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Research on the Investment Value of the New Energy Vehicle Industry

Shijie He[1,a,*]

[1]*International Education College, Xinjiang Agricultural University, Urumqi 830000, China*
a. cloud111123@163.com
**corresponding author*

Abstract: At present, the reserves of fossil energy resources are constantly decreasing, and it is foreseeable that there will be a shortage of fossil energy in the future. At the same time, the protection of the environment in various countries is constantly increasing, which makes the market for traditional fuel vehicles increasingly narrow. Therefore, to solve these problems, the emergence of new energy vehicles has become an inevitable choice for various car companies. The emerging energy vehicle market, which has emerged with the research and development, is still a constantly developing and unknown market. The goal of this article is to study the investment value of the current emerging energy vehicle market by analyzing emerging energy vehicles business such as NIO, Xiaopeng, and Li. The main research content of this article is the various capability indicators of NIO, Xiaopeng, and Li three car companies, to judge the investment value. This article draws some conclusions through research, including the enterprise value multiples of three car companies, four capability indicators, finally, it is concluded that the current emerging energy vehicle market is not worth investing in for investors. These achievements have a certain reference value for investors to invest in the emerging energy vehicle industry.

Keywords: new energy vehicles, investment, financial analysis

1. Introduction

1.1. Background

Last several years, the new energy vehicle industry has shown a rapid development trend, and sales have continued to grow despite the impact of the epidemic. In terms of technology, new energy vehicle technology is constantly innovating, improving, and advancing. In terms of policy support, there has been a decrease in policy support for new energy vehicles in recent years, but it still brings many conveniences to the development of the industry. In terms of demand, concepts such as environmental protection and energy conservation are gradually gaining popularity, and people's demand for new energy vehicles is constantly increasing. It can even be said that new energy vehicles are becoming the first choice in consumers' minds. In this rapidly developing and fiercely competitive market environment, the investment enthusiasm of the new energy vehicle industry is also constantly increasing. So this research report will take several rapidly developing new energy vehicle companies as examples, analyze their financial data, etc., to help investors better understand the financial

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structure and investment value of new energy vehicle companies, and help investors better choose enterprise investments to obtain higher returns.

1.2. Related Research

First of all, this report reviews some literature to understand the relevant information about the capital structure of emerging energy automobile enterprises. Liu and Wang used factor analysis and multiple linear regression to study the relationship between financial structure and achievement of new energy vehicle business, then drew three conclusions. Regarding the first conclusion, Liu and Wang found a negative correlation between the performance of NEV companies and the company's asset-liability ratio. Second conclusion is that the new energy automobile enterprise the current debt ratio and corporate performance were positively related. The final conclusion is that the new energy automobile enterprises of the top ten shareholders of shareholding and corporate performance is negative correlation [1]. Bao used the comparative case analysis method to study and analyze the financing mode of the new energy vehicle business, taking FAW Car Co., Ltd. and NIO Automobile as examples. Finally, it is concluded that FAW Car Co., Ltd. has chosen internal financing and equity financing to build its financing model, successfully maintaining sufficient funds, while NIO Automobile relies more on external financing in its financing model [2]. Zhao used the CAMP model and WACC to analyze and study the capital structure of the emerging energy vehicle industry, using Tesla and NIO as examples. He concluded that the high cost of financial in the emerging energy vehicle industry may be due to high debt costs, slow industry development, and low corporate profits [3]. Gong et al. studied the financing efficiency of China's new energy vehicle companies by establishing DEA and logistics models, and believed that the financing support efficiency with listed emerging energy vehicle companies first increased, then decrease, this is consistent with the overall trend of enterprise reform. Meanwhile, the stability of the efficiency of debt financing is higher than that of equity financing [4].

Secondly, this report reviews some of the literature for relevant information on the value of investments in emerging energy vehicle companies. Guo adopted Harvard analysis framework and combined PEST and SWOT analysis methods to study and analyze the investment value of NIO Automobile. Finally, he concluded that NIO Automobile has good investment value, especially after 2020, its investment value has further increased [5]. Peng used literature research methods, a combination of theoretical and empirical methods, and comparative analysis to study and analyze the investment value of NIO Automobile. Finally, he concluded that NIO Automobile has certain investment value in the future development of the industry and its development [6]. Han and Yang analyzed the investment value of new energy vehicles through external macro environment analysis and financial statement analysis, taking Chang'an Automobile as an example. It is concluded that breakthroughs in technology, costs, and market size in the new energy vehicle industry will take some time, but with the maturity of technology, cost reduction, and market development, the new energy automobile industry can certainly achieve higher and better development and results in the future [7].

Finally, this report reviews some literature to understand the market information and development of the emerging energy vehicle industry. Use Tesla as an example, Li analyzed the business of new energy vehicle companies and established a logit model and a bass model to explore the market development of electric-powered vehicles. Finally, it is concluded that Tesla still holds a significant portion of the US market share, but as its competitors increase, Tesla must make decisions on market strategy in the future and achieve cost control by setting a more competitive price to attract customers [8]. Jiang et al. studied Tesla's corporate value based on WACC, DCF, and multiple methods, and finally concluded that Tesla is highly praised by the majority of Cool Tigers and has a very promising future. However, Tesla's data contains exaggerated elements, so Tesla's corporate value is overestimated [9]. Lv and Wang studied the transformation of the emerging energy automobile

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industry under the current digital economy background through the method of market analysis, and drew five conclusions. The shortage of chips restricted the transformation and development of the industry, the digitalization of raw material production became a major problem, to the improvement of digital charging pile become a pressing problem, new energy vehicles access to the Internet will bring new security issues, and the gradual disappearance of policy subsidies will increase the cost of enterprises [10].

1.3. Objective

The goal of this report is to analyze the current enterprise value multiple, profitability, development ability, solvency and operating ability of the selected new energy automobile enterprises, so as to determine the investment value of the three companies and provide suggestions for investors.

2. Method

2.1. Enterprise Value Multiple

Enterprise value multiple is a kind of value evaluation index used by many enterprises. The advantage of this valuation method is that it will not be affected by different corporate tax rates, which can make the valuation of listed companies in different regions more comparable. At the same time, the method is not affected by the capital structure of enterprises, which is conducive to the comparison of valuation levels among different companies. Finally, this valuation method also offsets the potential impact of non-cash costs such as depreciation and amortization, allowing for a more accurate valuation of the company. These data can be obtained by the following formula.

$$\text{Enterprise value multiple} = EV/EBITDA \tag{1}$$

2.2. Profitability

Profitability can demonstrate a company's profitability, also known as the ability to increase the value of enterprise capital. It is usually said over a period of time for the company to produce amount and level of income. Analyzing profitability is beneficial for investors to compare the capabilities of the company and its competitors, to determine whether to invest. And this data can be obtained by the following formula.

$$\text{P/E ratio} = \text{market price per common share}/\text{earnings per common share} \tag{2}$$

$$\text{Sales gross profit margin} = (\text{sales revenue} - \text{sales cost})/\text{sales revenue} \times 100\% \tag{3}$$

$$\text{Net profit} = \text{total profit} \times (1 - \text{Income tax rate}) \tag{4}$$

2.3. Operating Capacity

The operational capability of a company refers to its operational capability, which can also be referred to as its ability to use various assets to earn profits. The operational capability of a company displays the turnover of its capital operations. Analyzing the operational capability of a company, it helps investors determine the financial security of the company, the degree of capital preservation, and the profitability of assets, thereby determining whether to invest and helping to make corresponding investment decisions. And this data can be obtained by the following formula.

$$\text{Accounts receivable turnover rate} = \text{operating income}/\text{average balance of accounts receivable} \tag{5}$$

$$\text{Inventory turnover rate} = \text{operating costs}/\text{average inventory balance} \tag{6}$$

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2.4. Solvency

Debt-paying ability is an indicator used to analyze a company's ability to repay its debts when they come due. At the same time, it is also an important indicator to reflect the company's operating ability and the company's financial status. Utilizing a company's debt paying ability analysis, investors can examine its ability to continue operating and its risks, which helps predict the company's future earnings and thus assist in making investment decisions. This data can be calculated by the following formula.

$$\text{Current ratio}=\text{current assets}/\text{current liabilities} \quad (7)$$

$$\text{Asset liability ratio}=\text{total liabilities}/\text{total assets} * 100\% \quad (8)$$

2.5. Development Capability

Enterprise development capability can help analyze a company's potential ability to expand its scale and strength while maintaining daily business operations. By analyzing a company's development ability, investors can make certain predictions about its future operating conditions and determine whether it is worth investing.

$$\text{Growth rate of operating revenue}=\text{growth amount of operating revenue in the current year}/\text{total operating revenue in the previous year} \times 100\% \quad (9)$$

$$\text{Capital accumulation rate}=\text{increase in owner's equity of the year}/\text{owner's equity at the beginning of the year} \times 100\% \quad (10)$$

3. Development Environment

In recent years, due to the cause of the outbreak, the growth of new energy automotive industry environment influenced by a certain degree. Due to the impact of the epidemic, some regions have experienced logistics stagnation, which has led to a shortage of parts for some car companies. The lack of parts can lead to a decrease in production and delayed delivery for new energy car companies, which is not a good thing for companies. Meanwhile, the sales of new energy vehicle companies have also been affected. Due to the pandemic, people's income has been affected and decreased in recent years, which has led to a decrease in people's purchasing power and desire for cars. At the same time, the reduction in production by car companies has led to a decrease in sales and a decrease in profits for car companies.

For example, NIO Motors delivered 5074 vehicles in April 2022, a year-on-year decrease of 28.6%. Ideal Automobile currently only has one model available for sale, Ideal ONE. In April, it delivered 4167 vehicles, a year-on-year decrease of 24.8%. From January to April, it delivered a total of 35883 vehicles, with a month-on-month decrease of over 60%.

But the impact brought by the epidemic is not all bad. In this environment, the country's support policies for new energy vehicle enterprises have been continued, such as tax reduction and fee reduction. This will undoubtedly help new energy vehicle companies to receive assistance in promoting their continued development in the context of an economic downturn.

In addition, the epidemic has also brought development opportunities for new energy vehicle companies. Firstly, there is competition with traditional fuel vehicles. Under the epidemic control measures, consumers' opportunities and desires for long-distance travel have decreased passively or proactively, and the sales of fuel vehicles have significantly declined. In the meantime, most of the new energy automobile company used by the new sales model, namely the online sales model, has also begun to exert its unique advantages under epidemic control policies. However, most traditional fuel vehicle companies have not yet established a complete online sales model, and most stores are

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still using traditional billing models. Under the epidemic control measures, the order volume will inevitably be affected. In addition, the current fuel prices are still at a high level, and the cost of using traditional cars is relatively high. New energy vehicle companies have advantages in new sales methods and usage costs, which may accelerate the shift in consumption trends. Based on these factors, although new energy vehicle companies have also been affected by the epidemic, they have also ushered in a new development opportunity.

4. Results and Discussion

As shown in Table 1, the financial ratios of three selected companies are calculated.

Table 1: Financial ratios of three selected companies.

Item	Li Auto Inc	NIO Inc	Xpeng Inc
EV	619.21	777.72	393.5
EBITDA	-16.93	-100.56	-75.7
EV/EBITDA	-36.57	-7.73	-5.20
Gross margin	19.41%	10.44%	11.50%
P/E ratio	-198.32	-6.38	-5.01
Net profit margin	-4.49%	-29.55%	-34.03%
Accounts receivable turnover rate	943.54	9.63	7.40
Inventory turnover rate	5.36	5.39	6.14
Current ratio	2.45	1.29	1.81
Asset liability ratio	47.78%	71.28%	48.37
Business growth rate	67.68%	36.33%	27.97%
Capital accumulation rate	9%	-26.25%	-8.91%

4.1. Financial Performance

Based on the above data indicators, it can be found that the gross profit margin of all three companies is above 10%, but the difference is not significant except for Li Auto Ltd. This indicates that NIO and Xpeng have certain profitability in their products, but the difference in profitability is relatively small. The higher gross profit margin of Li Auto Ltd's automobile indicates that Li Auto Ltd's products have higher revenue. The reason for this may be that the sales cost management of the enterprise is good, resulting in a higher gross profit margin. But in addition, the net profit margin and P/E ratio of the three companies are all negative, indicating that there are certain issues with their profitability. This may be due to the high administrative and research and development costs of the three companies.

Then, regarding the operational capabilities of the three companies, according to the indicators, it can be found that their accounts receivable turnover rates have all performed well. Among them, the accounts receivable turnover rate of Li Auto Ltd is very high, this indicates that the fund recovery speed of Li Auto Ltd is fast, the average fund recovery cycle is short, the probability of bad debts is small, the loss is small, the asset flow is fast, and the solvency is strong. And this high value may be because that the accounts receivable of the ideal company are much lower than those of the other two

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companies. In addition, the inventory turnover rates of the three companies have also performed well, and the data gap is not significant, indicating that these three companies have relatively good inventory liquidity, and their inventory asset liquidity is not significantly different. Overall, this is a good phenomenon. On the surface, these three companies have a relatively good ability to use their various assets to earn profits.

Based on the debt repayment ability indicator, it can be found that the current ratios of the three companies differ significantly, but none of them are below the minimum limit, indicating that all three companies are capable of repaying debts on time. However, Li Auto Ltd may have a high occupation of current assets, which will reduce the efficiency of fund utilization and be unfavorable for the company to earn profits. This may be related to the company's large cash reserves, and the current assets are far greater than current liabilities. However, the ratio of NIO Ltd is close to the minimum limit, which indicates that there may be a risk that it is difficult to repay the debt on schedule. This may be related to the fact that NIO Ltd has too many accounts payable and fewer current assets. In addition, it can be observed that the asset-liability ratios of the three companies also differ significantly. Among them, the asset-liability ratios of Li Auto Ltd and Xpeng Ltd are both close to 50%, but neither exceeds 50%, indicating that these two companies have fully utilized their financial leverage while ensuring debt repayment. However, the asset-liability ratio of NIO Ltd has exceeded 70%, which may make the enterprise unable to repay debts in the future, which is caused by too many accounts payable to NIO Ltd.

Finally, based on the indicators of development capability, it can be found that the business growth rates of all three companies have exceeded 25%, but the ideal business growth rate is much higher than the business growth rates of the other two companies, because the business growth amount of the Li Auto Ltd is much larger than that of the other two companies. About the capital accumulation rate, except for the ideal company, the capital accumulation rate of the remaining two enterprises is negative, which indicates that Weilai and Xiaopeng are weak in coping with risks and sustainable development. The reason for this is that the owner's equity of the two enterprises at the end of the year has decreased compared to the beginning of the year, resulting in negative growth, which makes the capital accumulation rate not negative.

4.2. Investing Advice

From the perspective of investors, at present, the investment risks of these three companies in the new energy vehicle industry are relatively high, and it is recommended to invest cautiously. Because the EV/EBITDA values of these three companies are all negative, this is because the profits and losses of the companies are too large. At the same time, the net profit margin, price-to-earnings ratio, and other profitability of the three companies are currently flawed. Although the current value of the enterprise is very low, it is difficult to turn losses into profits in a short period. Therefore, it is not recommended for investors to invest in these three enterprises at this stage.

4.3. Company Development

From the perspective of manufacturers, if new energy vehicle companies want to turn losses into profits, they must stabilize their supply chain and have a stable source of goods to stabilize the cost prices of chips and batteries, thereby achieving cost control and increasing profits. Meanwhile, currently, the main source of profit for new energy vehicles is still sales. Therefore, new energy vehicle companies need to continuously improve relevant supporting facilities, such as charging stations, to promote the development of electric vehicles and increase market demand, thereby increasing sales and profits. In addition, because of the short rise of new energy vehicles, the majority of consumers still have concerns about this, fearing that electric vehicle technology is not mature

enough and its safety needs to be observed. Therefore, new energy vehicle companies also need to continuously innovate technology, improve the safety of new energy vehicles, expand their audience, and thereby increase sales and profits. Finally, each new energy vehicle enterprise should also take a differentiated approach and lay out the new energy vehicle market at different price points to reduce competitors and competitive pressure, thereby promoting sales growth and achieving the goal of turning losses into profits as soon as possible.

5. Conclusion

This article analyzes the investment value of the new energy vehicle industry, taking NIO, Xiaopeng, and Ideal as examples.

Through the analysis of the financial data of three Alternative fuel vehicle enterprises, it can be found that there are some problems in the profitability of the three enterprises, with huge profits and losses. However, the operational capabilities of the three companies are relatively good. In addition, the debt repayment capabilities of the two car companies other than NIO are relatively good, while the development capabilities of the two car companies other than Li are relatively lacking. At present, the enterprise value multiples of the three companies are relatively high in terms of data risk. That is to say, at present, new energy vehicles companies such as Li, NIO, and Xiaopeng are still in a huge loss situation, and this situation is difficult to change in the short term.

It can be seen that although the new energy automobile industry is a market with great development potential, but at present, the new energy automobile market is still at the initial level of development, which means that there are still many problems waiting to be discovered and solved in the current and possible future of new energy automobile enterprises. Therefore, it is not recommended for investors to invest in this market in a short period.

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