies is gradually decreasing. The changes in subsidy policies have had a great impact on the development of new energy vehicle enterprises, and even some new energy vehicle enterprises will face transaction activities such as mergers and reorganizations. Therefore, it is particularly important to conduct a reasonable and accurate enterprise value evaluation and analysis for new energy vehicle enterprises. The ecology of the global automotive industry is being reshaped, and new energy vehicles are an important opportunity that China must seize to transform from a major automobile manufacturing country to an automobile powerhouse. Effective evaluation conclusions can provide reference for managers in their business decisions, as well as valuable enterprise value for investors. Based on this,

this article takes China's new energy vehicle company BYD as an example, analyzes the development status, background, and financial situation, and draws evaluation conclusions and suggestions with reference significance.

2. Research purpose and significance

Developing new energy vehicles can greatly enhance the core competitiveness of China's automotive industry, and in the future, new energy vehicles will also occupy the vast majority of the market, especially electric vehicles in the new energy vehicle industry. Moreover, in the "Twelfth Five Year Plan" for the development of electric vehicle technology, China has clearly pointed out the need to vigorously develop the new energy vehicle industry to ensure China's energy security and develop a low-carbon economy. In this context, more and more enterprises and investors are paying attention to new energy vehicle companies. However, in recent years, on the one hand, the government's subsidies for the new energy vehicle industry have greatly decreased, making it difficult for many enterprises that rely on government subsidies to sustain themselves. On the other hand, new energy vehicles are limited by battery technology, making it difficult to make breakthroughs in technology in a short period of time. As a result, the recognition of new energy vehicles by most consumers is not particularly high. So although the new energy vehicle industry has great market and development prospects, the accompanying high risks have led to many enterprises and investors repeatedly failing. This article conducts research on the domestic new energy vehicle industry and BYD Co., Ltd., which has the largest asset scale and the most mature electric vehicle technology among new energy vehicle companies. The aim is to analyze the following two issues: 1. The development prospects of the new energy vehicle industry. 2. Investment value analysis of BYD Co., Ltd.

3. Literature review

Zhang Huawei and Lai Ying (2024) believe that the sustained development of the Chinese economy has provided favorable conditions for the automotive industry. However, with the increasing use of automobiles, environmental pollution problems are gradually intensifying. The emergence of new energy vehicles can effectively promote the coordinated development of the economy and the environment, and it becomes the main trend for the future development of the automotive industry. In order to better address the issue of technology lock-in in the development of new energy vehicles, China should focus on technological innovation and continuously highlight its technological advantages. Li Huijun (2024) believes that China has become the world's largest market for new energy vehicles. With the continuous maturity of technology and the gradual decrease in prices, the market demand for new energy vehicles will further expand. Li Danlei (2024) believes that in 2023, the sales of new energy vehicles in China accounted for over 30% of the total sales of new vehicles. Li Chengxin (2024) believes that in the context of the "dual carbon" strategy, thanks to strong government support, China's new energy vehicle industry has made rapid progress in technology and achieved commercialization. The annual sales volume of new energy vehicles has repeatedly reached new highs, and the number of vehicles in use has steadily increased.

Ⅱ.The Current Status of New Energy Vehicle Development

1. Definition of New Energy Vehicles

New energy vehicles refer to all other energy vehicles except those that use gasoline and diesel engines as power systems. The power source uses unconventional vehicle fuels, advanced technology in driving, and comprehensive vehicle power control (Sun Yue, 2020), resulting in advanced technology and principles, new technologies, and new structures of energy vehicles.

2. Classification of new energy vehicles

New energy vehicles include four types: hybrid electric vehicles (HEVs), pure electric vehicles (BEVs, including solar powered vehicles), fuel cell electric vehicles (FCEVs), and other new energy vehicles (such as high-efficiency energy storage devices such as supercapacitors and flywheels) (Chen Qi, 2020).

Hybrid electric vehicle: In a broad sense, hybrid electric vehicle refers to a vehicle that has two or more sets of energy storage devices and energy sources to obtain driving energy. Narrowly speaking, hybrid electric vehicles refer to cars with two power systems, one is a traditional fuel engine and the other is an electric motor. The two power systems work together to ensure the lowest pollution without affecting performance (Xu Xiaoqin, Ren Chaoyang, 2020).

A simple explanation for pure electric vehicles is that they rely solely on electricity for driving. Most pure electric vehicles in China are directly driven by electric motors and equipped with rechargeable on-board power sources. Their biggest advantage is that they do not use internal combustion engines and do not consume non renewable resources (Xie Wanru, Zhang Pengwei, 2020). Traditional cars also have extremely low pollution, and their biggest disadvantage is that they cannot be compared to traditional cars in terms of mileage and power due to battery technology limitations.

Fuel cell vehicles refer to vehicles that use clean energy sources such as hydrogen and methanol as fuel, generate electricity through chemical reactions, and use electric motors as the core of the vehicle's power system (Gao Dan, 2019). The difference between pure electric vehicles and pure electric vehicles is that they are charged through an external charger, converting electrical energy into chemical energy for storage, and then converting it into electrical energy during use. Fuel cells are different from fuel cells in that they directly use the fuel in the fuel cell to generate electricity. All electrical energy comes directly from the chemical energy of the fuel cell, eliminating the process of converting electrical energy into chemical energy (Ma Liqiang, 2019).

3. The current status of foreign and domestic new energy vehicle development

3.1 Current Development Status of New Energy Vehicles in Japan

Due to its limited geographical location and resource scarcity, Japan was one of the earliest countries to pay attention to and develop new energy vehicles, while also developing, utilizing, and promoting them; As early as 1965, Japan's national projects included the research and development of electric vehicles, which were mainly divided into four stages:

From the 1990 to 2000: In 1997, the Japanese government launched the first round of new energy vehicle

policies, encouraging the research and production of new energy vehicles. In 2001, Japan launched its first hybrid vehicle model, marking the initial application of new energy vehicle technology in the Japanese market.

From the 2000 to the 2010: In 2009, the Japanese government increased policy support for new energy vehicles, promoting the rapid development of the new energy vehicle industry. In 2010, Japanese car manufacturers launched electric models and began to produce and sell electric vehicles on a large scale. In 2012, the Japanese government established a New Energy Vehicle Promotion Fund to support the research and promotion of new energy vehicles.

From 2010 to 2020: In 2014, the Japanese government proposed the goal of popularizing new energy vehicles by 2030, aiming to achieve a 50% share of new energy vehicles in passenger car sales by 2030. In 2017, the Japanese government released the "Comprehensive Promotion Strategy for New Energy Vehicle and Electric Vehicle Infrastructure" to accelerate the construction of new energy vehicle charging stations. In response to the battery technology issues that restrict the development of electric vehicles, Japan has a very positive attitude towards solid-state batteries, and has adopted various support policies for new energy vehicle companies that research and develop solid-state batteries. As early as 2018, the Japanese government announced that it would invest 10 billion yuan in research and development over a period of five years from 2018 to 2022, generating economies of scale and reducing the production costs of automobiles, thereby recovering its disadvantage in lithium batteries and regaining its lead. Moreover, charging stations are commonly installed in parking lots, gas stations, and other facilities in Japan[7]. In 2020, the scale of Japan's new energy vehicle market continued to expand, and sales of electric and hybrid models steadily increased. Japan's preferential policies for new energy vehicles: On the one hand, consumers who purchase new energy vehicles are exempted from different proportions of purchase tax, weight tax, etc. based on different vehicle models and fuel consumption standards[15]. On the other hand, a large number of charging stations have been added. According to statistics, as of the first half of 2015, there were approximately 3000 public fast charging stations and 11000 ordinary charging stations in Japan, which greatly facilitated the use of new energy vehicles by car owners[16].

From 2020 to 2024: In 2021, Japanese car manufacturers increased their investment in research and development of electric vehicle technology, launching more high-performance electric vehicle models. In 2022, the Japanese new energy vehicle market ushered in the development opportunity of hydrogen fuel cell vehicles, promoting the application of hydrogen energy technology in the automotive field. In 2023, the Japanese new energy vehicle market further innovated, and autonomous driving technology was gradually applied in the field of new energy vehicles, improving the safety and convenience of automobiles. In 2024, the Japanese new energy vehicle market continues to maintain growth momentum, and new energy vehicles occupy an increasingly important position in the Japanese automotive market, injecting more vitality and innovation into the automotive industry.

From the above, it can be seen that the Japanese new energy vehicle market has gone through multiple stages such as policy support, technological innovation, and market promotion, continuously promoting the development and growth of the new energy vehicle industry.

3.2 Current Development Status of New Energy Vehicles in the United States

The development process of the new energy vehicle market in the United States is also a process full of change and innovation. From early exploration to today's booming development, it demonstrates the sustained

influence of new energy vehicles in the US market:

From 1990 to 2000: The US government established a series of plans and objectives for the research and promotion of new energy vehicles as early as the 1990s. In 1996, the United States launched the Clean Energy Vehicle Program, aimed at promoting the development and application of new energy vehicle technology. At the same time, the United States has established a large number of preferential policies for consumers who purchase new energy vehicles. One is that funding subsidies have been replaced by a tiered tax credit policy.

From 2000 to 2010: In 2008, then US President Obama set a goal that by 2015, the total number of pure electric and hybrid vehicles in use in the United States would reach 1 million[17]. To achieve this goal, on the one hand, a $825 billion stimulus policy has been introduced for automobile consumption and manufacturers, and on the other hand, the strictest fuel efficiency standards in history have been promulgated, forcing American citizens to choose new energy vehicles. The largest, strongest, and most widely recognized new energy vehicle company in the world is Tesla from the United States, while other well-known domestic companies in the United States, such as Chevrolet and Ford, are also committed to researching the new energy vehicle industry. In the same year, Tesla launched its first pure electric vehicle Roadster, marking the emergence of the American electric vehicle market. In 2010, the US government launched the "Electric Vehicle Action Plan", proposing the goal of achieving one million electric vehicles on the road in the United States by 2020. In May 2007, the United States Internal Revenue Service adjusted the personal income tax exemption to provide more benefits for consumers purchasing new energy vehicles. All models that meet the subsidy policy standards will have a cumulative sales volume of 60000 new energy vehicles as the standard. After the sales volume of new energy vehicles reaches 30000, consumers who purchase new energy vehicles can enjoy a 50% tax reduction; When the sales volume of new energy vehicles exceeds 45000 units, consumers who purchase new energy vehicles can enjoy a 25% tax reduction policy; When the sales of new energy vehicles exceed 60000 units, consumers will no longer enjoy any degree of tax reduction benefits. In 2008, the United States stipulated that starting from January 1, 2009, a tax deduction limit of $2500 to $7500 would be provided to the first 250000 consumers who purchased new energy vehicles. The second is to provide low interest loans and subsidies to encourage new energy vehicle enterprises to conduct research and development[18].

From 2010 to 2020: In 2012, Tesla launched the Model S model, which received widespread praise and led the development trend of the electric vehicle market. In 2018, Tesla launched the Model 3, which was more affordable and saw rapid growth in sales, becoming a best-selling model. In 2020, the scale of the new energy vehicle market in the United States continued to expand, and more and more car manufacturers joined the electric vehicle industry, intensifying competition. In 2016, General Motors launched the electric vehicle Bolt EV, which became a popular electric vehicle in the US market. The US government first issued a series of plans under the name of the White House in July 2016 to promote the development of the electric vehicle industry, including providing $4.5 billion in loan guarantee shares for new energy vehicle companies. Thirdly, in order to reduce the cost of purchasing new energy vehicles for consumers, the governments of various states in the United States provide cross subsidies for vehicle purchases. In addition to the federal government subsidy base, state governments in the United States also provide additional tax rebates, amounting to millions of dollars. The fourth is to provide subsidies to reduce the usage costs of new energy vehicle users. Such as reducing the cost of charging infrastructure and electricity bills. And provide preferential policies for reducing or exempting related fees such as exemption from parking fees and bridge tolls for new energy vehicles.

From 2020 to 2024: In 2021, the US government proposed climate change policies, increased support for new energy vehicles, and promoted the popularization and development of new energy vehicles. In 2022,

traditional car manufacturers such as Ford and Chevrolet will increase their investment in electric vehicles and launch more competitive electric models. In 2023, the new energy vehicle market in the United States continues to usher in a wave of innovation, with the application of autonomous driving technology gradually increasing in the field of electric vehicles, improving the level of vehicle intelligence. In 2024, the new energy vehicle market in the United States continues to grow, with electric and hybrid models occupying important positions in the market, injecting more vitality and power into the automotive industry.

Through this process, it can be seen that the new energy vehicle market in the United States has gone through multiple stages of development, with government policies, technological innovation, and market demand jointly driving the vigorous development of new energy vehicles in the US market.

3.3 Current Development Status of New Energy Vehicles in the China

Wang Siyu (2024) believes that the period from 2009 to 2013 was mainly the formation and proposal of the new energy vehicle strategy, which was a landmark event in this stage. In 2009, in order to accelerate the popularization of new energy vehicles, the central government increased its support for new energy vehicles, leading to the rapid development of new energy vehicles. The Development Plan for Energy Conservation and New Energy Vehicle Industry (2012-2020) was released in 2012, which clarified that the main development direction of China's new energy vehicles is pure electric vehicles.

China has always maintained a very enthusiastic and positive attitude towards the research and promotion of new energy vehicles. There are two main reasons for this: Firstly, China's objective conditions require that China must concentrate its efforts on developing new energy vehicles. As early as 2003, China became the world's second largest importer of oil, second largest consumer of energy, and second largest consumer of oil. More than half of China's oil relies on imports, and its annual demand for oil only increases without decreasing. The pollution caused by the annual use of oil has brought great resistance to China's energy conservation and emission reduction. Vigorously developing and promoting new energy vehicles is one of the important measures for China to achieve skills and arrange plans, and reduce oil consumption. The second is the requirements that China has for its existing technological development. The demand for private cars among Chinese people has always been high, but most of this market is dominated by German and Japanese cars, which rely on their technological advantages and excellent quality. If China wants to catch up with countries such as Japan and Germany in the automotive industry, developing new energy vehicles is a necessary path (Yingwen Wu. Fu Gu. et al.).

China has been closely following the trend since the launch of the "863" electric vehicle project in 2001, formulating policies to encourage and support the development of the new energy vehicle industry. Although this time point is later than developed countries such as the United States, Japan, and Germany, the gap between them is not significant, and once a technological breakthrough is achieved, it will occupy more markets in a short period of time. In recent years, China's BYD Co., Ltd. has only surpassed Tesla in the international market for new energy vehicles.

China's preferential policies for purchasing new energy vehicles can be roughly divided into two stages:

During the period from September 1, 2014 to December 31, 2017, according to the "Announcement on Exemption from New Energy Vehicle Purchase Tax" jointly issued by the Ministry of Industry and Information Technology, the State Administration of Taxation, and the Ministry of Finance on August 1, 2014, vehicles that meet the conditions for obtaining licenses, such as pure electric vehicles, plug-in hybrid vehicles, and fuel

cell vehicles, sold in China were exempted from purchase tax. In the "Energy Conservation and New Energy Vehicle Industry Development Plan (2012-2020)" issued by the State Council on June 28, 2012, plans and tasks for the current development of new energy vehicles were also mentioned:

1.Further innovate and implement core technologies for new energy vehicles.

2.Scientifically and reasonably plan the industrial layout of the new energy vehicle industry.

3.Accelerate the promotion, application, and pilot demonstration of new energy vehicles.

4.Actively promote the construction of charging facilities in public places, eliminate concerns about the promotion of new energy vehicles, and enable consumers to purchase with confidence.

The Chinese new energy vehicle industry has made significant progress from 2020 to 2023. The increasing global attention to environmental issues and renewable energy has inspired the Chinese government to issue a series of policies to support the development of new energy vehicles, driving the booming development of the market. The continuous increase in production and sales of new energy vehicles has made China the world's largest market for new energy vehicles. In terms of vehicle models, China's new energy vehicles include various types such as pure electric vehicles, plug-in hybrid vehicles, and fuel cell vehicles to meet the diverse needs of consumers. Major automobile manufacturers have launched competitive new energy vehicle models, which has accelerated market competition and product innovation. At the same time, the technological level of new energy vehicles in China is constantly improving, and important breakthroughs have been made in battery technology, charging technology, and other fields, which have improved the range and charging efficiency of new energy vehicles; In terms of government support policies, China has increased its support for the new energy vehicle industry, including various policy measures such as car purchase subsidies, charging infrastructure construction, and promotion of green energy. The implementation of these policies has promoted the marketization of new energy vehicles and the improvement of the industrial chain, laying the foundation for the sustainable development of the industry.

Looking ahead to the future, with continuous technological innovation and policy support, China's new energy vehicle industry is expected to usher in even more prosperous development.

Ⅲ. Theoretical basis

This article mainly uses literature analysis and quantitative research methods for the investment analysis of BYD Company. Through literature review, the financial reports of BYD Company in recent years were reviewed, and a large amount of literature was searched on the development status of the new energy vehicle industry in recent years, the development of domestic and foreign enterprises, and the policy changes of the country towards the new energy vehicle industry, in order to conduct a comprehensive analysis of China's new energy vehicle BYD company. Using quantitative research methods to obtain a large amount of textual data, conducting comprehensive quantitative analysis on this data, in order to draw conclusions and suggestions with reference significance

Ⅳ. The BYD Company Introduction

BYD was founded in 1995, with a team of over 20 people. In 2003, it grew to become the world's second

largest manufacturer of rechargeable batteries, and in the same year, BYD Auto was formed. BYD has taken advantage of its reputation for "independent intellectual property" and its acquisition of Qinchuan Automobile, giving it a first mover advantage over other newcomers. BYD Automobile follows the development path of independent research and development, independent production, and independent branding, and is committed to creating truly high-quality and affordable national cars. The design of its products not only draws on advanced concepts of international trends, but also conforms to the aesthetic concepts of Chinese culture. By leveraging its technological advantages in the battery and automotive fields, actively exploring more resources and markets, and shifting its development focus to the new energy vehicle field, it has rapidly risen to become a leading enterprise in independent automotive brands in China. BYD is at the forefront of electric vehicle technology in the world.

BYD's English name is "build your dreams" (abbreviated as BYD), which means "achieving your dreams". BYD's new logo will no longer use the original blue and white alternating colors, and the pattern will be changed to an elliptical shape, with the addition of light and shadow elements. The arrangement of fonts and the color of graphics have undergone significant changes, highlighting BYD's innovation, technology, and corporate culture.

Ⅴ. Analysis of BYD's Investment Value and Investment Suggestions

1. Analysis of the Investment Value of BYD's New Energy Vehicles

(1) Internal and external environment analysis

From an internal perspective, BYD has the following advantages and disadvantages:

1. There is in-depth research on the issue of new energy vehicle batteries. The most widely developed and widely accepted among consumers in the field of new energy vehicles is electric vehicles, and the biggest core technical problem currently troubling electric vehicles to replace traditional cars is the battery problem. At present, electric vehicles on the market require about 6 to 8 hours to fully charge when using AC charging stations (commonly known as slow charging), and about 4 hours to fully charge even when using DC charging stations (commonly known as fast charging). However, electric vehicles can travel about 100 to 200 kilometers when fully charged. Therefore, the biggest problem with new energy vehicles now is battery problems, and BYD has in-depth research on battery problems.

2. Possessing a complete industrial chain. Under the conditions of large-scale industrial mass production, BYD has a complete industrial chain from battery production to system design, and then to vehicle assembly and forging, which is the overall advantage brought by BYD's absolute first shipment volume in China. BYD has the advantage of not being limited by external conditions in extreme situations, as it can produce all its parts on its own.

3. Leading technology and design concepts. The core technologies of BYD's pure electric vehicle include its own battery cells, independently developed IGBT chips, and BYD's globally pioneering "542" technology, which redefines the standards for new energy vehicles in terms of performance, safety, and fuel consumption. New energy vehicle users only need to pay the least amount of energy to achieve better driving and safety performance, which is more environmentally friendly, economical, and safe than traditional cars. The "Tang, Song, Qin, and Yuan" series of BYD's new series incorporate traditional Eastern cultural elements and Western aesthetics in their exterior design, which are deeply loved by Chinese people.

4.BYD's automotive technology is outdated. Although BYD has a leading domestic technology in the battery of pure electric vehicles, it is even in a leading position internationally. However, BYD's true entry into the automotive industry began with the acquisition of JAC Motors in 2003. Its automotive manufacturing history has only been 21 years, and compared to traditional automotive companies such as Honda and Volkswagen, as well as new energy vehicle companies such as Tesla, its manufacturing technology is still outdated. There is still a certain gap in its manufacturing processes for power transmission, internal design, driving comfort, and other aspects of automobiles.

From an external perspective, BYD also has the following advantages and disadvantages:

1. The general trend of vehicle electrification and intelligence in the future and the support of national policies. Electric vehicles are the key to achieving vehicle electrification and intelligence, which is the global environment and trend for the future development of automobiles. And the concept of energy conservation, emission reduction, and green development has always been advocated by China. If new energy vehicles can replace traditional cars, China's annual energy-saving and emission reduction tasks can make great progress. At the same time, if China wants to achieve "overtaking" in the development of cars in developed countries such as Germany, Japan, and the United States, vigorously developing new energy vehicles is a necessary path. Therefore, China has a large number of cost and tax reduction policies and policy subsidies for new energy vehicle companies every year, which encourage them to increase their research and development and promotion of new energy vehicles.

2. China has a huge potential market and a well-established new energy vehicle supply chain system. Currently, more developed areas in China such as Beijing and Shanghai have begun to introduce pure electric buses, equipped with corresponding fast charging stations at bus stations. At the same time, buses do not require long-distance driving or excessive power when changing routes in cities, which reduces some of the impact of the inherent technical shortcomings of electric vehicles and can also reduce the use of gasoline to reduce costs and reduce pollution. BYD has adopted a joint strategy with local bus companies to open the door to the bus market.

3. Chinese consumers have a strong willingness to purchase. In developed areas such as Beijing, Shanghai, and Guangzhou, there are strict restrictions on car license plates, and many car owners are unable to obtain them. However, the license plate requirements for new energy vehicles are relatively broad, and many car owners choose new energy vehicles as a secondary option.

4. Long investment stage. The most important core technology of new energy vehicles is the research and development of batteries, which requires a long time, huge investment of manpower and material resources, and it is also difficult to quickly monetize and create profits in a short period of time. If the investment return period is too long, it may pose many threats to the company, such as a broken capital chain.

5. The weakening of preferential policies. In recent years, the preferential policies for new energy vehicles issued by the State Council have been continuously weakening, and the strength of future preferential policies is also increasing. The existence of policies will bring more risks to the operation of enterprises.

6. Competition from other new energy vehicle companies. Although BYD is currently the new energy vehicle company with the largest market share in the domestic market, Tesla in the United States is the world's largest enterprise with the largest market share. At the same time, in recent years, self operated and joint venture new energy vehicle companies have continuously emerged to divide the new energy vehicle market. Once other companies achieve revolutionary technological breakthroughs, it will have an incalculable impact on BYD. In addition, with the impact of new domestic competition from car companies such as Geely, NIO, Xiaopeng, Ideal, and Xiaomi, BYD will face a harsh competitive situation.

(2) Financial status analysis

1. Solvency analysis

Table 1. Main Accounting Data and Financial Indicators of BYD Company's Debt Repayment Ability for the Years 2019-2023
Unit: 100 million RMB

Item	2019	2020	2021	2022	2023
Total assets	1956.42	2010.17	2957.80	4938.61	6795.48
Total Liabilities	1330.40	1365.63	1915.36	3724.71	5290.86
Accounts payable	439.34	412.16	362.51	388.28	618.66
Asset liability ratio	68.00%	67.94%	64.76%	75.42%	77.86%
Current ratio	99.02%	104.86%	96.97%	72.24%	66.60%
Quick ratio	75.35%	75.36%	71.66%	48.51%	47.27%
Interest coverage ratio	1.78	3.37	4.54	-	-

Note: The data is sourced from the company's annual report

From Table 5-1, it can be seen that from 2019 to 2023, as the total assets increased year by year, BYD's total assets and liabilities increased year by year. The asset liability ratio is 68.00%, 67.94%, 64.76%, 75.42%, and 77.86% respectively, which is above 60% every year. In the past two years, it has exceeded 75%, and accounts payable is not very stable. There has been an increasing trend in the past two years, far exceeding the target, and there is a risk of debt repayment. Generally speaking, the current ratio of the manufacturing industry is around 2, and a quick ratio of around 0.85 is more reasonable. BYD's current ratio has been around 1 for several years, and the quick ratio has been around 0.77, indicating poor asset liquidity and high short-term repayment risk. It is speculated that the main reason for the decrease in BYD's current ratio is due to BYD's high research and development investment, which leads to a large demand for funds. Therefore, BYD may have a large amount of short-term borrowing, resulting in increased short-term debt repayment pressure and a decrease in its current ratio.

2. Operation ability analysis

Table 2. Main accounting data and financial indicators related to BYD's operational ability from 2019 to 2023
Unit: 100 million RMB

Item	2019	2020	2021	2022	2023
Current asset turnover rate	1.15%	1.43%	1.56%	2.08%	2.22%
Inventory turnover rate	4.92%	5.50%	5.78%	6.93%	7.22%
Accounts receivable turnover rate	2.74%	3.68%	5.58%	11.30%	11.96%
Fixed asset turnover rate	2.74%	3.01%	3.73%	4.39%	3.32%
Total asset turnover rate	0.65%	0.79%	0.87%	1.07%	1.03%

Note: The data is sourced from the company's annual report

From Table 5-2, it can be seen that the turnover rate of BYD's current assets has been increasing every year from 2019 to 2023, indicating that the company has effectively managed and utilized its current assets, better controlled costs, and is beneficial for increasing revenue. The inventory turnover rate is also increasing year by year, indicating that the time from purchase to sale of products is short, sales growth is fast, inventory is low, and funds are less occupied by product backlog. The turnover rate of fixed assets and total assets also fluctuates little and is relatively stable, all of which indicate that the overall operational capacity of the enterprise is strengthening.

3.Analysis of profitability indicators

Table 3. Main accounting data and financial indicators related to BYD's profitability from 2019 to 2023
Unit: 100 million RMB

Item	2019	2020	2021	2022	2023
Operating income	1277.39	1565.98	2161.42	4240.61	6023.15
Profit from the Core	21.23	75.87	35.40	212.55	331.59
operating profit	23.12	70.86	46.32	215.42	381.03
Total profit	24.31	68.83	45.18	210.80	372.69
Net profit	21.19	60.14	39.67	177.13	313.44
Net cash flow generated from operating activities	147.41	453.93	654.67	1408.38	1697.25
Basic earnings per share (yuan/share)	0.5	1.47	1.06	5.71	10.32
Diluted earnings per share (yuan/share)	0.5	1.47	1.06	5.71	10.32
Net assets per share (yuan/share)	19.20	20.45	32.66	38.14	47.68
Main profit margin	1.66%	4.85%	1.64%	5.01%	5.51%
Sales gross profit margin	16.29%	19.38%	13.02%	17.04%	20.21%
Net profit margin from sales	1.66%	3.84%	1.84%	4.18%	5.20%
Return on equity (ROE)	2.84%	7.44%	3.20%	14.97%	21.64%
Return on total assets (ROTA)	1.08%	2.99%	1.34%	3.59%	4.61%

Note: The data is sourced from the company's annual report

Profitability refers to the ability of an enterprise to obtain profits, and the evaluation indicators mainly include main operating profit margin, sales net profit margin, return on equity, return on total assets, etc. From Table 5-3, it can be seen that BYD's operating revenue has been increasing year by year, while its main profit margin, sales net profit margin, and return on equity have performed poorly in the first three years, with some increasing and others decreasing. However, in 2022 and 2023, it has developed rapidly and significantly,

with a significant increase in operating profit, a return on equity (ROE) exceeding the target, and a positive development in net asset return. The profitability of the company from 2022 to 2023 has increased significantly compared to the previous three years, which is related to its good sales situation in the domestic market. The decrease and increase in gross profit margin of the automotive business are mainly affected by the decline in policy subsidies and the increase in raw material prices. In the first three years, the basic earnings per share increased first and then decreased. In the last two years, the net assets per share increased year by year. The stock price of BYD was significantly higher than the company's performance, and there was a certain risk of an investment bubble.

4. Growth Ability Analysis

Table 4. Main accounting data and financial indicators related to BYD's growth capacity from 2019 to 2023
Unit: 100 million RMB

Item	2019	2020	2021	2022	2023
Total assets	1956.42	2010.17	2957.80	4938.61	6795.48
Operating income	1277.39	1565.98	2161.42	4240.61	6023.15
Total shareholders' equity	567.62	568.74	950.70	1110.29	1388.10
Revenue growth rate	-1.78%	22.59%	38.02%	96.20%	42.04%
Growth rate of shareholder equity	2.83%	0.20%	67.16%	16.79%	25.02%
Total asset growth rate	0.55%	2.75%	47.14%	66.97%	37.60%

Note: The data is sourced from the company's annual report

Growth ability is the potential ability of an enterprise to expand its scale and strength on the basis of survival, mainly analyzed through factors such as revenue growth rate, total asset growth rate, shareholder equity growth rate, total assets, and total asset growth rate. From 2019 to 2023, BYD's total assets have been increasing year by year, with operating revenue of 127.739 billion yuan, 156.598 billion yuan, 216.142 billion yuan, 424.061 billion yuan, and 602.315 billion yuan, respectively. The growth rate of operating revenue has been above 20% every year for the past four years, especially in 2022, with a significant increase of 96.20%. The total asset growth rate has also greatly improved since 2021. The operating income fluctuates greatly and is not very stable, but overall it is higher than the target. The quality of operating income is very high, and the company is in rapid development. BYD's shareholder equity growth rate has significantly increased since 2021 and has since fallen back to around 20%. Overall, BYD's development trend is good, but it is not stable, which is a normal state of growth for the company.

2.Investment recommendations for BYD enterprises

2.1 Reasons for Supporting Investment in BYD Company

Through the analysis of the investment value of BYD enterprises in the previous text, it can be seen that BYD enterprises have considerable investment value. Based on its development background, the following reasons can be obtained to support BYD's investment behavior:

(1) There is an undeveloped and vast new energy vehicle market in China, and BYD, as a leading enterprise in China's new energy vehicles, has the opportunity to occupy most of the market. On the one hand, consumers in first tier cities are turning to new energy vehicles due to traditional car license plate restrictions and high oil prices, and more and more consumers are choosing the latter between the two. On the other hand, BYD companies have lower influence in the advertising market compared to traditional cars, and many consumers in second - and third tier cities are not familiar with new energy vehicles. With the promotion of new energy vehicles, they will be accepted by consumers in second - and third tier cities at lower prices. At the same time, with the development of cities, there will also be a demand for new energy vehicles in second - and third tier cities. At that time, the demand for new energy vehicles from consumers will explode.

(2) The support of Chinese policies. China attaches great importance to emerging technologies such as new energy vehicles and artificial intelligence during the 13th Five Year Plan, and the State Council has also introduced a large number of subsidy policies to encourage enterprises to conduct research and development promotion. On April 28, 2023, the Political Bureau of the Communist Party of China Central Committee proposed to consolidate and expand the development advantages of new energy vehicles, accelerate the construction of charging piles, energy storage facilities, and the renovation of supporting power grids during the analysis and research of the current economic situation and economic work. On May 5th of the same year, the State Council executive meeting requested further optimization of policies to support the purchase and use of new energy vehicles, and encouraged enterprises to enrich the supply of new energy vehicles. On June 2 of the same year, the State Council executive meeting discussed policy measures to promote the high-quality development of the new energy vehicle industry. Recently, the General Office of the State Council and relevant departments of the State Council have successively introduced a series of policies on new energy vehicles, and the purchase tax on new energy vehicles continues to be reduced. The General Office of the State Council has issued the Guiding Opinions on Further Building a High Quality Charging Infrastructure System, which has made specific arrangements for the construction of charging infrastructure. By 2030, a high-quality charging infrastructure system with extensive coverage, moderate scale, reasonable structure, and complete functions will be basically built, providing strong support for the development of the new energy vehicle industry and effectively meeting the charging needs of the people for travel. Once breakthrough progress is made in the core technology of new energy vehicles, the country is highly likely to adopt more favorable policy support.

(3) BYD has a profound layout, a large scale, and a good development trend. The development of new energy technology has a positive impact on consumer car buying behavior and attitudes; Moreover, consumer attitudes also play a mediating role between the development of new energy technologies and consumer car buying behavior **(**Liu Qian, 2024**)** . At present, there are still a large number of technical problems in the core technology of new energy vehicles. Although some technological progress has been made in recent years, there are still technical problems such as flammability, slow charging, and long charging time. At the same time, the weakening of national preferential subsidies is also affecting the income of BYD enterprises. However, based

on BYD's current financial situation, its development trend is good, and BYD has not reduced its investment in technology research and development, logistics support, etc. due to the expansion of production scale and temporary breakthroughs in technology in recent years. These factors will directly affect whether BYD can continue to maintain its leading position as a domestic new energy vehicle enterprise.

(4) Background of the times. The outbreak of the epidemic in 2020 has had a huge impact on various industries worldwide, including the new energy vehicle industry. Many car manufacturers have had to stop or reduce production in response to the challenges posed by the pandemic. In this context, due to its complete production line in China and the timely and effective epidemic control measures taken by the Chinese government, BYD has been relatively less affected compared to enterprises in other countries. As a leading new energy vehicle manufacturer in China, BYD actively responded to the government's call during the epidemic and made contributions to the fight against the epidemic, also winning praise from the Chinese people. BYD has established a good image and enhanced its brand reputation through this positive sense of social responsibility and action. With the end of the epidemic era and the growth of global demand for new energy vehicles, BYD, as a local Chinese enterprise, has a certain competitive advantage in the field of new energy vehicles. By continuously innovating, improving product quality and technological level, BYD has the opportunity to seize opportunities in the global market, narrow the gap with other international enterprises, and achieve better development.

(5) BYD's strong after-sales service system. BYD Enterprise has nearly 20000 after-sales employees and more than 600 online after-sales service points, covering various parts of the country, providing comprehensive after-sales services to consumers. In physical stores, BYD's 4S stores provide free comprehensive inspection services for car owners to ensure the normal operation and safety of the vehicle. In addition, BYD also offers an ultra long warranty period of up to six years or 150000 kilometers, providing consumers with longer protection and services. This comprehensive after-sales service system helps to enhance consumer trust and satisfaction with the BYD brand, while providing users with more convenient and reliable after-sales support. By continuously optimizing after-sales service, BYD can better meet the needs of consumers, enhance brand loyalty, and stand out in fierce market competition.

2.2 Notes on investing in BYD company

Although the new energy vehicle industry is developing well and BYD company has considerable investment value, there are also some problems in analyzing the current development background and financial situation. Therefore, investing in BYD company should also pay attention to the following issues:

(1) Ensure the integrity of the funding chain. BYD faces significant long-term debt pressure and debt repayment risks. If the operation falls short of expectations, it will make it difficult for the company to borrow and affect future development. New energy vehicles require a large amount of funds for research and development, market expansion, and talent introduction. Therefore, it is necessary to always pay attention to BYD's asset liability ratio to ensure that the company maintains good financing capabilities and avoids the phenomenon of fund chain breakage.

(2) Avoid blind expansion. Although there is a great potential market for new energy vehicles at present, BYD should also expand its production scale appropriately to occupy a larger market. However, it is also important to constantly pay attention to whether the construction of new production bases is reasonable, in order to avoid the huge financial expenditures caused by blind expansion that may affect the normal operation

of the enterprise.

(3) The rise in raw material prices and intensified industry competition pose risks. If the price of upstream battery raw materials increases, it will affect the sales of electric vehicles, and the cost pressure cannot be passed on to consumers, which will compress the profit space of companies in the industry. Moreover, if industry competition intensifies and other automobile manufacturers rely on technological strength or low price competition to obtain orders, it will affect the company's competitiveness and ability to obtain orders. The company should increase investment in innovative research and development and ensure product quality to maintain competitiveness.

Ⅵ . Concluding Remarks

This article analyzes the current development status of new energy vehicles. Taking BYD Company as an example, by comparing data from recent years, this article comprehensively analyzes the development and financial status of China's leading new energy vehicle company, BYD Company, from the dimensions of internal and external environment, profitability, debt repayment ability, and development ability.

Although the conclusion drawn is that BYD's development is relatively strong, there is still significant room for improvement in debt repayment and profitability. Moreover, due to long-term support from national policies and the trend of electrification and intelligence in the development of new energy vehicles, the market share of new energy vehicle companies led by BYD will also significantly increase in the future. These signs indicate that the development prospects of new energy vehicles are very broad.

On the surface, BYD's financial situation is relatively stable. The sales of new energy vehicles are increasing year by year, and the operating revenue is also increasing year by year. However, the overvaluation cannot fully reflect its existing performance. Therefore, in the short term, the global new energy vehicle companies are generally overvalued, and there will certainly be a foam phenomenon, and the support of national policies will also be weakened year by year. The development of other new energy vehicle companies will also lead to increased competition in the industry, so investors should invest cautiously; In the long run, the new energy vehicle industry has not changed its development environment in the future, such as electrification and intelligence. Its development trend will still be strong and it still has huge market potential. Therefore, investors can pay attention to the financial situation, policy environment, technological innovation, and product quality of new energy vehicle enterprises. By intervening at a reasonable investment opportunity in the future, lower risks can be avoided and larger returns can never be obtained.

In the future, if major automotive companies want to firmly occupy the market, they must have their own core competitiveness in product quality and technology, so as not to be eliminated by the market. Therefore, when making investments, they should pay more attention to investment quality and encourage overseas operating enterprises to enhance their independent innovation and sustainable business capabilities.

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