The Research of Financial Analysis of Li Auto Based on Harvard Analysis Framework

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Abstract. The new energy vehicle industry is currently experiencing robust growth, with numerous companies actively engaged in various business activities of the industrial chain. Recognizing its potential, the Chinese government has placed significant emphasis on the new energy vehicle industry, considering it a key driver of economic growth. Focusing on the financial reports from 2021 to 2023 for Li Auto Inc., this essay employs the Harvard Analysis Framework to comprehensively assess the company's financial landscape, encompassing strategic, accounting, finance, and future prospects. Employing the strategic model, which involves a PEST and SWOT analysis for Li Auto, along with a detailed examination of key accounting and financial data, the findings indicate that the company's solvency, while on average, displayed a declining trend, and its profitability was less than stellar. However, the operating ability exhibited a favorable condition. The recommended solutions for addressing the company's challenges primarily revolve around internal management strategies, emphasizing the reduction of operating expenses, enhancement of profitability, and the cultivation of a technological competitive advantage. These measures aim to improve the company's financial performance and overall development in the dynamic landscape of the new energy vehicle industry.

Keywords: Li Auto Inc., Harvard Analysis Frame, New Energy Vehicle, Financial Performance.

1. Introduction

New energy vehicle (NEV) enterprises primarily engage in the design, research and development, and production of electric vehicles powered by new energy sources. They also offer ancillary services such as maintenance, finance, and support for charging stations. Presently, China stands as a key player in the global research and development of new energy vehicles, with its export volume leading the world. The national government actively promotes the new energy vehicle industry through a range of policies, including tax incentives, subsidies, and reductions in land costs. While these policies create growth opportunities for domestic NEV enterprises, they also pose challenges.

Li Auto is a prominent manufacturer in the field of clean energy vehicles, specializing in the design, development, manufacturing, and marketing of such vehicles. Currently, it ranks among the largest and most promising new energy vehicle corporations in China, with its shares listed on both the Hong Kong Stock Exchange and Nasdaq. Li Auto has introduced various models to the market, with the L7, L8, and L9 being family SUVs equipped with five or more seats. A distinctive feature of Li Auto's vehicles is their dual-mode capability, allowing them to be powered by both electric energy and fossil fuel. This unique characteristic, facilitated by Li Auto's proprietary range extension system, sets the company apart in the Chinese Energy Vehicle market. This technology enables Li Auto's cars to achieve an extended range compared to conventional battery electric cars. The company aims to enhance technology continuously, focusing on the development of smart family vehicle solutions, range extension systems, and next-generation electric vehicle technology to generate new revenue growth points and deliver added value to customers.

Currently, there is much research on the status of Li Auto. For instance, Wu conducted a study on the development strategy of Li Auto and analyzed its external and internal development environment, as well as the analysis of competitors. Gu and Che analyzed the impact of research and development investment on the financial performance of Li Auto. In addition, Yu researched the marketing strategy of new energy vehicles, as an example of Li Auto, analyzing the current situation, issues, and optimization strategies from a sales perspective. The above analyses for the company mainly focus

on its internal and external environment, development of marketing strategies, and investment in research and development. There is a lack of accounting and financial analysis for Li Auto in these studies.

This paper adopts the Harvard analysis framework to analyze Li Auto. It first introduces the theoretical basis of this framework and then, with the order of strategic, PEST, SWOT, accounting, financial, and prospective analyses, evaluates the company's overall performance. The paper analyzes and elaborates potential factors and environments that may contribute to the results. Finally, based on the analysis results, recommendations are provided from the perspectives of internal management and external financing.

2. Harvard Analysis Framework and its Components

The Harvard analysis framework, proposed by three scholars from Harvard University—K.G. Palepu, P.M. Healy, and V.L. Bernard in 2004, is a financial analysis framework that comprises four main components: strategic analysis, accounting analysis, financial analysis, and prospective analysis.

2.1. Strategic Analysis

Strategic analysis is the starting point of the Harvard analysis framework, focusing on the external environment in which a company operates, its strengths and weaknesses. The goal is to identify operational risks and discover profit drivers. Typically, macro and micro environments are studied using models such as the PEST model, and SWOT model. Strategic analysis integrates qualitative analysis into the traditional analysis of financial statement data, distinguishing it as a prominent feature of the Harvard analysis framework.

2.2. Accounting Analysis

Accounting analysis serves as the foundation for financial analysis and falls under the category of quantitative analysis. This section starts from the most straightforward financial statement data and information, analyzing and determining whether the accounting information objectively and truthfully reflects the company's operational status. The aim is to ensure the integrity and accuracy of financial data.

2.3. Financial Analysis

Financial analysis under the Harvard analysis framework examines individual financial indicators over consecutive years. A series of key indicators are scientifically employed to horizontally and vertically compare and analyze the company's solvency, profitability, operational efficiency, and growth capabilities. This approach enables an evaluation of the company's operational performance.

2.4. Prospective Analysis

Prospective analysis, based on the results of the above analyses, involves summarizing and deducing the problems that the company faces. It utilizes different perspectives to forecast the future development direction and potential of the company, which helps internal operators adjust strategic plans and external investors make informed decisions.

3. Li Auto’s Specific Financial Analysis based on the Harvard Analysis Frame

3.1. Strategic Analyze

3.1.1 POST Analyze

(1) Politics Environment Analysis

In order to open New Energy vehicle market and support its health development, Chinese government has published the middle and long-term developed planning of Automobile Industry in

2017, and its main purpose is to cultivate and support a number of Chinese sanitary energy vehicle corporations to make competitions in international markets. These published files provided a favorable opportunity for the new energy corporation to grow up [1]. Moreover, Chinese government also published policies of tax deduction, subsidization, and lower debt rates for the new energy car companies. In the meantime, the government also subsidized customers for purchasing sanitary cars and imposed no tax. Besides, in the world, several European countries such as Germany, Dutch land, and Norway, have passed the act of ban on the sale of fossil fuel cars almost in the middle of the 21st century, and worldwide developments for new energy vehicles also provide chances for new energy cars that made in China to export to other countries [2].

(2) Economic Analysis

Generally, under the same level class of a car, a sanitary vehicle is cheaper than an engine car, and the fossil fuel is expensive and its floating price is not as steady as electric power. However, Consumers' willingness to purchase new energy vehicles is closely associated with factors such as government policies, product quality, and charging infrastructure. Issues related to charging safety and driving range within product quality have emerged as significant barriers preventing potential users from choosing new energy vehicles. On the other hand, the level of development in charging infrastructure plays a crucial role in determining the widespread adoption of new energy vehicles. The distribution and management of charging stations can also impact the prevalence of new energy vehicles in specific regions [3].

(3) Society Analysis

In China, many young generations show great interest in the new energy cars, and the price also is acceptable for them. Li Auto’s vehicle is quite popular especially for now young families because Li Auto’s main product is the SUV, and the multifunction of the SUV is practical for the family’s daily life. On the other hand, CO2 emission, air pollution, and rising gas price also directly or indirectly affect people’s daily life, and make consumers intend new sanitary car when they choose cars [2].

(4) Technology Analysis:

Currently, In China’s new energy vehicle market, the technology of power battery is in a leading position, and most domestic new energy corporations do not need to purchase power battery from foreign companies. The CATL and BYD have an ability to sufficiently supply the domestic companies’ battery demands. In other aspects, the technologies of electric motors and electric control systems still need to be improved because most domestic new energy car companies depend on outsourcing, and the two parts are core parts for electric motor vehicles. If the domestic electric car companies cannot overcome these two core technologies or develop their own electric motor and electric control system, it is difficult to gain competitive advantages versus foreign companies, like Tesla.

3.1.2 SWOT Analysis:

Based on the SWOT analysis model, the essay will conduct an analysis for Li Auto’s strength, weakness, opportunity, and threat.

(1) Strength

Li Auto’s range extension technology is in a leading position, and this feature is a quit significant index for electric car because it decides how long the car drive without charge. Li Auto has its own manufacturing factories, and it is already able to lead volume product for a car model. Meanwhile, the company’s cash flow is adequate and has stronger capital reserve as well.

(2) Weakness

Electric motor, electric control system, and battery, are three core components for the new sanitary car. However, these three components for Li Auto are all outsourcing, which means that Li auto did not able to develop and produce its own electric motor, electric control system, and battery, and that may cause decrease of product competitiveness in the domestic market. Currently, the Li Auto’s car model is relatively limited, providing customers with small selection range. Its products have little distinguishes in design, pricing, and functionality, only including MPV and SUV, and targeting

customers is single because most of the buyers are middle-class families, which is beneficial for increasing the sales number [4].

(3) Opportunity:

Under the effects of macro policies and carbon neutrality, Li Auto is still able to benefit from a series of preferential policies, such as governmental subsidies and tax tax-deduction [5]. Besides, the existing models of Li Auto are both SUV and MPV, and they are large-size vehicles. So, Li Auto still has opportunities to develop sedans and explore this market.

(4) Threat:

The Li Auto's range extension electric car actually is not a regular electric car because it still has a fuel engine, and it is usually called a hybrid car. So, it is not sure whether or not the company will still be included in the government's preferential policies in the future [5]. Moreover, the company's key components of the electric car are controlled by the supplier and have weaker bargaining power. Thus, one single car's expense is limited to reduce continually. Other competitors are almost manufacturing pure electric cars, and many of them are accelerating to integrate the supply chain and construct strategic cooperation relations with multiple corporations in order to improve research ability for electric cars and resolve infrastructure problems, like charging piles [5].

3.2. Accounting Analyze

3.2.1 Total Revenue

Based on table 1, it comes from Eastmoney [6], which describes the total revenue of Li Auto Inc. and the percentages increase/decrease over three years. From the year 2021 to 2023, Li Auto's total revenue is 26.31 billion, 45.29 billion, and 123.9 billion respectively, so its total revenue is showing an annually increased trend. During 2021 and 2022, the economy of China and citizens' activities were negatively influenced by the COVID pandemic as well as the company, and that might be one of the reasons why the total revenue for the two years was much lower than in 2023. Once the pandemic is over, Li Auto could able to fully develop and operate its efficiency in management, marketing, and manufacturing, and people's income also became comparatively stable. On the other hand, the company continually strengthens and optimizes its advanced features, and range extension system, and improves the experience in the human-vehicle interaction system, which guarantees that its products would still be appealing to a particular group of customers.

Table 1. Total Revenue Chart (CNY Billions)

	2023	2022	2021
Total Revenue	123.9	45.29	26.31
Percent Changes	173.57%	72.14%	-

3.2.2 Operating Expense

Table 2 describes the operating expenses for Li Auto Inc. over three years, and the data sources come from eastmoney [6]. It was divided into two specific parts; Selling General and Administrative Expenses, and Reseach & Development Expenses. In the year 2023, the selling general and administration expenses and research & development expenses reached a new high compared with the last few years, particularly for the research expense, which exceeded 10 billion, 10.59 billion, and the research & development expense of 2023 increased 56.19% than 2022; that was more than a half percent. It can be inferred that the company put considerable funds, resources, and effort into the research, which included developing a new car model, updating the human-vehicle interaction system, creating its own electric control system, etc. Besides, the selling general and administration expense was 9.76 billion, which rose 72.43% compared with last year, demonstrating the company may use a lot of resources to implement its marketing strategies, such as advertisement, and enhance the efficiency for manufacturing and supply chain. These high expenses actually make a difference in every aspect of the company, especially reflecting the sales revenues.

Table 2. Operating Expense Chart (CNY billions)

	2023	2022	2021
Selling General and Administrative Expense	9.768	5.665	3.492
Research &Development Expense	10.59	6.78	3.286

3.2.3 Net Profits

Table 3 depicts the new profit of Li Auto Inc. in the last three years and gives the percentage changes compared with last year, and the data is from eastmoney [6]. The net profits are only positive in the year 2023, and it was 11.81 billion. The other years' net profits were all defective, the reason is that the company was still in the growth stage in the past few years, and its management, operation, and manufacturing were not mature. However, with the company's rapid development and the COVID pandemic over, its products and services apparently would be able to produce profits, and this might be attributed to the unit price for the company's car models. The unit price of every single car is higher 30~40 percent approximately than other new energy cars, and this could guarantee that the company could make comparative profits from its products.

Table 3. Net Profit Chart (CNY Billion)

	2023	2022	2021
Net Profit	11.7	-2.032	-0.32
Percent Changes	675.8%	-535.0%	-

3.3. Financial Analysis

3.3.1 Solvency Ratio Analyze

Solvency reflects the extent to which a company is able to guarantee the repayment of its debts, including short-term solvency and long-term solvency. This paper utilizes the current ratio and quick ratio to analyze short-term solvency. Long-term solvency is analyzed by using the debt-to-asset ratio. Table 4, supported by Morningstar and Yahoo Finance [7-8], summarizes the company's current ratio, quick ratio, and debt to total asset ratio from 2020 to 2022. From the solvency ratios chart, its current ratio and quick ratio show a decreased trend over the last three years, which indicates the company's liquidity become slow and has low efficiency in generating cash from its assets and operations. So, Li Auto's solvency ability for short-term debt is weaker now. Besides, the debt to total asset ratio has annually increased over the last three years. The percentage of total debt becomes more respective to the total assets. Li Auto has invested more money in manufacturing, such as opening more factories and expanding the production lines for new car models, and the company had to utilize more debt to leverage its assets, causing reduced long-term solvency.

Table 4. Solvency Ratios Chart (In %)

	2022	2021	2020
Current Ratio	2.45	4.33	7.28
Quick Ratio	2.07	3.95	6.72
Debt to Total Asset Ratio	14.17	12.68	5.80

3.3.2 Profitability Ratio Analyze

Profitability reflects a company's ability to generate profits and continuously increase its funds. This paper uses the net profit margin and return on equity to measure the level of profitability, and the data in Table 5 originates from Morningstar and Yahoo Finance [7-8]. Li Auto's Net Margin has remained in a loss position from 2020 to 2022, and its return on assets has consistently been in negative status. These data indicate that the company has not yet turned profitable, primarily due to significant ongoing investments in developing new vehicle models and establishing a more robust marketing model. Additionally, poor cost control is evident, with sales expenses, research and development expenses, and production expenses collectively accounting for approximately 50% to

60% of the Sales Revenue. The impact of the pandemic may also contribute to sluggish vehicle sales and increased management costs.

Table 5. Profitability Ratio chart (In %)

	2022	2021	2020
Net Margin	-4.44	-1.19	-1.19
Retrun on Assets	-2.71	-0.65	-3.45

3.3.3 Operational Ratio Analysis

Operational efficiency reflects the effectiveness of a company in utilizing various assets, and in this paper, inventory turnover, accounts receivable turnover, and asset turnover are selected to analyze operational efficiency. These data ratios are presented in Table 6 and cited from Morningstar [7]. Li Auto's inventory turnover for the fiscal year 2022 is lower than the previous two years, indicating a potential inventory backlog and a decrease in the efficiency of converting inventory into cash. However, the accounts receivable turnover rate continues to rise, indicating the company's strong cash realization capability and high management efficiency in collecting receivables. The total asset turnover rate is showing an increasing trend, suggesting that the company's asset operation efficiency has improved, and the substantial investment in assets has resulted in favorable revenue outcomes.

Table 6. Operational Ratio chart

	2022	2021	2020
Inventory Turnover	8.67	15.94	10.1
Accounts Receivable Turnover	536.19	228.81	152.71
Asset Turnover	0.61	0.55	0.41

3.4. Prospect Analysis

In the current situation, the market share of new energy vehicles is continuously expanding, and favorable governmental policies are expected to persist. Consumer acceptance and recognition of new energy vehicles are also increasing. However, the competition in the new energy vehicle market is intensifying. Not only are new players entering the market, but some traditional automotive companies are also venturing into the research and development of new energy vehicles. Even technology companies like Xiaomi and Huawei are entering this market [2]. In the long term, Ideal Automobile's development prospects face significant challenges. Firstly, Li Auto only began turning a profit in 2023, and the question remains whether it can sustain profitability within the industry in the next three years. Secondly, Li Auto still outsources its core components, such as electric motors and electronic control systems, from other companies, without its own production and research capabilities. Thirdly, the company sources its electric vehicle batteries from external suppliers, lacking production capacity and making it vulnerable to fluctuations in battery prices. In summary, Li Auto needs high-quality products and technology with strong core competitive advantages to survive and achieve profitability in the market.

4. Recommendation for Li Auto

Li Auto should continually increase the budgets for research, and the research investment currently is the most direct and effective resolution, especially when the company cannot design and research its own electric motors and electric control systems. The research investment budgets could be the primary consideration for the company's future development, making sure its research department has adequate capital support. Li Auto also should encourage creativity and technological breakthroughs because they are core drives for research [9].

Currently, Li auto procures its batteries, motors, and electronic control systems from external suppliers with a weaker bargaining position and an increase in unit costs. It could enhance and integrate its supply chain system by reaching strategic cooperative partnerships or entering into long-

term procurement agreements with key suppliers to improve bargaining power and reduce costs. Additionally, Ideal Automobile needs to concentrate resources on cost control, particularly in managing the company's selling expenses and operating costs to increase profitability. As the new energy vehicle industry enters a stage of high-quality development, simply investing heavily in marketing may no longer yield cost-effective sales for the company. By segmenting different price ranges, establishing various after-sales service packages, and developing targeted product services, Li Auto can not only align services more closely with consumer needs but also minimize costs to the maximum extent [10].

5. Conclusion

Through the analysis of Ideal Automobile's strategy, accounting, and finance, this paper concludes that, despite having specific target customers and a certain market share in the new energy vehicle market, the main business of Li Auto has been in a loss-making state until turning profitable in 2023. Additionally, the competition in the domestic new energy vehicle market has entered a new stage, with some companies engaging in price competition by continuously lowering prices. If the company aims to succeed in industry competition and sustain profit growth in the coming years, it must enhance its core competitiveness in technology and production through research and development. This will help in reducing production costs and expanding production.

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