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The Corporate Strategy Study of NIO Company

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Abstract: A growing need for investment and transactions in the new energy vehicle business has been seen in recent years due to the industry's quick expansion. China's national policies also strongly support the development of new energy vehicles. Take NIO as a case; NIO is a global new energy vehicle company founded in 2014. At present, it is also a leading automobile brand in China. This article will estimate the cash flow of NIO for several years and give the cash flow forecast of NIO through the DCF valuation model. Finally, the business and technology of NIO will be analyzed from different stages of the business environment.

Keywords: enterprise valuation, DCF model, new energy vehicles

1. Introduction

In recent years, due to energy constraints and increasing pressure on environmental protection, car manufacturers are no longer able to adapt to environmental protection and sustainable development, and the demand for new energy vehicles is growing. China is a large country with a large population and many vehicles, and new energy vehicles are strategically crucial in China. They will have greater scope for development in the "double carbonization" environment. A value assessment of new energy vehicles can help us better understand the development trends of the automotive industry and provide a basis for investors to make investment decisions. Therefore, this paper will mainly use the DCF valuation model for analyzing the cash flow situation of NIO, and the resulting error is about 17.6%. Secondly, this paper analyzes NIO's technology innovation strategy and business model innovation in different environmental stages. It is mainly divided into three stages: the starting stage, the catch-up stage, and the beyond the stage. In order to analyze the development of China's new energy vehicles.

2. New Energy Vehicle Enterprise Industry Analysis

2.1. Rising Sales of New Energy Vehicles

In recent years, as the country constantly support policy for new energy vehicles, the change of national consumption concept and environmental awareness of enhancement, new energy vehicles life capacity and improved charging facilities, the market potential of new energy vehicles in China was fully released, new energy vehicles market penetration index have further improved, new energy vehicle sales show the growing momentum in the volatility.

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From the perspective of market development, in recent years, the new energy vehicle industry has made specific achievements; in the production, the production of new energy vehicles has also been significantly improved. There are more and more types of new energy vehicles, and consumers' choices and diversification requirements are also increasing. In general, the overall development momentum of new energy vehicles is excellent regardless of the output, sales, or related varieties. The country has played a role of macro-control in its development; the research and development level and results of new energy vehicles have been improved, the vehicle range and battery capacity density have been greatly improved, and the overall ideal development results have been achieved [1].

2.2. Policy Analysis

The relevant government departments have proposed in their policies to create a suitable environment for innovation and to implement new models. Companies with high core technology and high innovation capacity are the prominent members, and other relevant companies participate through share purchase or cooperation; companies use their innovation resources in the process of development and cooperate with other universities and research institutions to conduct technological research and form alliances, and multiple companies cooperate to integrate resources better. Subsidies show an accelerating trend of withdrawal [2].

Over the last 20 years, but in general, it has regressed. The subsidy policy has shifted towards new energy vehicles, including battery range and power consumption. Moreover, the government's support for new energy vehicles has gradually shifted towards good companies, reducing subsidies for small, laggard companies and expecting more money to be invested in large companies to promote innovation in related products and technologies.

China's financial subsidies are gradually shifting to infrastructure construction, and local governments at all levels are paying more attention to the construction and improvement of infrastructure, such as charging piles. For example, on 31 March 2020, the Tianjin Municipal Development and Reform Commission issued measures on the construction of public charging piles in residential areas 2020, and the demand for the construction of charging piles in residential areas began to be gradually implemented.

At present, the income, cost, and market methods are widely used at home and abroad, but these methods have their own application scope and limitations. The cost approach refers to enterprises where the cost of the appraised object is traceable and measurable, dominated by tangible assets, and has a high fair value. The market approach is applied to listed companies with a more active public market and a high number of comparable transaction cases. As the new energy vehicle industry is technology-intensive, its costs are difficult to measure fully, so the cost approach cannot be applied. The market approach is challenging as it is difficult to find comparable companies in the domestic automotive industry. The income law is based on the prediction of future profits. By discounting future income, it can more accurately determine the company's total asset value. Therefore, the income method is more suitable for new energy vehicle companies [3].

3. Enterprise Value Assessment of NIO Motors Limited

The DCF discounted cash flow model reduces the expected cash flows of a company over a specific period to their present value. A company can only be valued in theory and practice if it can assure future profitability [4]. In this evaluation case, the historical cash flow of the enterprise in the past period is first analyzed to predict the free cash flow of the enterprise for the next period. Then the discount rate is obtained through the risk-free return rate, the risk-return rate, and the discount coefficient, and finally, the value of the enterprise is obtained through the discount model.

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Calculation of historical free cash flow

Cash flow = earnings before interest and tax (1-income tax rate) Depreciation increase and amortization increase-working capital increase-Capital expenditure income tax rate is calculated at 25%. According to NIO's annual balance sheet, income statement, and cash flow statement, NIO.

Table 1: Calculation of historical free cash flow.

Projects	2018	2019	2020
Corporate cash flow (1 million dollars)	-2421.77	-1031.76	-601.86

As can be seen from the above table, the cash flows of NIO Motors Limited from 2018 to 2020 are generally negative but generally on an upward trend; therefore, based on the growth rate of free cash flow for the years 2018-2020, the growth rate is found to be high in absolute terms and will generally maintain this growth trend, thus making the relevant cash flow forecast for NIO Motors Limited.

Projected cash flows of the enterprise for the next five years

Table 2: Projected cash flows of the enterprise for the next five years.

Projects	2021	2022	2023	2024	2025
Corporate cash flow (1 million dollars)	-630.52	-558.87	745.16	1891.56	3138.27

Calculation of discount rate

The discount rate is calculated using the weighted average cost of capital.

$$\mathrm{WACC} = (\mathrm{E} \div \mathrm{V}) * \mathrm{R_e} + (\mathrm{D} \div \mathrm{V}) * (1 - \mathrm{T_C}) \quad (1)$$

Among them, Re is the cost of equity, which is the necessary rate of return for investors; Rd is the debt cost; $\mathrm{V} = \mathrm{E} + \mathrm{D}(2)$ is the market value of the enterprise; $\mathrm{E} \div \mathrm{V}(3)$ is the percentage of share capital in the total financing, and the capitalization ratio; $\mathrm{D} \div \mathrm{V}$ (4) is debt in financing Percentage of total assets, asset-liability ratio; Tc is the corporate tax rate. The CAPM model is used to determine the cost of equity: $\mathrm{R_e} = \mathrm{R_f} + \beta(\mathrm{R_m} - \mathrm{R_{f)}}(5)$ In practice, the Treasury yield is generally selected to replace the risk-free yield R_f, and the continuing operation is the accounting assumption, and the Treasury yield is 2.6%. Rm, select the CSI 300 index; as of August 17, 2022, the annualized yield of the CSI 300 index is 8.76%, minus the risk-free interest rate of the same period (calculated by the yield of 10 years of 2.60%), and get 6.16%. The coefficient indicates the volatility of a particular enterprise relative to the entire industry and reflects the price volatility of individual stocks to the entire stock market. According to the database, the coefficient of NIO Automobile Limited company is 1.95. Therefore, it can be concluded that the equity cost of the enterprise is $R_e$is 9.54%, the debt cost is 5%, and the income tax rate is R_d 3.75%. According to the annual report of NIO Corporation in 2021, the enterprise assets are 82.884 billion, the total liabilities are 44.82 billion, the total equity is 38.063 billion, the income tax rate is 25%, and WACC is 5.9% [5].

Predicting the value of a business

Based on the confirmed parameters, an enterprise value assessment was carried out for NIO Automotive Ltd.($ 1 million)

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Table 3: Predicting the value of a business.

Subjects	2021	2022	2023	2024	2025
Business Forecast Cash Flow	-637.56	565.11	753.48	1912.68	3173.31
Discount rate	5.9%	5.9%	5.9%	5.9%	5.9%
Discounted value	-602.06	503.96	634.37	1502.73	2382.45

As a result, the total cash flow of NIO Motors Limited over the forecast period is 4439.59 million.

The growth rate of the perpetual annuity of enterprises is generally taken as the growth rate of gross national product (GDP) expressed. To make the research data more accurate, this paper selects the percentage contribution of secondary industry to GDP from 2016-2020

The alternative, from 2016 to 2020, is 2.50%, 2.40%, 2.30%, 2.20% and 2.20% respectively. The arithmetic mean is 2.32%, and therefore 2.32% is adopted as the growth rate of the perpetual annuity of NIO Motors Limited.

The subsequent terminal value of NIO Motors Limited $TV = \frac{FCF_{2025}*(1+g)}{WACC-g}$=90696.39 (6) million, discounted to 68094.16 million plus expected cash flows of $71267.47million. Because NIO has a secondary listing, it now has a net loss of $20 billion in market capitalization. Now use the market value in May 2021 and discount it to 58718.3million by 2022. The DCF model predicts a value error of around 17.6% [6].

4. Analysis of Environmental Issues in the NIO Car

4.1. Analysis of the Environment at Different Stages of Development of NIO

The innovation and development stage of NIO can be divided into the early stage, when NIO just entered the new energy field (2014-2015); the catch-up stage (2016-2018), where NIO gradually establishes its position; and the catch-up stage (from 2019 to now), NIO has become the leader in the industry [7].

The initial environment is layered. Technical conditions: At present, the domestic new energy vehicle industry holds few technology patents, while in the field of new energy vehicles, the core technology level is still shallow, and infrastructure and service systems are also relatively backward. In summary, the main manifestations are: the core technology of new energy vehicles needs to be strengthened, supporting facilities are not perfect, and the standardization work needs to be further improved. Market environment: New energy vehicles are an opportunity for China to accelerate development and catch up. As people's awareness of the pursuit of quality of life and the protection of the natural environment increases, the demand for new energy vehicles is also growing. Institutional environment: With the introduction of various national policies, the "rules of the road" in China's automotive industry have undergone a significant cleansing, which has also had a particular impact on the development trend and speed of China's automotive industry. The government attaches great importance to implementing the new energy vehicle development strategy, establishing a sound policy system, and promoting the healthy development of the new energy vehicle industry.

Environmental analysis under the development phase. Technological environment: The major automobile manufacturers have established a foundation in researching and developing new energy technologies and have begun to attach importance to expanding market channels to meet customers' needs and satisfy their demands. The research and development of new energy vehicles continue to increase; the domestic new energy vehicle technology has reached the highest international level, products, technology, services, and other aspects of coordinated development. Market environment: The new energy vehicle industry is becoming increasingly mature, the industry is developing rapidly, and the competition among the industries is becoming increasingly fierce. Only in terms of security

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and economy can they constantly adjust their marketing strategy to adapt to the development of The Times and gradually push the local market to all levels. Institutional environment: 2016 is a year of new energy policy standardization. To promote the development and application of new energy vehicles, the government has issued relevant incentive policies on new energy vehicles and formulated access standards for the new energy vehicle industry.

The situation of catching up is analyzed. Technical environment: New energy vehicles have entered the national development strategy, the battery, motor, and electric control technology of new energy vehicles has become mature, and the development of the three electric technology has entered a new stage. After accumulating enough resources, their battery technology has been among the top in the world. At present, new energy vehicles have realized multi-mode human-machine interaction. Market environment: By attaching great importance to the power demand of service innovation, the new energy vehicle industry has developed rapidly. In just five years, the ownership of new energy vehicles has increased ten times. New energy vehicles have been an essential pillar of NIO's automobile industry. NIO also attaches great importance to customers' feelings, making customer service its most significant competitive advantage. Institutional environment: The adjustment of industrial policies can be divided into "relaxation" and "marketization." In 2020, the national and local governments began to implement the "two-pronged" policy, both sides jointly promoting the development of new energy vehicles; at the same time, the Standing Committee of the State Council also held a 15-year development plan on new energy vehicles, laying a good foundation for the subsequent development.

4.2. Technological Innovation Strategies and Business Model Innovation at Different Stages of Development of NIO Motors

Initial stage: technology innovation strategy and efficient business model innovation of technology introduction. Technology innovation strategy: Technology introduction. NIO has adopted this strategy to occupy a specific position in the manufacturing of new energy vehicles and mainly introduced Tesla batteries and charged technology. For the whole new energy vehicle industry, after Tesla's introduction to China and its localization, it is conducive to boosting the domestic new energy vehicle enterprises to catch up in technology to promote the rapid technological upgrading of the whole industry. Business model innovation: efficient type. Due to the constraints of the external environment and the enterprise's capabilities, NIO chose an efficient business model. This business model innovation constructs a market feedback mechanism based on user participation, which makes the communication and information transmission between enterprises and customers in the sales link timelier, makes the transaction volume and service efficiency of NIO significantly increased, and realizes the purpose of NIO to acquire value continuously. Innovation and catch-up performance: NIO has gathered rich global resources and excellent research and development team, through learning and introducing external resources to improve its manufacturing and supply chain layout, to study and form its overall manufacturing and supply chain layout [8].

Development stage: jointly developed technology innovation strategy and mixed business model innovation. Technology innovation strategy: Joint development. NIO's goal is to build a globally competitive positive R & D system, to set up design, research and development, and service institutions around the world, rely on regional superior talents and resources, to build a solid and complete global research and development network, and master a series of core technologies of intelligent electric vehicles. Business model innovation: Novel / efficient hybrid. Facing the continuous improvement of customer demand and market environment, NIO is prompted to pay attention to the hybrid business model innovation combining efficiency and novel business model innovation. In recent years, NIO has signed agreements with many investors to realize value creation by financing and developing a technology base. Moreover, according to the problems of inconvenient

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user charging and battery life, it has established a unique guaranteed system combined with the Internet to realize the value creation and innovation of novel and efficient business models. Innovation pursued performance: NIO continues to get through the market, also strengthens the cooperation with various resources, realizes the constantly improving ability of technological innovation and vast improvement of product and service quality, launches new concept models, creates new car interaction way, can successfully rely on technological innovation and business model innovation to drive industry sales.

Catch-up stage: self-developed technology innovation strategy and innovative business model innovation. Technological innovation strategy: independent research and development. With the continuous research, development, and innovation of NIO, it has realized the development from technology introduction to joint development and then to independent research and development in terms of core technology and power-changing technology. In terms of the core technology of three power, NIO has been able to develop the electric motor control independently; in terms of power changing mode, it mainly serves "NIO owners" and has launched the second generation of charging stations, and the number of charging stations has been steadily increasing. Business model innovation: novelty. To adapt to the complex, competitive environment, NIO has realized the change of business model innovation from efficiency to innovation. In terms of value delivery innovation, NIO launched the NIO Service service system to improve user satisfaction; in terms of value creation innovation, NIO launched the NIO Life system based on high-quality products to meet the user experience. Innovation catch-up performance has several inventions, patent technology, and a perfect service system. NIO has launched more models and advanced battery charging technology, which benefits from independent research and development of technology patents, so the launched products and services begin to have strong competitiveness. Also, NIO pays attention to customer experience and has a complete service system.

5. Conclusion

Because of the problem of secondary listing, the current market value cannot represent the index problem, so we choose to feedback on the problem through the 2021 discount. The final DCF valuation model error is about 17.6% which contains uncertainty; research found that NIO. In recent years, the cash flow will change from negative to positive, with rising momentum [9]. Hopefully, as NIO goes public in the SGX, it will gain many opportunities to reach global institutional investors. Nio's customers in the Asia-Pacific region will also invest in and trade Nio shares in the Asian session. Singapore is an ideal starting point for NIO to enter the Southeast Asian market as an international financial and financing center [10].

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